

# West Virginia University Health Sciences Catalog 2008–2010

School of Dentistry  
School of Medicine  
School of Nursing  
School of Pharmacy



West Virginia University is a land-grant research institution founded in 1867. WVU is a student-centered learning community meeting the changing needs of West Virginia and the nation through teaching, research, service, and technology.

The *West Virginia University Health Sciences Catalog 2008–2010* is a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. In order to reach the goals and fulfill the mission of the University, the courses, requirements, and regulations contained herein are subject to continuing review and change by the West Virginia Higher Education Policy Commission, the WVU Board of Governors, University administrators, and the faculties of the schools and colleges. The University, therefore, reserves the right to change, delete, supplement, or otherwise amend the information, course offerings, requirements, rules, and policies contained herein without prior notice. The indicia depicted are registered trademarks of West Virginia University. Copyright © West Virginia University, 2008.

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\*Current as of February, 2008.

West Virginia University is governed by the West Virginia Higher Education Policy Commission and the WVU Board of Governors.

West Virginia University is a member of the Higher Learning Commission. The University's educational programs are accredited by the Higher Learning Commission (NCA) of Colleges and Schools and by the appropriate accreditation agencies for professional programs.

West Virginia University is an Equal Opportunity/Affirmative Action Institution. The University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin in the administration of any of its educational programs or activities, or with respect to admission or employment. Further, faculty, staff, students, and applicants are protected from retaliation for filing complaints or assisting in an investigation under the University's Equal Opportunity/Affirmative Action Plan. Inquiries regarding the University's non-discrimination policy may be sent to the director, Affirmative Action Office/Equal Employment Opportunity Programs, West Virginia University.— Office of the President.

### West Virginia University Administration

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*Executive Officer for Communications*, Bill Case

*Executive Officer for Policy Development*, Jennifer Fisher

*Vice President, Administration and Finance*, Narvel

Weese

*Vice President, University Advancement and Marketing*,

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*Vice President, Student Affairs*, Kenneth D. Gray

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*Development*, Curt Peterson

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*Campus Provost, WVU Potomac State College*, Kerry Odell

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*Associate Vice President for Research and Graduate*

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*Division*, L. Clark Hansbarger, M.D.

*Associate Vice President for Health Sciences-Eastern*

*Division*, Mitch Jacques, M.D., Ph.D.

*Associate Vice President and Dean of Students*, David

Stewart

*Assistant Vice President of Student Affairs*, Michael

Ellington

*Assistant Vice President for Graduate Education*, Jonathan

Cumming

*President and CEO, West Virginia University Alumni*

*Association*, Steve Douglas

*President, West Virginia University Hospitals, Inc.*, Bruce

McClymonds

*Chair, West Virginia University Faculty Senate*, Steve

Kite/Virginia Kleist

*Chair, West Virginia University Staff Council*, Terry Nebel

*President, West Virginia University Student Body*, Jason

Parsons

*Special Assistant to the President*, Valerie Lopez

*Special Assistant to the Provost*, Jessica Thomas

*Executive Assistant to the President*, Sara A. Master

## WVU Health Sciences Administration

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Associate Vice President for Research and Graduate Education, Thomas M. Saba, Ph.D.  
Interim Associate Vice President for Finance and Administration, Daniel A. Durbin  
Associate Vice President for Rural Health, Hilda Heady, M.S.W.  
Associate Vice President for Health Sciences, Charleston, L. Clark Hansbarger, M.D.  
Associate Vice President for Health Sciences, Eastern Div., C.H. Mitch Jacques, M.D., Ph.D.  
Dean, School of Dentistry, Louise T. Veselicky, D.D.S., M.D.S., M.Ed  
Dean, School of Medicine, John E. Prescott, M.D.  
Dean, School of Nursing, Georgia L. Narsavage, Ph.D.C.R.N.P., F.A.A.N  
Dean, School of Pharmacy, Patricia A. Chase, Ph.D.  
Vice President for Strategic Program Development, Gary Murdock  
Vice President for Alumni Affairs, Lynda Nine  
Vice President for Health Sciences Center Development, Julia Phalunas, Ed.D.  
President, West Virginia University Hospitals, Bruce McClymonds, B.A.  
President and CEO, Charleston Area Medical Center, David Ramsey  
President, West Virginia United Health System, J. Thomas Jones  
Assistant Vice President, Ann Chester, Ph.D.  
Assistant Vice President, Faculty Development, Rashida Khakoo, M.D.  
Director of Communications, John T. Coughlin  
Special Assistant to the Vice President, Norma L. Tennant  
Director, Facilities Management, Leonard H. Lewis  
Interim Director, Health Sciences Library, Susan Arnold  
Director, Information Systems Operations, Laura Roth  
Director, Academic Technologies, Amir Ramazen  
Special Assistant for Fire and Life Safety, Jeff Kerns

### Deans

College of Business and Economics, Stephen Sears  
College of Creative Arts, Bernard Schultz  
College of Engineering and Mineral Resources, Eugene V. Cilento  
College of Human Resources and Education, Anne Nardi  
College of Law, John W. Fisher III  
Davis College of Agriculture, Forestry, and Consumer Sciences, Cameron R. Hackney  
Dean of Students, David Stewart  
Eberly College of Arts and Sciences, Mary Ellen Mazey  
Extended Learning, Sue Day-Perroots  
Honors College, Keith Garbutt  
Perley Isaac Reed School of Journalism, Maryanne Reed  
School of Dentistry, Louise Veselicky (Interim)  
School of Medicine, John Prescott  
School of Nursing, Georgia Narsavage  
School of Pharmacy, Patricia A. Chase  
School of Physical Education, Dana D. Brooks  
University Libraries, Frances O'Brien

### Frequently Contacted Offices

#### Academic Programs

Provost and Vice President for Academic Affairs and Research  
West Virginia University  
P.O. Box 6203  
Morgantown, WV 26506-6203  
Phone: (304) 293-5701 Fax: (304) 293-7554  
<http://http://www.wvu.edu/~acadaff>

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#### Admissions and Records

West Virginia University  
P.O. Box 6009  
Morgantown, WV 26506-6009  
Phone: (304) 293-2121 or 1-800-344-WVU1  
Fax: (304) 293-3080  
<http://www.arc.wvu.edu>

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#### Graduate Programs

Office of Graduate Education  
West Virginia University  
P.O. Box 6203  
Morgantown, WV 26506-6203  
Phone: (304) 293-7173 Fax: (304) 293-7554  
<http://www.wvu.edu/~graduate>

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#### Housing and University Apartments

West Virginia University  
P.O. Box 6430  
Morgantown, WV 26506-6430  
Phone: (304) 293-4491 Fax: (304) 293-4825  
<http://admissions.wvu.edu/undergraduate/housing>

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#### Scholarships, Work-Study, and Veterans Educational Assistance

Student Financial Aid Office  
West Virginia University  
P.O. Box 6004  
Morgantown, WV 26506-6004  
Financial Aid Phone: (304) 293-5242 Fax: (304) 293-4890  
Scholarships Phone: (304) 293-4126 Fax: (304) 293-4544  
<http://www.wvu.edu/~finaid>

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#### Student Life

Dean, Student Life  
West Virginia University  
P.O. Box 6411  
Morgantown, WV 26506-6411  
Phone: (304) 293-5611 Fax: (304) 293-7028  
<http://www.wvu.edu/~studlife>

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# General Information

## Health Sciences at West Virginia University

West Virginia University's Schools of Dentistry, Medicine, Nursing, and Pharmacy at the Robert C. Byrd Health Sciences Center offer a comprehensive range of undergraduate, graduate, and professional degree programs in healthcare and biosciences.

The Center's 29 degree programs provide West Virginia with accomplished professionals trained to meet the state's diverse healthcare needs. More than 10,000 WVU Health Sciences Center alumni comprise the majority of the state's physicians, dentists, and pharmacists, and many of its nurses, medical and dental technologists, and physical therapists.

A unique combination of state and federal support, income from patient care, charitable contributions from individuals and foundations, and investments by private corporations has enabled West Virginia University to build a superb environment for health education, research, and patient care.

Health Sciences Center research encompasses interdisciplinary and mission-based centers and institutes. These research hubs are led by world-renowned researchers who also serve as faculty members and mentors.

The Health Sciences Center has defined six areas of research focus, each represented by an interdisciplinary research center: cancer; cardiovascular sciences; diabetes, obesity and metabolic disorders; immunopathology and microbial pathogenesis; respiratory biology and lung disease; and neuroscience.

West Virginia University Health Sciences includes campuses in Morgantown, Charleston, and the Eastern Panhandle. These locations offer students the opportunity to learn their profession in a setting that realistically reflects the conditions they will encounter after graduation. A recent \$150 million expansion effort has changed the face of the Morgantown Health Sciences Campus and created some of the country's most up-to-date facilities for education and research.

## The Mission of West Virginia University

Founded in 1867, West Virginia University is the land-grant, doctoral degree-granting research university in the state of West Virginia. As such, the institution occupies a unique position within the state.

West Virginia University's primary mission is to provide high-quality programs of instruction at the undergraduate, graduate, and professional levels; to stimulate and foster both basic and applied research and scholarship; to engage in and encourage other creative and artistic work; and to bring the resources of the University to all segments of society through continuing education, extension, and public service activities.

Opportunities to conduct pioneering research and scholarship help attract high quality faculty and students. Students and faculty work together to create exciting and productive paths for investigation and development. WVU nurtures these symbiotic interactions to build intellectual, social, and economic development for all of West Virginia.

WVU's special responsibility is to seek out, challenge, educate, and help create opportunities for those West Virginia citizens who can benefit from its programs, especially those who have demonstrated high achievement or who possess excellent potential.

West Virginia University recognizes that diversity enriches the institution and the society it serves. The University is committed to social justice and to practicing the principles of equality of opportunity and affirmative action.

## The Range of University Activity

Currently, WVU, including the regional campuses of Potomac State College of West Virginia University, West Virginia University at Parkersburg, and West Virginia University Institute of Technology, enrolls approximately 30,000 students. WVU has an annual combined budget of approximately \$749 million.

## Clinical Education Facilities

The West Virginia University Health Sciences Center includes a diverse group of health-care facilities, providing a training ground for patient care and research for students in the health professions. West Virginia University Hospitals, the Physician Office Center, the Mary Babb Randolph Cancer Center, Health South Rehabilitation Hospital, the Eye Institute, Health Works Rehab and Fitness, and the National Institute of Occupational Safety and Health (NIOSH) are modern facilities that advance medical research and accommodate the demands of contemporary medical, dental, nursing, and pharmacy care.

WVU Hospitals entered a new era in 1988 with the opening of a 376-bed tertiary teaching facility, Ruby Memorial, the primary teaching hospital for the Health Sciences Center. It is equipped and staffed to provide the most comprehensive and advanced care available in West Virginia, thus

making it a superb clinical education site for students. Ruby also houses the Jon Michael Moore Trauma Center and WVU Children's Hospital with their specialized care units.

The Physician Office Center, the Health Sciences Center's outpatient facility for education and patient care, accommodates the largest multi-specialty group practice in West Virginia, with 60 primary and specialty care areas. Dental facilities, the eye center, and the outpatient pharmacy are integral parts of the Physician Office Center.

Chestnut Ridge Hospital, a 70-bed psychiatric hospital, is also part of the WVU Hospitals. It is staffed clinically by faculty from the School of Medicine and is the focal point of education in the behavioral and psychiatric sciences.

Health South Regional Rehabilitation Hospital provides unique educational opportunities for students in neurological disease, trauma rehabilitation, and physical and occupational therapy. Many WVU students experience part of their clinical training at the Charleston Division of the Health Sciences Center, which is affiliated with Charleston Area Medical Center. In addition, WVU students train at off-campus sites where they learn the demands of rural health care firsthand.

The School of Dentistry dental student clinic accepts patients who have particular problems of teaching value. Faculty members closely supervise those students assigned to clinic patients. The students get invaluable experience and several thousand patients receive a much-needed service.

## **Health Sciences Library**

The WVU Health Sciences Library serves the Robert C. Byrd Health Sciences Center institutes, specialized care facilities, and programs, including the Schools of Dentistry, Medicine, Nursing, and Pharmacy; the Allied Health and graduate biomedical programs; WVU faculty, staff, and students; the West Virginia University Hospitals, and University Health Associates. The Health Sciences Library also supports the center's activities in the Eastern and Charleston Divisions and at the Oman Medical College.

As the West Virginia state resource library in the National Network of Libraries of Medicine, the Health Sciences Library also supports the biomedical information needs of health professionals throughout the state, offering advanced information retrieval services and access to a collection of over 200,000 volumes, extensive holdings of multimedia materials, approximately 350 current print journal subscriptions, and health-related government documents. The library offers electronic access to biomedical literature through the Internet and locally mounted databases. MEDLINE (PubMed) and other National Library of Medicine databases, Web of Science, Clinical Pharmacology, CINAHL (Nursing and Allied Health), International Pharmaceutical Abstracts (IPA), MD Consult, HAPI (Health and Psychosocial Instruments), Health Source: Nursing Academic Edition, Health Source: Consumer Edition, the Cochrane Library, RefWorks, UpToDate, and numerous other electronic resources are available. The Health Sciences Library now provides access to over 5,100 electronic journals related to health and biological sciences. University-wide, the e-journal collection numbers over 35,000 titles.

The library is open an average of 96 hours per week for most of the year. Additional library services are available through the WVU Libraries system, a network of general and specialized libraries within a two-mile radius of the Health Sciences Library, from the Health Sciences Library located at the Charleston Division, and through interlibrary loan and the E-Z Borrow service.

The Health Sciences Library maintains a Web presence at <http://www.hsc.wvu.edu/library> where library users can access many electronic resources, request online reference assistance (Ask A Librarian), document delivery (ILLiad), or other services, and keep up-to-date on new library materials and services.

## **Commitment to Social Justice**

WVU's role as the doctoral degree-granting, research, land-grant university in the state of West Virginia gives the institution a special responsibility as a leader in the area of social justice. The pursuit of truth underlying the University's mission focuses attention on issues of diversity, power, and perspective, so that students, faculty, and staff may study and work in a climate of academic freedom and social responsibility, developing the skills, knowledge, and self-esteem necessary for participation as world citizens.

Equal opportunity is a fundamental goal in a democratic society, and WVU shares the responsibility for achieving that equity. The institution is committed, therefore, to ensuring that all persons, including women, people of color, persons with disabilities, gays, lesbians, and bisexuals, veterans, and persons of different religions, sexual orientation, ages, and international, ethnic, and economic backgrounds benefit from the many opportunities the institution provides.

In keeping with this responsibility, the members of the academic community are expected to demonstrate civility and mutual respect for all persons; understanding and appreciation for all persons; to express that perspective in every dimension of the institution's life and mission; and to work cooperatively, representing not only the interests of their own groups but also those of the wider community.

The importance of WVU's social justice program goes beyond the benefits that accrue to any one person or group, to strengthening the University itself, and the enhancing of its ability to accomplish the mission with which it has been entrusted by the people and the state of West Virginia.

## Government and Organization of WVU

Effective July 1, 2001, the West Virginia Board of Governors was vested by law with the authority to control and manage of the University. The board includes 12 members, one faculty member, one staff member, and one student member. The University president, appointed by the Board of Governors, is the chief executive officer of the University.

The West Virginia Higher Education Policy Commission is responsible for policy development and other statewide issues. The commission consists of seven members appointed by the governor, the secretary of education and the arts, and the state superintendent of schools.

The Faculty Senate is the vehicle for faculty participation in the governance of the University. It is a legislative body with original jurisdiction over all matters of academic interest and educational policy that concern the entire University or affect more than one college or school. The senate's decisions are subject to review and approval by the president and the Board of Governors. Senators are elected by members of the University faculty to represent their colleges and other constituencies. Each senator represents 20 members of the University faculty. The senate is presided over by an elected chair.

Three faculty members serve on the Vice Presidents' Advisory Committee for Promotion and Tenure. The president meets regularly with the cabinet and monthly with the Faculty Senate Executive Committee, the Staff Council, and Student Administration. The University Faculty Assembly includes the president as presiding officer, professors, associate professors, assistant professors, instructors holding appointments on a full-time basis, and other persons engaged in full-time professional activities. The assembly meets once a year.

West Virginia University has a tradition of strong student administration that represents student opinion to the administration and faculty. Student administration has three main units: the executive branch, the board of governors, and the judicial board. Students also serve on University-wide committees and on the Mountainlair Advisory Council.

The Staff Council is an advisory council to the president of the University and a means for all classified employees to express their opinions about job conditions, fringe benefits, employee relations, or other areas that affect their jobs.

Local 814 of the Laborers' International Union of North America, AFL-CIO, represents employees throughout the University and its affiliates. These employees are in craft/maintenance, service, clerical, and technical job categories, with a wide variety of job classifications. Laborer's Local 814 is the only recognized union at the University by agreement through the Memorandum of Accord.

# Academic Information

## Health Sciences Degree Programs

Program	Bachelor's	Master's	Doctoral/ Professional
<b>School of Dentistry</b>			
Dental Hygiene.....	B.S.....	M.S.	
Dentistry.....			D.D.S.
Dental Specialties.....		M.S.	
<b>School of Medicine</b>			
Anatomy.....		M.S.	
Biochemistry and Molecular Biology.....		M.S.	Ph.D.
Cancer Cell Biology.....			Ph.D.
Cellular and Integrative Physiology.....			Ph.D.
Community Health Promotion.....		M.S.	
Exercise Physiology.....	B.S.....	M.S.	Ph.D.
Immunology and Microbial Pathogenesis.....		M.S.	Ph.D.
Medical Technology.....	B.S.		
Medicine.....		M.D.	
Neuroscience.....			Ph.D.
Occupational Therapy.....		M.O.T.	
Pathologist's Assistant.....		M.S.	
Pharmacology and Toxicology.....		M.S.	
Physical Therapy.....		D.P.T.	
Public Health.....			Ph.D.
Public Health Sciences.....		M.P.H.	

## School of Nursing

Nursing ..... B.S.N. .... M.S.N. .... Ph.D., D.N.P.

## School of Pharmacy

Pharmaceutical and Pharmacological Sciences ..... Ph.D.

Pharmaceutical Sciences ..... M.D.

Pharmacy ..... Pharm.D.

# Undergraduate and Professional Programs

## Admission

To apply for admission to the various schools of the Health Sciences Center, write to Admissions and Records, 1170 Health Sciences North, P.O. Box 9815, Morgantown, WV 26506-9815, and ask for the appropriate application forms.

Because we are primarily a group of professional schools and most of our applicants are enrolled in undergraduate studies at a residential college or university, we remind students to include their permanent home address with requests for application forms.

Specific entrance requirements for all Health Sciences programs are detailed in the section pertaining to each program. For information about freshman, transfer, and international admission to West Virginia University, please refer to the *WVU Undergraduate Catalog*.

During the first semester of the first year at the WVU Health Sciences Center, we require that students complete certain prescribed immunization and diagnostic procedures.

## Application Fees

Application fees for dental hygiene, medical technology, nursing, and occupational therapy are \$25 for residents of West Virginia, and \$40 for non-residents. Application fees for dentistry, medicine, doctor of physical therapy, and doctor of pharmacy are \$50.

When accepted into one of our programs, students are asked to pay a deposit to make their acceptance official. These deposits are applied toward the first semester's tuition. If a student pays a deposit but does not enroll, a written request for refund must be received. Deposit amounts and refund deadlines vary and are subject to change.

## Second or Multiple Bachelor's Degree

To earn a second baccalaureate degree, students must earn at least 30 credits beyond the requirements for the first degree. All requirements, departmental and otherwise, must be satisfied for the second degree. A second bachelor's degree cannot be earned if a student has not met the University's residence requirement. (See Residence Requirements.)

If a student wishes to earn two baccalaureate degrees at the same graduation date, then a student must satisfactorily complete a minimum of 158 credits and meet all requirements, departmental and otherwise, of both degree programs. Admission must be granted from both programs. Furthermore, students must provide the Office of Admissions and Records written proof of approval from both colleges or schools.

## Academic Forgiveness Policy

WVU allows an academic forgiveness to some students who are not successful in their first attempt at higher education.

To be eligible, a student cannot have been enrolled at a West Virginia state system of higher education institution for at least five calendar years and cannot have been enrolled in any other institution of higher learning during those five years. In order to determine eligibility, students must complete the Academic Forgiveness Form which is available at the Office of Admissions and Records.

The conditions and rules of the academic forgiveness policy are as follows:

- Admission to WVU under the Academic Forgiveness Policy is conditional upon satisfying the above stated non-enrollment period. In addition, a recommendation that the student be admitted under the academic forgiveness policy must be submitted by the dean of the college or school that the student plans to enter, and the recommendation must be approved by the Office of the Vice President for Academic Affairs.
- Upon admission to WVU under this policy, the student will be credited with the hours earned for courses completed with a grade of D or higher.
- Grades earned during any prior enrollment period will not be counted for purposes of calculating the student's grade point average, but grades earned will remain on the student's permanent record.
- The student must meet and complete all coursework required to meet the college or school's requirements for graduation, but under no circumstances after the student has been admitted under the Academic Forgiveness Policy shall the student complete fewer than 64 credit hours prior to earning a degree.

- A student admitted to WVU under this policy will follow all regulations regarding probation, suspension, and expulsion.

## **Academic Advising**

When entering West Virginia University, students are assigned an academic advisor. The advisor assists preparing a schedule, assigning classes as required by the student's degree program, and certifies the student's study list to the director of Admissions and Records. The advisor is also expected to give advice and sympathetic guidance. Students are expected to meet with their advisor to discuss academic problems.

Students interested in medical technology, nursing, pharmacy, physical therapy, or occupational therapy may be admitted to a pre-program in order to complete entrance requirements for admission to the degree program. Students in these pre-programs are advised through the Undergraduate Academic Services Center. Students must apply for admission with an undergraduate application.

## **Baccalaureate Degrees Student Responsibility**

Students are responsible for their own academic well-being. Specifically, students are responsible for knowing their scholastic standing as it relates to the published regulations and standards of WVU. This responsibility includes the regulations of the college or school and the regulations of the department or division in which the student is earning a degree. In order to graduate, students must go to the academic dean's office and complete an application for graduation and diploma. The application must be filed during the first month of the semester or summer session in which the student expects to graduate.

## **Regulations Affecting Degrees**

All degrees are conferred by the West Virginia University Board of Governors as recommended by the faculties of the various colleges and schools. A degree is granted at the end of the semester or summer session in which the requirements for that degree are completed, provided that the student have submitted an application for graduation and diploma at the academic dean's office.

Students become eligible to graduate when he or she completes the requirements of the University and college or school that were in effect at the time of first registration at that college or school. The student has seven years after your registration to complete the requirements. If not, the student will have to meet the requirements of a later catalog—one that is no more than seven years old when completed your studies. With the consent of the advisor and the dean, students may choose to meet the conditions published in a later catalog.

Students must observe any program changes that are enacted by the West Virginia University Board of Governors, the West Virginia Higher Education Policy Commission, or by local, state, or federal law.

WVU policy dictates that, in view of their professional responsibilities to the general public, the faculty of a professional school may recommend to the president of the University, in writing, that a student be removed from its rolls. The recommendation of the faculty must indicate that the student is not fit to meet the qualifications and responsibilities of the profession.

WVU will not confer a degree or issue a transcript to any student until payment of all tuition, fees, and other indebtedness to any unit of the University is made.

## **Credits Required**

Each degree program is based upon a combination of required courses and electives. Certain University requirements are listed below. In addition, the various colleges and schools determine their own credit requirements and course grade averages for graduation. Total credits vary from 128 to 145. Required grade point averages range from 2.0 to 2.5. The determination to count ROTC courses as free electives or toward fulfillment of General Education Curriculum (GEC) requirements is the prerogative of the dean of the college awarding the degree.

No more than three credit hours of ROTC may count toward fulfillment of the GEC requirement in each cluster area.

## **General Education Curriculum Description**

Effective with the beginning of the Fall Semester, 2005, for all matriculating students.

WVU is committed to providing students with a foundation of skills and knowledge necessary to reason clearly, communicate effectively, and contribute to society. The General Education Curriculum (GEC) is designed to ensure that students meet these goals through inquiry-based learning across the disciplines. In conjunction with a major field, and in consultation with their advisers, students will design programs of study that satisfy the GEC's objectives.

The GEC strives to help students become thoughtful participants in an increasingly interdependent world by giving them knowledge and skills they will need to meet changes and challenges

in their personal, social, and professional lives. With the exception of Objective 1 (Communication), all GEC courses may also satisfy major course requirements.

A current listing of courses that fulfill each of the nine GEC objectives is available at <http://www.arc.wvu.edu/courses/GEC.html>.

## General Education Curriculum Objectives

### 1. Communication

*Communicate effectively in English*

Requirements (3–6 credits)

- Successful completion of English 101, 102 or English 103
- Successful completion of a “W” course, preferably in the major. Consult the list of available ‘writing’ courses at [http://www.arc.wvu.edu/courses/writing\\_courses.html](http://www.arc.wvu.edu/courses/writing_courses.html) to determine a course to fulfill this objective.
- Successful completion of written and oral component of the Capstone Experience

### 2. Basic Mathematical Skills and Scientific Inquiry

*Use quantitative and scientific knowledge effectively*

Requirements (13–15 credits)

- GROUP A: Successful completion of one course in mathematics or statistics. (3–4 credits)
- GROUP B: Successful completion of two courses in the natural or physical sciences of which at least one course requires a lab. (7–8 credits)
- Successful completion of one additional course from Group A, Group B, or Group C that satisfies the objective. (3 credits)

### 3. The Past and Its Traditions

*Apply knowledge, methods, and principles of inquiry to understanding the past*

Requirements (3 credits)

- Successful completion of one course focused upon the historical, cultural, or intellectual development of society.

### 4. Issues of Contemporary Society

*Apply knowledge, methods, and principles of inquiry to contemporary problems, ideas, and/or values*

Requirements (3–4 credits)

- Successful completion of one course focused upon contemporary issues, ideas, and/or values as seen from a humanistic or scientific perspective.

### 5. Artistic Expression

*Apply methods and principles of critical inquiry to the analysis of literary or artistic expression*

Requirements (3 credits)

- Successful completion of one course in art, dance, literature, music, or theatre.

### 6. The Individual in Society

*Develop an awareness of human experience, including both personal and social dimensions*

Requirements (4 credits)

- University 101 or equivalent course (1 credit) \*\*
- Successful completion of one additional course addressing personality, cognition, behavior, social interaction, critical reasoning, ethical judgment, psychological and physiological growth, and/or health and well-being. (3 credits)
- Students transferring to WVU with 29 hours for whom “UNIV 101 or equivalent course” requirement has been waived may fulfill GEC 6 with 3 credits

### 7. American Culture

*Develop knowledge critical to understand the issues that shape the culture of the United States*

Requirements (3 credits)

- Successful completion of one course that explores issues that have shaped the development of society in the United States.

### 8. Western Culture

*Analyze historical, cultural, and/or political issues of a Western nation in an international context*

Requirements (3 credits)

- Successful completion of one course that explores issues pertaining to a western nation in an international context.

### 9. Non-western Culture (3 credits)

*Analyze historical, cultural, and/or political issues of a non-Western area or nation*

Requirements (3 credits)

- Successful completion of one course that explores issues pertaining to a non-western nation in an international context.

## **GEC Policies**

Curriculum requires 41–43 credits.

1. Only nine credits spread over Objectives 2–9 may be taken in the major field and still count toward fulfillment of the GEC.
2. Only two courses in a single discipline outside the major may fulfill the GEC.
3. A single course may fulfill only one objective.  
A current listing of courses that fulfill each of the nine GEC objectives is available at <http://www.arc.wvu.edu/courses/GEC.html>.

The full text of the WVU Faculty Senate General Education Curriculum document can be found at: [http://www.wvu.edu/~facultys/GEC\\_Approved\\_March8,04.pdf](http://www.wvu.edu/~facultys/GEC_Approved_March8,04.pdf).

## **Residence Requirements**

If transferring to WVU from another institution of higher learning, the transfer should occur no later than the start of the student's third year. Under no circumstances will a student who enters WVU after October 1 in any year be allowed to receive a degree at the next commencement.

In some special cases, students can leave WVU at the end of their third year, and still receive a degree from WVU. The student must enter another accredited institution with the purpose of taking a combined program that will lead to two degrees or prepare for graduate study. Before leaving, the student must apply to the college's Academic Standards Committee to request permission to do the work of the fourth year, or a part thereof, at the other institution but still receive the degree from WVU. The student will receive a degree when the proper records from the other school are presented.

A transfer student who has completed all undergraduate work in another school in the West Virginia system of higher education must complete either the last 30 hours of work at WVU or at least 36 hours of work at WVU, of which 16 of the last 32 hours must be on campus. Transfer students whose undergraduate work has been completed outside of the West Virginia system of higher education must complete a total of 90 hours or at least the last 30 hours of work in residence at WVU. Students may be required to earn up to 15 hours in a major field regardless of the number of hours or the nature of the courses transferred.

## **Work Done Out of Residence**

WVU's policy is to discourage taking regular residence courses in absentia. If a student begins a course at WVU but fails permission may be granted to complete it due to illness or some other acceptable reason. Permission may be granted to complete the work in absentia. Permission must be granted by the Academic Standards Committee of the college or school concerned, and the work must be done under the guidance of a WVU professor. Credit in such cases is allowed only upon a report of a grade of C or better on the final examination. This regulation does not apply to WVU off-campus courses.

If a student receives a final grade of F in a course taken at WVU, the course must be repeated at WVU to receive credit for that course. The dean of the college or school in which the student is enrolled may authorize an exception to this regulation. If so, then the dean should provide a letter to be placed in the student's folder authorizing the exception and explaining its basis.

Students should be aware of the requirements for residence and specific degree requirements described in the catalog when transferring credit from other institutions. If transferring credit from institutions outside the West Virginia state system of higher education, WVU will accept credit only for courses in which a grade of D or higher was earned, provided other conditions above have been met. Under no circumstances will grades be transferred from institutions outside the state system.

## **WVU Transient Students**

If a student decides to take a course or courses at another school, written approval must be given from the student's advisor, dean, and the director of Admissions and Records or designee. To receive such approval, the student must have an overall 2.0 average. All approved college-level work is accepted for transfer from accredited institutions, provided the above requirements have been met and the student has an overall GPA of 2.0.

## **Advanced Placement Program (AP)**

West Virginia University encourages students to work to their full capacity and to earn a degree at their own learning speed. As a high school junior or senior, students can take college-level courses at the high school in conjunction with the College Entrance Examination Board (CEEB). The Advanced Placement Service administers three-hour examinations to show competency equal to that received by taking the actual college course. The table on page 16 shows the subject areas, the necessary test scores, and the WVU equivalent courses.

## College Level Examination Program (CLEP)

If a student applies for admission to WVU and has gained a significant level of maturity through life experiences, college credit may be gained for these educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. A policy of the WVU Board of Governors allows University credit to be awarded for successful completion of CLEP subject examinations, except English composition. Up to 34 hours of general education credit may be earned for successful performance on the CLEP general examinations. Although this program was designed primarily for adults, exceptionally well-qualified high school seniors may use the CLEP program. The table on page 17 indicates the areas in which WVU grants credit based on the minimum score required. It should be noted that no student is eligible for CLEP credits after he or she has enrolled at WVU.

A veteran may receive advanced placement for specific military experience and should contact the transfer unit of Admissions and Records for specific information.

## Credit by Examination

If currently enrolled, students may receive credit for a course or courses if competency in the course content can be demonstrated. The department offering the course determines evaluation standards for the student's competency. If skill and cognitive abilities are components of the course, then both are evaluated. Credit is given only when a satisfactory degree of competency is shown.

A college, school, or department may ask the student to prepare a self-evaluation statement. The purpose of the statement is to determine the competency the student believes he or she has, and the methods by which it was achieved. For more information, contact the dean in the college or school offering the course.

## Credit for Correspondence Work

Students may receive credit for correspondence work in non-laboratory courses. Certain conditions that govern this credit must be met:

- A maximum of 30 hours is acceptable.
- The work must be from accredited institutions.
- The institution must accept the credit toward its own degrees.
- WVU must ordinarily accept that institution's residence work.

## 500-Level Courses

**Extended Learning/Off-campus** If an advanced student wishes to take an off-campus course numbered 500–599, an undergraduate application for admission must be submitted. Official transcripts must be sent to the Office of Admissions and Records from all of the colleges and universities previously attended; the transcript cannot be one sent to the student or a facsimile (fax) transcript. The student must be classified as either a junior or senior and have a cumulative grade point average of at least 3.0 on a 4.0 scale. The special form granting permission to take a 500-level course may be obtained from their advisor.

**On-campus** An undergraduate junior or senior in any class carrying a 500-level course number, must have at least a 3.0 cumulative grade point average and have written approval on a special form from the instructor and advisor.

## Graduate Credit via Senior Petition

Graduate study may be started early through the University's senior petition policy. A senior petition form may be obtained from the Office of Admissions and Records. It must be signed by the student's advisor, the dean of the college granting the degree, and the dean of the college of the intended graduate degree (if different). An individual from another West Virginia state higher education system school desiring to take a course at WVU must have the form signed by his or her advisor and the registrar. These signatures are necessary to certify the information contained on the form is correct and the student has a cumulative 3.0 grade point average. The University has certain policies concerning enrollment in a graduate course for graduate credit. The policies are:

- Senior petition applies only to courses numbered 400–599. A student must be within 12 hours of receiving a bachelor's degree, and his or her grade point average must be at least 3.0 on a 4.0 scale.
- Only 12 graduate hours may be earned through the senior petition.
- The proper signatures must be on the senior petition by the time the student enrolls in the petitioned courses.

Return the approved senior petition to the Office of Admissions and Records. It is kept on file so that graduate credit for these courses will be recorded on the student's permanent record. The dean of the college or school in which the student is taking graduate courses must approve any exceptions to the policy. *Note: If a student receives graduate credit for a course, the credit for that course does not count toward an undergraduate degree.*

## Visitors

Full-time University students may attend classes as visitors. To visit a class, permission must be granted in writing from the student's advisor and the instructor of the course. A member of the administration, teaching staff, or other regular University employees may attend classes as visitors. These individuals must have written permission from their department and the instructor of the class. A visitor does not receive credit for a class. You may not apply for credit by exam in a class in which you were a visitor.

## Auditors

An auditor may register for courses and pay full fees. Credit will not be given for the course. After auditing a course, one semester must pass before enrolling in the course for credit. A student may change the status from audit to grade or grade to audit only during the registration period. Attendance requirements for auditors are determined by the instructor of the course. The instructor may direct the Office of Admissions and Records to remove an auditor from a class list or grade report if attendance requirements are not met.

## Summer Sessions

Summer 2006 will be one term with two sessions, A and B, instead of the Summer I and Summer II. It will serve as a transition year to Summer 2007 which will be one summer term with flexible course lengths.

In Summer 2006, Session A begins May 22 and continues through June 30. Courses during the session may begin at any time and vary in length from one to 12 weeks. Session B starts on July 3 and runs through August 11, and courses in Session B will begin on or after July 3.

The transition to a one-term summer session will be complete by Summer 2007, allowing for 1- to 12-week courses across the entire session.

You may earn credit toward a baccalaureate, master's, doctoral, or professional degree in the summer sessions. Summer offerings vary from year to year. For complete information concerning course offerings during the summer sessions, consult the *Summer Session Schedule of Courses*.

## Evening Classes

The University offers evening courses taught by regular faculty. These courses carry full college credit and are offered at both the undergraduate and graduate levels.

## Classification of Students

WVU undergraduates are classified as freshmen, sophomores, juniors, or seniors. These classifications are based upon the number of hours completed. The classifications are as follows:

Freshman classification	1–28 hours, inclusive
Sophomore classification	29–58 hours, inclusive
Junior classification	59–88 hours, inclusive
Senior classification	89 or more semester hours

## Grade Point Average

All academic units of the University require minimum standards of scholastic quality. A grade point average is computed on grades earned in courses taken at WVU and institutions in the West Virginia system of higher education only. To be eligible to receive a baccalaureate students must have a grade point average of at least 2.0 at the time of graduation. Some degree programs require a higher grade point average overall or in the major courses. The grade point average is based on all work for which letter grades other than W, WU, and P were received. See "D/F Repeat Policy," page 15.

Students must make certain that they know their grade point standing. Necessary information concerning grade point standing can be obtained from the dean of the college or school. To determine your grade point average, use the method described in the section on grade points.

## Graduation with Honors

WVU recognizes distinguished academic achievement by awarding degrees cum laude, magna cum laude, and summa cum laude. This distinction can be awarded on initial or second baccalaureates and specified entry-level professional degrees. All candidates for a baccalaureate with a grade point average of 3.8 or higher graduate summa cum laude. Those with a grade point average of less than 3.8, but equal to or above 3.6, graduate magna cum laude. Those with a grade point average of less than 3.6, but equal to or above 3.4, graduate cum laude.

The grade point average for honors consideration for a baccalaureate is based on baccalaureate-level college work attempted through the next to the last semester or through the last semester, whichever GPA is higher. This calculation includes transferable baccalaureate-level college work attempted at all regionally accredited higher education institutions the student has attended. Credit

hours earned with a grade of P or S are not considered in the determination. The grade point average for honors consideration for entry-level professional degrees is based on baccalaureate-level and professional-level work attempted through the next to the last semester or through the last semester, whichever GPA is higher. This calculation includes transferable baccalaureate-level and professional-level college work attempted at all regionally accredited higher education institutions attended. Credit hours earned with a grade of P or S are not considered in the determination. Additionally, the GPA on WVU work must meet the requirements stated for the level of honors to be designated. If the GPA on WVU work indicates a lower level of honors, then the WVU GPA shall govern the specific designation.

Students entering and completing a second baccalaureate program following completion of the initial degree at the University are eligible to receive the honors designation. Grade point averages for graduation with honors on second baccalaureates shall be computed on the last 80 semester hours of baccalaureate-level work excluding credit earned with a P or S. At least 30 semester hours must have been completed in the second degree program through the penultimate semester.

A request for an exception to this policy may be made to the dean. After review, the dean will forward all requests for exceptions of this policy to the provost for the final decision.

## Academic Progress

### Courses

Most courses taught at WVU extend for one semester, although some extend for two semesters. Credit is not awarded for a course if a student does not attend the whole course. The only exception to this rule occurs if the Committee on Academic Standards decides to grant an exception. Grades reported at the end of the first semester in a two-semester course are merely an indication of the quality of the student's work to that point. Credit is not given for that part of the course completed. Courses taught in the summer sessions carry the same credit value as fall and spring semester courses.

### Evaluation of Student Progress

Student progress is evaluated by a variety of methods. The measurement and evaluation of learning are consistent with the objectives of the course and provide the opportunity for the student and instructor to evaluate progress. The University discourages evaluation by final examination only. The student is responsible for all materials presented or assigned in scheduled instructional sections. If all assigned work is not completed, an incomplete (I) or a failing grade (F) may be given.

The last week of each semester of the academic year is designated as finals week. Final examinations for the summer sessions are given on the last day of classes. *The Schedule of Courses* gives the dates and times for final examinations.

Practical laboratory tests, make-up examinations, and regularly scheduled short quizzes are the only tests permitted for day classes during the week of classes preceding finals week. Evening classes have their final exams on the last meeting of the class preceding finals week.

If taking a section of a multi-section course, students may be required to take the departmental final examination, given during the regular final examination period.

### Grading System

- A excellent (given only to students of superior ability and attainment)
- B good (given only to students who are well above average, but not in the highest group)
- C fair (average for undergraduate students)
- D poor but passing (cannot be counted for graduate credit)
- F failure
- I incomplete
- W withdrawal from a course before the date specified in the University calendar
- WU withdrawal from the University doing unsatisfactory work
- P pass (see "Pass-Fail Grading")
- X auditor, no grade and no credit
- CR credit but no grade
- PR progress final grade at end of the second semester (HSC)
- S satisfactory
- U unsatisfactory (equivalent to F)
- H honors course (medical school courses only)
- INC permanent incomplete
- IF incomplete grade not removed by next regular term (computed as an F)
- UF unforfeitable F (not eligible for D/F repeat policy)

## Pass-Fail Grading

Pass-fail grading encourages students to take elective courses not related to their degree concentration. Pass-fail grading also facilitates grading in competency-based courses which may be an integral part of your program.

**Student Option** Any full-time student who has completed 15 hours or more and who has maintained a 2.0 grade point average may take a maximum of four hours each semester or summer session on a pass-fail basis. Any course taken on a pass-fail basis must be a free elective. Students are limited to a total of 18 hours of pass-fail credit in their collegiate careers. Unless otherwise indicated, courses in the major, courses in other subjects that are required by the major, and courses taken to satisfy University, college, school, or departmental requirements are excluded from pass-fail. For example, courses elected to satisfy the English, General Education Curriculum (GEC), or foreign language requirements may not be taken for pass-fail grading.

Courses taken on a pass-fail basis are given a regular letter grade. Then the instructor turns in the appropriate letter grade to the Office of Admissions and Records. This letter grade is then converted to a P on the basis of A, B, C, or D for a pass and F for a fail. The grade of P does not affect a student's grade point average. However, any F grade affects the grade point average whether it is a regular grade or a pass-fail grade.

The optional choice of pass-fail grading for a course is made during the registration period. Once the registration period has ended, you may not change the grade status in the course.

**College or School Option** A department or unit may designate any performance- or competency-based course as exclusively pass-fail. To institute this, the college or school must have the approval of the Faculty Senate. Courses offered only as pass-fail are not included in the maximum of 18 hours that may be freely elected under the student option.

## Grade Points

Each letter grade has a numeric value. Grade points are based on this number value and the credit-hour value of the course.

A	B	C	D	F	I	U
4	3	2	1	0	0	0

The grade point average is computed on all work for which the student is registered, with the following exceptions:

- Courses with a grade of W, WU, P, S, and X carry no grade value. The grade of incomplete (I) initially carries no grade value.
- The grade of I is given when the instructor of the course believes that the work is unavoidably incomplete or that an additional examination is justified. To remove the grade of I, do not register for the course again; instead, the student must arrange to submit incomplete or supplemental work to the original instructor of the course. When the grade of I is later removed, the grade point average is calculated on the basis of the new grade. If the I grade is not removed within the next semester enrolled, the grade of I is treated as an F (failure). The Academic Standards Committee of the appropriate college or school may allow the student to postpone removal of the I grade if a delay can be justified.
- Teacher certification students are responsible for every registration in a course in which the grade of A, B, C, D, F, WU, P, X, or I is received.

## GPA Calculations

Students like to know how to calculate their overall and semester grade point averages. The following example shows how to do it. Assume a student is registered for 16 hours and received the following grades in these courses:

English 101	B	Mathematics 126	A
Geology 101	C	Political Science 101	B
Spanish 101	D	Orientation 101	P

Course	Credits	Grade	Value	Credits x Value	Grade Points Earned
English 101	3	B	3	3 x 3	= 9
Geology 101	3	C	2	3 x 2	= 6
Spanish 101	3	D	1	3 x 1	= 3
Mathematics 126	3	A	4	3 x 4	= 12
Political Sci. 101	3	B	3	3 x 3	= 9
Orientation 101	1	P	0	1 x 0	= 0

## Advanced Placement Program (AP)

Examination	Minimum Score	Credit Hours	Course Equivalent
ART (Studio)			
Drawing Portfolio.....	To be determined by Division of Art		
General Portfolio .....	To be determined by Division of Art		
ART HISTORY .....	3	3	ART 101
BIOLOGY.....	3	8	BIOL 101, 102, 103, 104
	4	4	BIOL 115
CHEMISTRY .....	3	8	CHEM 115–116
CLASSICS			
Latin: Virgil.....	3	3	CLAS 293 A
Latin: Catullus-Horace .....	3	3	CLAS 293 B
COMPUTER SCIENCE			
Computer Science A .....	3	3	non-specific C S
Computer Science AB .....	3	6	non-specific C S
(6 units maximum for both tests)			
ECONOMICS			
Microeconomics.....	3	3	ECON 201
Macroeconomics.....	3	3	ECON 202
ENGLISH			
Engl. Lit. and Comp. ....	3	3	ENGL 131
Engl. Lit. and Comp. ....	4	6	ENGL 131–132
Engl. Lang. and Comp. ....	3	3	ENGL 101
Engl. Lang. and Comp. ....	4	6	ENGL 101–102
(9 units maximum for both tests)			
ENVIRONMENTAL SCIENCE	3	4	GEOL 110 & 111/GEOG 110 & 111
FOREIGN LANGUAGE			
French Language .....	3	6	FRCH 301–302
French Literature .....	3	6	FRCH 293 & 493
German Language.....	3	6	GER 301–302
Spanish Language .....	3	6	SPAN 301–302
Spanish Literature .....	3	6	SPAN 293 & 493
GEOGRAPHY			
Geography.....	3	3	GEOG 102
GOVERNMENT AND POLITICS			
American .....	3	3	POLS 102
Comparative.....	3	3	POLS 101
HISTORY			
American .....	3	6	HIST 152–153
European .....	3	6	HIST 101–102
World .....	3	6	HIST 179–180
MATHEMATICS			
Calculus AB.....	3	4	MATH 129
Calculus AB.....	4	4	MATH 155
Calculus BC .....	3	4	MATH 155
Calculus BC .....	4	8	MATH 155–156
MUSIC			
Theory .....	3	3	To be determined by Division of Music
PHYSICS			
Physics B .....	3	4	PHYS 101*
Physics B .....	4	8	PHYS 101–102*
Physics C Mechanics.....	3	4	PHYS 111*
Phys. C Elec./Magnet.....	3	4	PHYS 112*
PSYCHOLOGY			
Introductory Psych. ....	3	3	PSYC 101
STATISTICS .....	3	3	STAT 211

## College Level Examination Program (CLEP)

General Examinations	WVU Equivalent	Minimum Score Required
English Composition (with essay)	ENGL 101 (3 hr.)	590
English Composition (multiple choice)	No credit	
Humanities	LSP A non-specified credit (6 hr.)	500
Mathematics	LSP C non-specified credit (4 hr.)	500
Natural Science	LSP C non-specified credit (6 hr.)	500
Social Science and History	LSP B (6 hr.)	500
<b>Subject Tests</b>		
American Literature	ENGL 241 (3 hr.)	59
Analysis & Interpret. of Literature	ENGL 131 (3 hr.)	59
College Composition	No credit	
English Literature	ENGL 262 (3 hr.)	60
Freshman English	No credit	
College French (levels 1 and 2)	FRCH 101 and 102 (6 hr.)	44
	FRCH 203 and 204 (6 hr.)	55
College German (levels 1 and 2)	GER 101 and 102 (6 hr.)	43
	GER 203 and 204 (6 hr.)	54
College Spanish (levels 1 and 2)	SPAN 101 and 102 (6 hr.)	45
	SPAN 203 and 204 (6 hr.)	54
American Government	POLS 102 (3 hr.)	50
American History I	HIST 152 (3 hr.)	49
American History II	HIST 153 (3 hr.)	49
Western Civilization I	HIST 101 (3 hr.)	50
Western Civilization II	HIST 102 (3 hr.)	50
General Psychology	PSYC 101 (3 hr.)	50
Human Growth and Development	CD&FS 110 (3 hr.)	51
Intro. Macroeconomics	ECON 202 (3 hr.)	50
Intro. Microeconomics	ECON 201 (3 hr.)	50
Intro. Sociology	SOCA 101 (3 hr.)	50
College Algebra	MATH 126 (3 hr.)	48
Trigonometry	MATH 128 (3 hr.)	54
College Algebra/Trig.	MATH 129 (4 hr.)	50
Calculus with Elementary Functions	MATH 155 (4 hr.)	49
General Biology	BIOL 101 and 102 (6 hr.) (no credit for the labs)	49
General Chemistry	CHEM 116 (4 hr.)	70
Computers and Data Processing	To be determined by the dept.	49
Intro. to Management	BCOR 370 (3 hr.)	50
Intro. Accounting	ACCT 201 and 202 (6 hr.)	54
Intro. Business Law	BCOR 320 (3 hr.)	51

1. Multiply the credit by the grade value to get the grade points earned for each course.
2. Add the total grade points, in this case, 39.
3. Divide the total grade points earned by the total credit hours with a grade value.  
Remember that P grades have no grade value, so in this case, there are 15 credit hours for the GPA calculation: 39 divided by 15 = grade point average of 2.6.

### **D/F Repeat Policy**

WVU has a D/F repeat policy for undergraduate students who have not received their initial baccalaureate. If a D or F is earned in a course at WVU taken no later than the semester or summer session registration when the student reaches a cumulative total of 60 hours attempted, the student is eligible to "D/F repeat" that course by meeting with his or her academic advisor during registration in the semester in which he or she is repeating the course and by filling out the appropriate forms. The course must be repeated at WVU, Potomac State College of WVU, WVU at Parkersburg, or WVU Institute of Technology. The student will have only one opportunity to improve the original grade. The new grade becomes the grade that counts, even if the performance is worse than when originally graded.

When a student has D/F repeated a course, the following happens:

1. The original grade is disregarded for the purpose of determining the grade point average, hours passed, and hours attempted.
2. The original grade is not deleted from the permanent record.
3. The second grade is entered on the transcript and marked as included (I) in the semester that the student repeated the course.
4. The student can exercise his or her right under the D/F repeat policy at any time before receiving an initial baccalaureate. If a grade of F is received in a course for academic dishonesty, the grade is not eligible for change under the D/F repeat provisions. Such a failure is indicated on the permanent record by an UF and is calculated in the grade point average.

### **Grade Reports**

During the seventh week of classes in the fall and spring semesters, instructors submit a report of all undergraduate students earning grades of D or F in undergraduate courses. These grades are used for counseling and are not recorded on the student's official transcript. These reports are sent first to the Office of Admissions and Records and then to the student, the student's advisor, and the dean of the college or school in which the student is enrolled.

Final grades are reported within 48 hours after the end of the final examination. The instructor submits the grade reports to the Office of Admissions and Records. The final grades of all seniors provisionally approved for graduation at the close of each semester or summer session are reported to the deans of their colleges or schools. Special report forms for this purpose are supplied by the student's dean.

At the end of each semester or at the close of each summer session, a report of each student's work is prepared for that period and sent to the student.

### **West Virginia University Policy on the Family Educational Rights and Privacy Act**

The Family Educational Rights and Privacy Act of 1974 is a federal law which states: (a) that a written institutional policy must be established; and (b) that a statement of adopted procedures covering the privacy rights of students be made available. The law provides that the institution will maintain the confidentiality of student education records.

West Virginia University accords all the rights under the law to students who are declared independent. No one outside WVU shall have access to nor will WVU disclose any information from students' educational records, without the written consent of students except to personnel within WVU and the West Virginia Higher Education Policy Commission; to persons or organizations providing students' financial aid; to accrediting agencies carrying out their accreditation function; to persons in compliance with judicial order; to organizations conducting studies for, or on behalf of, education agencies of institutions for the purpose of developing, validating, or administering predictive testing student aid programs, and improving instruction; and to persons in an emergency in order to protect the health or safety of students and or other persons. All these exceptions are permitted under the act.

The act also permits disclosure of information from students' educational records, without the written consent of students, to parents of a dependent student of such parents, as defined in Section 152 of the Internal Revenue Code of 1954, as amended. West Virginia University intends to consider all students as "dependent" for purposes of disclosure of information to parents unless the students specifically notify in writing the WVU Office of Admissions and Records that they are not a "dependent" of their parents for federal income tax purposes. Students need to give such written notification only once.

The West Virginia University Policy on the Family Educational Rights and Privacy Act explains in detail the procedures to be used for compliance with the provisions of the act. Copies of the policy can be found in the offices of all deans and directors. The policy also is printed in the *Student Handbook* and annually in the *Daily Athenaeum*. The offices of the deans and directors can inform students as to the locations of all education records maintained on students by West Virginia University.

## Official Transcripts

Each copy of an official transcript costs six dollars, payable by check or money order. An on-the-spot transcript may be requested, in person, at a cost of ten dollars. Priority transcripts are not available at all times. Because of demand, it may take two or three weeks to process an application for a regular transcript at the close of a semester or summer session. At other times, it is the policy of WVU to process all regular transcript requests within 48 hours of receipt of the request.

If money is owed or other financial obligations are due to any unit of the University, students forfeit their right to claim a transcript of their record or diploma until these financial obligations have been met.

When applying for a transcript, the student's last date of attendance and student number must be furnished. Be sure to indicate the full name under which the student was enrolled. Requests for transcripts must be made in writing to the Office of Admissions and Records. We cannot accept telephone requests because of the risk of the security of your record.

## Final Grade Appeals

Students have the right to appeal final course grades which they believe reflect a capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race, sex, age, handicap, veteran status, religion or creed, sexual orientation, color, or national origin. The grade appealed shall remain in effect until the appeal procedure is completed or the problem resolved. The primary intent of this procedure is to provide a mechanism whereby a student might appeal a failing grade or a grade low enough to cause the student to be eliminated from some program or to require the repetition of a course. Grade appeals that do not meet this classification are not precluded.

**Step 1.** The student shall discuss the complaint with the instructor involved prior to the mid-semester of the succeeding regular semester, whether the student is enrolled or not. If the two parties are unable to resolve the matter satisfactorily, or if the instructor is not available, or if the nature of the complaint makes discussion with the instructor inappropriate, the student shall notify the chairperson of the instructor's department or division (or, if none, the dean). The chairperson or dean shall assume the role of an informal facilitator and assist in their resolution attempts. If the problem is not resolved within 15 calendar days from when the complaint is first lodged, the student may proceed directly to step 2.

**Step 2.** The student must prepare and sign a document which states the facts constituting the basis for the appeal within 30 calendar days from when the original complaint was lodged. Copies of this document shall be given to the instructor and to the instructor's chairperson (or, if none, to the dean). If, within 15 calendar days of receipt of the student's signed document, the chairperson does not resolve the problem to the satisfaction of the student, the student will forward the complaint to the instructor's dean (see step 3).

**Step 3.** Within 15 calendar days of receipt of the complaint, the instructor's dean shall make a determination regarding the grade, making any recommendation for a grade change to the instructor involved. If the instructor involved does not act on the dean's recommendation, or if the student is in disagreement with the decision of the dean, the dean will refer the case to a representative committee, appointed by the dean, for final resolution. This committee shall consist of three or more faculty members, including at least one person outside the instructor's discipline.

1. Upon receiving an appeal, the committee will notify in writing the faculty member involved of the grade challenge, which shall include a statement of the facts and evidence to be presented by the student.
2. The committee shall provide to the faculty member involved and the student making the appeal written notification of their right to appear at a hearing to be held before the department, college, or school representative committee, together with the notice of the date, time, and place of the hearing.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. The final decision of this committee shall be forwarded to the instructor and to the dean involved. If the decision requires a change of grade, the instructor shall take action in accordance with the committee's decision.
5. If the instructor does not act within five days, the dean shall make any necessary grade adjustment.
6. In the case of grade appeals, the dean functions as the president's designee; therefore, implementation of this decision shall end the appeal procedure.

## Absences

**Importance of Class Attendance** At WVU, class attendance contributes significantly to academic success. Students who attend classes regularly tend to earn higher grades and have higher passing rates in courses. Excessive absences may jeopardize students' grades or even their ability to continue their courses.

**Attendance Policies** Instructors must set attendance policies that are appropriate for the goals and instructional strategies of their courses. Instructors may include attendance records in determining the final course grade. All attendance policies that affect students' grades must be announced in writing within the first week of class. Moreover, instructors are responsible for keeping accurate enrollment records, and for keeping accurate attendance records when attendance is used in grading. Attendance policies thought to violate the statement on student attendance should be discussed with the instructor, then with the department chair, and finally the college dean, if necessary.

**Class Absences** Students who are absent from class for any reason are responsible for all missed work and for contacting their instructors promptly, unless the instructors' policies require otherwise. However, instructors cannot require documentation of student illness from any medical provider as part of an attendance policy, since medical conditions are confidential and frequently not verifiable.

**Make-Up Examinations** Students absent from regularly scheduled examinations because of authorized University activities will have the opportunity to take them at an alternate time. Such make-up examinations should be of comparable difficulty to the original examination.

Students in courses with regularly scheduled evening examinations shall have the opportunity to make up these examinations if they miss them in order to attend a regularly scheduled class that meets at the same time. Such make-up examinations should be of comparable difficulty to the original examination.

Attendance at a regularly scheduled evening examination will not excuse a student from a regularly scheduled class that meets at the same time as the examination.

**Days of Special Concern** Instructors are urged not to schedule examinations or field trips on "days of special concern" that are identified in the *Schedule of Courses*.

## Withdrawal/Drop From Individual Classes

**Deadlines** Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer session, or Friday of the second week of a three-week summer session), students may withdraw from individual courses. Deadlines are published in the *Schedule of Courses* each semester. If all established University procedures are followed and the student withdraws before the published deadline, a W will be recorded on the transcript. Grade point averages are not affected in any way by this mark.

### Procedures

Before withdrawing from individual classes, a student should consult with his or her advisor to determine if:

- The course load would be reduced below minimal requirements set by the college or school. If so, permission must be granted from the school's Committee on Academic Standards.
- The course load would be reduced below the minimal number of hours required to qualify for financial aid, varsity athletic competition, international full-time student status, or it would affect the student's health insurance coverage.
- The courses to be dropped are required to fulfill academic probationary conditions.
- The courses from which the student wants to withdraw might be corequisite with other courses currently enrolled in, or prerequisite to other courses required for the next term.

## Withdrawal From All Classes for the Term

**Deadlines** Students may withdraw from the University for the term enrolled in anytime before the last day of classes of the term on which regular classes are scheduled to meet. The student will receive grades of W in all classes for that term.

### Procedures

1. Students who decide to leave WVU during the term enrolled should withdraw from all classes through Admissions and Records in accordance with established University Policy. Students are responsible for all financial obligations and for following established procedures. This includes the completion of forms in person at the Office of Admissions and Records. The withdrawal process is explained at this time. Students not fulfilling their financial obligations may have difficulty withdrawing from the University.
2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons still must send notification of their request to withdraw to the Office of Admissions and Records. The student's Mountaineer card should be enclosed with this written notification.

3. With the help of their academic advisors, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.
4. If withdrawing from the term before certain dates and are receiving federal financial aid, students may have to repay all or a portion of the federal funds received. Withdrawing from classes can affect academic progress and future financial aid opportunities. The student should check with the Financial Aid Office for more information.

### **Academic Leave of Absence**

WVU offers undergraduate students in good standing, as defined by WVU's uniform suspension policy and not subject to disciplinary action, the opportunity to request an academic leave of absence. The academic leave of absence is designed for the student who wishes to be away from his or her academic endeavors at WVU for one or more semesters, but intends to return at a later date. Leave of absence status must be requested before the beginning of the semester for which the leave is desired. The academic records of students on an academic leave of absence remain in an active status. While on an academic leave of absence, the student retains the right to use certain campus facilities such as the Study Skills Center, Writing Lab, Math Lab, Student Counseling Service, and Career Services. When a student decides to return to WVU after his or her academic leave of absence, application fees are waived. If a student attends any institution of higher education while on leave of absence, an overall average of 2.0 must be obtained on all work attempted in order to be eligible to return. An overall grade point average of 2.0 on all work attempted while on leave combined with the WVU grade point average is also acceptable. While on an academic leave of absence, the student receives communications from WVU. Academic advisors and the Office of Admissions and Records can provide additional details about an academic leave and eligibility requirements.

### **Re-Enrollment After Withdrawal**

After withdrawing from WVU in two consecutive semesters (excluding summer sessions), a student may not register for further work without approval of the dean of the college or school in which he or she wants to register, subject to conditions set by that dean.

### **Committee on Academic Standards**

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration. All orders of the committee shall become effective when approved by the dean of the college or school. In exercising its authority, the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

### **Probation, Suspension, Readmission, Expulsion Policy**

#### **Uniform Probation**

Students with a cumulative grade point average below 2.0 are notified on semester grade reports that their academic performance is unsatisfactory. Such students may be subject to probation by the dean of their college or school. A unit may require a grade point average above 2.0 or other academic requirements for purposes of determining probation or meeting degree requirements. Students have the right to have the sanction of academic probation reviewed and explained by the academic official who imposed the sanction. Academic probation is not recorded on a student's permanent record and essentially constitutes a warning to the student of standards which must be met.

#### **Uniform Academic Suspension Regulations**

The student whose cumulative grade point deficiency exceeds the "allowable grade point deficiency" (see table on page 22) is subject to suspension at any time. Normally, students are suspended at the end of a semester or summer school session. Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Suspension from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester but will not exceed one calendar year from the date of a student's first suspension. A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at WVU upon readmission to the University. Students are not eligible for readmission if they earn less than a 2.0 at other institutions while on suspension from WVU.

After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the advisor and dean that the above conditions have been met. A student who has preregistered and is subsequently suspended shall have his or her registration automatically canceled.

### Reinstatement After Suspension

During the semester immediately following the effective date of suspension, suspended students may petition in writing for reinstatement. The college or school petitioned shall establish the terms of reinstatement for successful student petitions. After one calendar year from the effective date of suspension, any student who has been suspended one time shall, upon written application, be reinstated to the University and to the college or school in which the student was previously enrolled, unless the student petitions for admission to another college or school. The college which reinstates the student removes the student's suspension restriction in Admissions and Records and accepts the student.

A suspended student who is reinstated under the provisions above will be placed on academic probation and will be subject to the maximum grade point deficiency regulations as before, unless the terms of probation agreed to by the student and that college stipulate otherwise. Each college or school shall have the right to establish requirements or performance expectations.

After the second or any subsequent suspension, a student may be reinstated to the University provided that a college or school agrees to reinstate the student. After a student has been reinstated, he or she must apply for readmission through the Office of Admissions and Records.

### Maximum Allowable Grade Point Deficiency\*

Total Hours Attempted**	Maximum Grade Point Deficiency**	Total Hours Attempted**	Maximum Grade Point Deficiency**
10–19	20	55–59	12
20–24	19	60–64	11
25–29	18	65–69	10
30–34	17	70–74	9
35–39	16	75–79	8
40–44	15	80–84	7
45–49	14	85 or more	6
50–54	13		

\*The grade point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

\*\*Includes all hours attempted in institutions in the West Virginia system of higher education, excluding grades of P and exclusive of the D/F Repeat Policy.

### Appeal of Suspension

Imposition of academic suspension based on grade point average, failure to meet the conditions previously specified for removal of academic probation, or failure to meet the conditions of admission, may be appealed under the following conditions:

- The student may appeal individual final course grades and, if successful, may be reinstated.
- The student may make an appeal to the appropriate dean based on erroneous calculation of the grade point average or on erroneous calculation of the time period within which a grade point average must be achieved. The decision of the dean, as the president's designee, is final.

Students have the right to appeal academic suspensions based on requirements or standards other than grades or grade point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race or color, sex, sexual orientation, veteran status, religion, age, disability, national origin, creed, ancestry, or political affiliation. At the dean's discretion, suspensions may remain in effect until appeal procedures are completed.

**Step 1.** The student shall discuss the complaint with the dean involved within 30 calendar days of the action taken. If the two parties are unable to resolve the matter satisfactorily within 15 calendar days, the student may proceed to Step 2.

**Step 2.** The student must prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document shall be given to the University Committee on Student Rights and Responsibilities. Within 15 calendar days of receipt of the appeal, the University Committee on Student Rights and Responsibilities will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of the date, time, and place of the hearing.

2. The student may be advised by a person of his or her choice from within the institution; likewise, the academic officer recommending suspension may have an advisor from within the institution. Such advisors may consult with but may not speak on behalf of their advisees or otherwise participate.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The decision of the University Committee on Student Rights and Responsibilities will be sent to the dean involved and the student within seven calendar days of the hearing. If the decision requires a reinstatement, the dean will take action in accordance with the committee's decision. If the decision of the committee is to uphold the suspension, the student's appeal must reach the appropriate vice president within 30 calendar days of receipt of the committee decision. The vice president will review and make a decision regarding the suspension within 15 calendar days of receiving the student's appeal. The decision of the vice president, as the president's designee, is final.

### **Uniform Academic Dismissal Regulations**

Academic dismissal from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University. Academic dismissal can result from repeated failure to make academic progress and/or to meet probationary terms set forth in writing by the student's college or school.

After five calendar years from the effective date of academic dismissal, any student who has been dismissed shall, upon written application, be considered for reinstatement to the University, with the terms of reinstatement to be established by the college or school entered. Failure to meet these terms will result in permanent academic expulsion.

### **Appeal of Dismissal—Failure to Meet Academic Standards**

The procedures and appeals described here do not apply to dismissal as a sanction for academic dishonesty. The time limitations stated herein are suggested in order to render a decision as expeditiously as possible. In the case of University holidays or absence of person(s) involved, reasonable delays may be expected.

A decision to dismiss a student for failure to meet academic standards (as distinguished from academic dishonesty) can be made only after the student has been counseled by the appropriate departmental committee or representative, with counseling to take place as soon as possible after discovery of the problem. After the student is given a reasonable opportunity to correct deficiencies, there shall then be a formal review of the student's status by the appropriate departmental or program committee to determine whether the student shall be retained or dismissed. The student may provide the committee written documentation of his or her efforts to correct deficiencies.

A committee recommendation for dismissal, including any documentation provided by the student to the committee, shall be forwarded to the student's dean and to the student. Within 15 calendar days of receipt of the committee's recommendation, the dean shall inform the student and the student's department or program of his or her decision. A decision to dismiss shall specify whether the dismissal is from the program or college or school. The dean may also dismiss a student from the institution if the student does not meet institutional standards.

**Step 1.** The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

**Step 2.** The student will forward a copy of the appeal to the appropriate vice president within 15 calendar days of failure to resolve the matter at the dean's level. Prior to the decision of the vice president, the student will be given an opportunity to discuss the appeal with the vice president. The decision of the vice president, as the president's designee, shall be rendered within 15 days of receipt of the student's appeal and is final.

### **Appeal of Dismissal—Failure to Meet Academic Requirements or Performance Standards**

Dismissal, based on failure to meet academic requirements or performance standards irrespective of grades or grade point average, from undergraduate programs, graduate programs, professional programs, and/or from the institution, may also be appealed. Students have the right to appeal academic dismissal based on requirements or standards other than grades or grade point average which they believe reflect capricious, arbitrary, or prejudiced academic evaluation, or reflect discrimination based on race or color, sex, sexual orientation, veteran status, religion, age, disability, national origin, creed, ancestry, or political affiliation.

**Step 1.** The student shall prepare and sign a document which states the facts constituting the basis for the appeal. A copy of this document must reach the dean within 30 calendar days of receipt of written notice of dismissal. The student shall be given an opportunity to discuss the appeal with the dean at any time in Step 1. If the matter is not resolved satisfactorily within 15 calendar days of the dean's receipt of the student's appeal, the student may proceed to Step 2.

**Step 2.** The student will forward a copy of the appeal to the University Committee on Student Rights and Responsibilities, which, within 15 calendar days of receipt of the student's appeal, will arrange a hearing using the following procedures:

1. All parties involved shall receive written notice of date, time, and place of hearing.
2. The student may be advised by a person of his or her choice from the institution; likewise, the academic officer recommending academic dismissal may have an advisor from the institution. Such advisors may consult with but may not speak on behalf of their advisees or otherwise participate directly in the proceedings unless they are given specific permission by the University Committee on Student Rights and Responsibilities chairperson.
3. The administrative procedure is not adversarial in nature; the formal rules of evidence do not apply.
4. Witnesses may be called by any of the parties involved.
5. A record of the appeal shall be prepared in the form of summary minutes and relevant attachments and will be provided to any of the parties involved upon written request.

The University Committee on Student Rights and Responsibilities will reach a decision within seven days. The committee's recommendation for dismissal must be reviewed by the appropriate vice president, who may confirm or remand the recommendation with specific instructions. Prior to the decision of the vice president, the student will be given an opportunity to discuss the appeal with the vice president. Within 15 calendar days of a recommendation for dismissal confirmed by the vice president, the student may appeal to the president. The decision of the president is final.

## **Academic Integrity and Dishonesty**

The academic development of students and the overall integrity of the institution are primary responsibilities of WVU. Academic dishonesty is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

### **Responsibilities**

Students should act to prevent opportunities for academic dishonesty to occur, and in such a manner to discourage any type of academic dishonesty. Faculty members are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and public safety officers, shall promptly report each known case of academic dishonesty to the appropriate supervisor, department chairperson, or dean of the college or school concerned, and to the Office of Judicial Programs, Office of Student Life.

### **Academic Dishonesty Defined**

WVU expects that every member of its academic community shares the historic and traditional commitment to honesty and integrity. Academic dishonesty is defined to include but is not limited to any of the following:

1. **Plagiarism** is defined in terms of proscribed acts. Students are expected to understand that such practices constitute academic dishonesty regardless of motive. Those who deny deceitful intent, claim not to have known that the act constituted plagiarism, or maintain that what they did was inadvertent are nevertheless subject to penalties when plagiarism has been confirmed. Plagiarism includes, but is not limited to: submitting, without appropriate acknowledgment, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, electronic, visual, or oral material that has been copied in whole or in part from the work of others, whether such source is published or not, including (but not limited to) another individual's academic composition, compilation, or other product, or commercially prepared paper.
2. **Cheating and dishonest practices** in connection with examinations, papers, and projects, including but not limited to:

- a. Obtaining help from another student during examinations.
  - b. Knowingly giving help to another student during examinations, taking an examination or doing academic work for another student, or providing one's own work for another student to copy and submit as his or her own.
  - c. The unauthorized use of notes, books, or other sources of information during examinations.
  - d. Obtaining without authorization an examination or any part thereof.
3. **Forgery, misrepresentation, or fraud:**
- a. Forging or altering, or causing to be altered, the record of any grade in a grade book or other educational record.
  - b. Use of University documents or instruments of identification with intent to defraud.
  - c. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.
  - d. Knowingly presenting false data or intentionally misrepresenting one's records for personal gain.
  - e. Knowingly furnishing the results of research projects or experiments for the inclusion in another's work without proper citation.
  - f. Knowingly furnishing false statements in any University academic proceeding.

### **Procedure for Handling Academic Dishonesty Cases**

Academic dishonesty includes plagiarism; cheating and dishonest practices in connection with examinations, papers, and projects; and forgery, misrepresentation, and fraud. Some cases of forgery, misrepresentation, or fraud which occur outside the context of courses or academic requirements may be referred directly to the University Committee on Student Rights and Responsibilities by any member of the University community. In such cases, the University Committee on Student Rights and Responsibilities will arrange a hearing following the procedure outlined in Step 3 within 15 calendar days of receipt of the charges.

#### **Step 1. Instructor's Level**

1. **Instructor's Notice** An instructor who suspects a student of dishonest practices may meet with the student to discuss the evidence and may drop the matter without making a formal accusation and without imposing a penalty.
 

An instructor may not find guilt or impose a penalty without a written charge that describes the evidence against the student. Within 15 calendar days of discovering clear evidence of an offense, an instructor who wishes to charge a student with academic dishonesty must personally deliver written notice of the charges or send the notice by certified U.S. mail to the student's local and permanent addresses.
2. **Student's Response** A student who elects to respond must do so in writing no later than 15 calendar days after the mailing or personal delivery of the instructor's written notice. The student may respond by admitting or denying guilt, by offering counter evidence, or by describing extenuating or mitigating circumstances that might affect the instructor's judgement of the severity of the offense.
3. **Instructor's Decision** Within five calendar days of the student's response or after the opportunity for response has passed (whichever comes first), the instructor must reach a decision and send written notice of the decision to the student (and, if guilt is found, to others named below).
  - a. **Charge withdrawn** An instructor who believes that the evidence is not sufficient to establish guilt should immediately notify the student of this decision in writing, thus closing the case.
  - b. **Penalty imposed** An instructor who is convinced that the student is guilty and wishes to impose an academic penalty must summarize the evidence justifying the penalty in a written notice to the student. The notice must also inform the student of the right to petition the dean within 30 calendar days. Copies of the notice must be sent to the dean of college or school offering the course, the dean of the college or school in which the student is enrolled, and the Office of Judicial Programs. The maximum penalty an instructor may impose is an unforgivable F in the course. The Office of Judicial Programs will notify Admissions and Records to enter an unforgivable F, which cannot be removed from the student's transcript unless the decision is reversed. If the student repeats the course and a new grade is entered, the unforgivable F will still remain on the transcript. The instructor may exclude the student from further participation in the course, but is discouraged from doing so unless the student has admitted guilt in writing.
 

The instructor may impose lesser penalties, including (but not limited to) a reduced grade on the work or examination in question, assignment of remedial work, or a reduced grade (including a forgivable F). The instructor may also recommend to the dean of the college offering the course that additional penalties be imposed.

## Step 2. Dean's Level

A student may petition the dean on two grounds, which may be presented at the same time or separately within the 30-day time limit. A student may (I) ask the dean to review the conduct of the case for adherence to correct procedures; (II) challenge the finding of guilt or the severity of the penalty; or (III) do both.

1. **Procedural Review** A student who believes that the instructor failed to follow correct procedures at Step I may petition the dean of the college or school in which the course is offered to conduct a review of the procedures. The student must submit the petition in writing, specifying the procedural errors, within 30 days of the instructor's written notice.

Within 15 calendar days of receiving the student's petition, the dean or the dean's designee must:

- a. Notify the instructor that a procedural review is being conducted at the student's request and give the instructor an opportunity to reply.
- b. Decide, after reviewing the available information, whether any procedural errors were made and whether such errors affected the outcome of the case.
- c. Send written notice of the decision and its rationale to the student, instructor, and dean of the college in which the student is enrolled, and the Office of Judicial Programs.

A dean or dean's designee who decides that the outcome was affected may (I) direct the instructor to reopen the case and to correct the error(s) within a specified period of time or (II) overturn the instructor's decision and nullify the penalty, in which case the dean must see that the student's record is amended. If the dean or dean's designee decides that the outcome was not affected, the instructor's decision stands.

2. **Appeal** A student who wishes to challenge the instructor's finding of guilt or the severity of the penalty may appeal to the dean of the college or school in which the course is offered. The appeal must (I) be made in writing within 30 calendar days of the instructor's written notice; (II) state specific grounds for any claim that the finding of guilt was unwarranted or the penalty unjust; and (III) specify the desired remedy.

Within 15 calendar days of receiving the student's appeal the dean or dean's designee must:

- a. Notify the instructor that the student is appealing and specify whether the finding of guilt, the severity of the penalty, or both will be reviewed.
- b. Solicit from the instructor and the student evidence and arguments relevant to the issues.
- c. Make this material available to both the student and the instructor.
- d. Arrange a meeting of the instructor, the student, and the dean or dean's designee. (A person from within the University may accompany the student to the meeting and may consult with the advisee but not speak on behalf of the student or otherwise participate directly in the discussion unless given explicit permission by the dean or dean's designee.
- e. Decide, based on the available evidence, whether to uphold the decision being challenged.
- f. Send written notice of the decision, with summary minutes of the meeting and a rationale for the decision to the student, instructor, dean of the college or school in which the student is enrolled, and Office of Judicial Programs.
- g. See that the student's record is amended if necessary.

3. **Additional Penalties** The dean or dean's designee may impose penalties beyond those imposed by the instructor if the instructor recommends such action or if the dean's understanding of the case in the context of other misconduct by the student suggests that additional penalties are warranted. The dean or dean's designee may consider such action only after completing any procedural review or appeal requested by the student or after opportunities have passed for the student to initiate a review or appeal (that is, after it is clear that the instructor's decisions will stand).

Within 15 calendar days of this time, the dean or dean's designee must:

- a. Notify the student that additional penalties are being considered.
- b. Give the student an opportunity to provide additional evidence or argument that might affect a decision about the appropriate penalty and to answer any questions by the dean or dean's designee.
- c. Decide, based on the available evidence, whether to impose any additional penalties.
- d. Send written notice of the decision, including a summary of the evidence of the decision, including a summary of the evidence and a rationale for the decision, to the student, instructor, dean of the college or school in which the student is enrolled, and Office of Judicial Programs.

- e. See that the student's record is amended if necessary.

### **Step 3. University Committee Level**

A student or instructor may petition the Committee on Students Rights and Responsibilities on two grounds, which may be presented at the same time or separately within 30 calendar days of receipt of the dean's decision. A petitioner may (I) ask the committee for a procedural review; (II) challenge decisions made at Step 2; or (III) do both. Those petitioning the committee must do so in writing through the Office of Judicial Programs.

1. **Procedural Review** The student or the instructor may ask the committee to conduct its own review of the procedures followed in Steps 1 and 2.
  - a. The petition must (I) name the dean or instructor who is believed to have made the error(s); (II) describe the alleged procedural error(s); (III) specify how the error(s) affected the outcome of the case or otherwise harmed the student or the cause of justice; and (IV) include copies of all documentation and correspondence about the case.
  - b. On receipt of the petition, the committee chair, in consultation with the Office of Judicial Programs, will convene a panel of two faculty members and one student who will decide by majority vote whether to conduct the review. No member of this panel may serve on any other panel in connection with the same case. If the panel denies the petition, the procedural case is closed when written notice of the denial and its rationale has been sent to the student, instructor, dean of the college or school offering the course, dean of the college or school in which the student is enrolled, and the Office of Judicial Programs.

If a majority of the panel agrees that a review is warranted, they must (I) give the student, instructor, and dean a reasonable opportunity to answer any questions the panel may have; (II) decide, based on a review of the any such errors affected the outcome of the case; and (III) send written notice of the decision, with summary minutes of the meeting and a rationale for the decision to the student, instructor, deans of the college or school offering the course and the college or school in which the student is enrolled, and the Office of Judicial Programs.
  - c. A panel that decides by majority vote that the outcome was affected by error(s) may (I) direct the dean or instructor to reopen the case and to correct the error(s) within a specified period of time or (II) overturn the finding of guilt and nullify the penalty. In either course of action, the panel must provide the rationale for the decision.
  - d. The dean of the college or school offering the course must see that the student's record is amended if necessary.
2. **Appeal** The student or instructor may challenge the decision(s) of Step 2. (If the dean upheld the instructor's finding or penalty, then the student is appealing the instructor's decision, not the dean's.)
  - a. The petition must (I) specify the decision being appealed; (II) name the person whose decision is being appealed; (III) specify grounds for any claim that the finding of guilt was unwarranted or the penalty unjust; (IV) specify the desired remedy; (V) provide additional evidence or line or argument not previously introduced that might affect the outcome of the case; (VI) include copies of all documentation and correspondence about the case.
  - b. On receipt of the appeal, the committee chair, in consultation with the Office of Judicial Programs, must convene a panel of three faculty and two student members, chaired by one of the faculty members. This panel may decide by majority vote whether to conduct a hearing. If the panel decides that no hearing is warranted, the appeal is denied and the case is closed when written notice of the denial, including the rationale, has been sent to the student, instructor, dean of the college in which the course is offered, dean of the college in which the student is enrolled, and the Office of Judicial Programs.

If the panel deems a hearing is warranted, the Office of Judicial Programs must, in a timely manner, arrange a hearing to accommodate the schedules of the student, instructor, and dean, as well as any other parties involved, all of whom must be notified in writing of the date, time, and place of the hearing, as described below.
  - I. The administrative procedure is not adversarial; the formal rules of evidence do not apply.
  - II. Witnesses may be called by any of those involved.
  - III. The person bringing the appeal and the person whose decision is under appeal may be accompanied by an advisor from within the University who may consult with but not speak on behalf of the advisee or otherwise participate directly in the proceedings unless given explicit permission by the chair of the panel.
  - IV. A written record of the hearing must be prepared in the form of summary minutes with relevant attachments and must be provided to those involved upon written request. In addition, a tape recording of the hearing must be made a part of the permanent record.

- V. Within seven calendar days of the hearing the panel must decide by majority vote, based on the available evidence whether to uphold the decision(s) under appeal and must send written notice of the decision, specifying the numerical vote, to the student, instructor, dean of the college or school offering the courses, dean of the college or school in which the student is enrolled, and Office of Judicial Programs. The dean of the college offering the course must see that the student's record is amended if necessary.
- VI. If the panel overturns the decision(s) of Step 2, whether by charging the finding of guilt or by imposing, reinstating, or modifying a penalty, the panel's notice must summarize the evidence they considered and provide a rationale for the decision.
- VII. In an appeal by a student, the panel may not impose a penalty more severe than that imposed or upheld by the dean at Step 2; in an appeal by an instructor, the panel may not impose a penalty more severe than that imposed by the instructor at Step 1.

#### **Step 4. President's Level**

The student or the instructor may appeal decisions of the University Committee on Student Rights and Responsibilities to the president or president' designee. Such appeals must (I) be made in writing within 30 calendar days of notice of the decision of the Committee on Student Rights and Responsibilities; (II) state specific grounds for any claim that the committee's decision was faculty or unjust; and (III) specify the desired remedy. On receipt of the appeal, the president or president's designee will decide whether or not to hear the appeal. The decision of the president or of the president's designee is final.

## **Graduate Admission and Policies**

### **Health Sciences Center Graduate Council**

The Health Sciences Center Graduate Council advises the vice president for Health Sciences. In this role the council monitors and administers the graduate studies policies of the schools located at the Health Sciences Center.

### **Application and Admission**

Prospective graduate students are urged to initiate application for admission as early as possible. The first step of a student interested in a degree program should be to ask for information from the department, division, school, or college offering the program desired; the reply to such an inquiry will include instructions for applying to the particular program.

In all cases, application must be made for admission to graduate study on standard forms provided by the WVU Office of Admissions and Records. The completed form is to be returned to the Office of Admissions and Records, and must be accompanied by payment of a nonrefundable special service fee of \$50. Applicants must at the same time request that the registrar or records office of the college send an official transcript directly to the Office of Admissions and Records. If other institutions have been attended in the course of undergraduate or graduate study, transcripts should be requested from them as well. No one is admitted to graduate study who does not hold a baccalaureate degree from an accredited college or university.

If the applicant meets the minimum admission requirements of WVU, a copy of the application is forwarded to the faculty of the program of interest. Any graduate degree program is permitted to set admission requirements which go beyond the minimum admission standards of the University. No one can pursue an advanced degree at WVU unless admitted to the appropriate degree program.

### **GRE**

Many programs at WVU require Graduate Record Examination (GRE) scores from all applicants, but in no program is an examination score the sole criterion for admission. Some programs require both the general aptitude and the appropriate advanced test before considering an applicant for admission. All departments in the School of Medicine and School of Pharmacy require that all prospective students take the GRE test.

### **Reapplication**

When students graduate or complete the program for which they applied, they must reapply and be readmitted before taking further coursework at WVU. This policy assures that the University is informed of students' objectives and assigns them an appropriate advisor. Students are assessed a service fee for each new application.

When eight years have passed since initial coursework, a student must reapply. The application fee will be assessed.

## **Intra-University Transfers**

To transfer from one school or department to another, a student may initiate a transfer request by contacting the Health Sciences Center Graduate Programs Office or his or her advisor. The advisor must contact the Health Sciences Center Graduate Programs Office, which will complete the transfer.

## **Credits**

Credit toward a graduate degree may be obtained only for courses listed in the *WVU Graduate Catalog* and numbered 400–799, in which the grade earned is A, B, C, or S. No course in which the grade earned is D, P, F, or U can be counted toward a graduate degree.

## **Transfer Credit**

To apply graduate-level credits from other accredited institutions toward a master's degree at WVU, students must get permission from the individual schools or colleges. The standardized transfer application form must be approved and signed by a unit chairperson or designate, prior to the student's enrolling in the course(s) to be transferred to WVU. The school or department submits the approved form to the Health Sciences Center Graduate Programs Office for final approval and submission to the Office of Admissions and Records. It is the student's responsibility to see that Admissions and Records gets an original transcript from the other institution. Only credit earned at institutions accredited at the graduate level may be transferred.

Graduate courses taken elsewhere will not be approved for transfer credit unless the transfer application form was approved before enrolling in them. When a school or department approves the form, it is sent to the Health Sciences Center Graduate Programs Office for approval. A maximum of 12 semester hours from other institutions will be accepted for credit at WVU in master's programs requiring 30 to 41 semester hours. Eighteen semester hours will be accepted for master's degree programs requiring 42 or more semester hours. Individual graduate programs may accept fewer credit hours.

## **International Student Admission**

West Virginia University is authorized under federal law to enroll non-immigrant foreign nationals as students. International students wishing to enroll for graduate work at WVU must comply with the stated academic requirements for admission and with certain additional academic and nonacademic requirements.

International applicants should forward a letter of inquiry one year before they intend to begin study in the United States. The University receives a large number of applications from international students. For this reason and because of the time required for the student to make visa and financial arrangements, April 1 has been established as a deadline after which applications cannot be guaranteed consideration for fall admission. International students applying for admission to West Virginia University must submit the following:

- A completed international student admission application.
- Application service fee.
- The official results of the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). TOEFL or IELTS results must be sent directly to WVU by the testing service.
- Original or certified copies of the applicant's official academic record in the original language of issue. Applicants who have studied in the United States are required to have the institutions send an official transcript directly to WVU.
- Original or certified copy of all certificates or diplomas in the original language of issue.
- Official English translations of the academic record and certificates/diplomas.

The items above should be sent to Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, West Virginia 26506-6009. All material must be received by the application deadline. If possible, all application materials should be submitted at one time (TOEFL or IELTS scores and official transcripts from United States institutions should be requested so that all material arrives at WVU close to the same date). Incomplete applications cannot be guaranteed consideration for the desired semester. Applicants are encouraged to contact the academic program of interest for information about requirements other than those listed above.

## **Required Academic Credentials**

Applicants for graduate programs must submit academic records from all post-secondary education. In some cases, it may be necessary for graduate applicants to submit records from the secondary school.

West Virginia University requires that original academic documents or certified copies of the original academic documents from non-United States institutions be submitted. The required documents include the official academic record (showing course titles, dates taken, and grades received), and diploma(s) or certificate(s) showing the degree awarded. These documents must be

in the original language of issue. Official English translations must be included. Translations must be literal, word-for-word translations and must indicate actual grades received, not an interpretation of the grades.

Documents received by WVU become the property of WVU and cannot be returned to the applicant. It is therefore recommended that students who receive only one original copy of credentials submit certified copies with the application.

Applicants who are currently enrolled in an institution and who cannot submit the final academic record and certification of degree may be granted admission if the incomplete record indicates that the applicant will unquestionably meet WVU admission standards. Final admission, however, cannot be approved until the complete academic record and certification of degree have been received and evaluated by the Office of Admissions and Records.

## **English Language Proficiency**

All applicants whose first language is not English must provide proof of English language proficiency. WVU uses the Test of English as a Foreign Language (TOEFL) and the International English Language Testing System (IELTS) as measures of English language proficiency. A score of 213 on the computer-based TOEFL, 550 on the paper-based TOEFL, or 80 on the internet-based TOEFL or 6.5 on the IELTS is the minimum required of all such applicants. Applicants must make arrangements to take the TOEFL/IELTS well in advance of the desired date of enrollment at WVU. Information about registration for the TOEFL can be obtained by writing to: Educational Testing Service, P.O. Box 6154, Princeton, NJ 08541-6154, USA, or by contacting the local office of the United States Information Service (USIS).

Applicants who have received a high school diploma or a bachelor's degree in the United States need not submit TOEFL/IELTS results. However, applicants only having a master's degree from an accredited U.S. college or university must still provide acceptable TOEFL or IELTS scores.

## **Financial Documents and Student Visa**

International students requiring a form I-20 or IAP-66 for student or exchange visa must provide certification of adequate financial resources in U.S. dollars. Generally, the student must provide an official bank statement showing the availability of the appropriate funds. If a private sponsor will be the student's source of support, the sponsor must submit a letter showing intent to sponsor and an official bank statement showing the availability of the appropriate funds. Other forms of support could include sponsorship certifications from the student's government or sponsoring agency. In all cases, original or certified copies of financial/sponsorship documents must be submitted before the I-20 or IAP-66 can be issued.

## **Intensive English Program**

In some cases, it may be possible to consider applications for students who lack adequate TOEFL/IELTS scores and will enroll in the West Virginia University Intensive English Program. Such applicants must contact the Intensive English Program directly and notify the Office of Admissions and Records of their intentions. Applicants for graduate programs should also notify the academic department of interest of their intentions. Admission to the Intensive English Program does not guarantee admission to the University or to a specific program of study. In general, students with low TOEFL/IELTS scores are almost never permitted to enroll in a full nine hours of graduate courses in their first semester, but must take sufficient ESL courses to give them some chance of succeeding in their coursework. Their subsequent performance in ESL courses will largely determine whether or not they can be accepted with regular graduate student status. Applicants admitted to an academic program under the condition of successful completion of the Intensive English Program will be required to meet a certain level of English language proficiency before being permitted to begin the academic portion of their studies, e.g., a grade of B or better in ESL courses or a TOEFL score above 550 or its new TOEFL equivalent or an IELTS score of 6.5. Inquiries about the Intensive English Program should be directed to the Intensive English Program, Department of Foreign Languages, West Virginia University, P.O. Box 6298, Morgantown, WV 26506-6298.

## **Classifications**

Regular graduate students are degree-seeking students who meet all the criteria for regular admission to a program of their choice. The student must possess a baccalaureate degree from an accredited college or university, must have at least a grade point average of 2.75 on a 4.0 scale, have met all the criteria established by the degree program, and be under no obligation to make up deficiencies.

A student may be admitted as provisional by any unit when the student possesses a baccalaureate degree from an accredited college or university but clearly does not meet the criteria for regular admission. The student may have incomplete credentials, deficiencies to make up, or may have an undergraduate scholastic record which shows promise, but less than the 2.75 grade point average required for regular admission.

A non-degree student is a student not admitted to a program. Admission as a non-degree student does not guarantee admission to any course or program. The reasons for non-degree admission may be late application, incomplete credentials, scholarship deficiencies, or lack of a degree objective. Even though a non-degree student has not been admitted to a graduate program, a unit may allow a non-degree student to enroll in its courses. To be admitted as a non-degree student, a student must only present evidence of a baccalaureate degree from an accredited college or university and a 2.5 grade point average, but the student must obtain a 2.5 grade point average on the first 12 credit hours of coursework and maintain this average as long as enrolled. To be eligible to enter a degree program, the student must maintain a minimum of a 2.75 grade point average on all coursework taken since admission as a graduate student.

The standards cited are the minimum standards established by the University. Individual academic units or graduate programs may establish higher standards.

## **Reclassification of Provisional Students**

The provisions of a student's provisional status are specified by the graduate department or program, but also may include satisfactory performance in ESL courses. To be reclassified as a regular student, a student must meet the provisions stated by the department and achieve a minimum grade point average of 2.75 on all coursework taken during the provisional period. Individual degree programs may set higher grade point average requirements.

No later than the completion of the 18 credit hour, a unit must review the student's record and make a final decision on the student's admission. A student who has met the provisions of admission and achieved the required grade point average will be reclassified as a regular student. A student who fails to meet the provisions of admission or who fails to achieve the required grade point average will be suspended, but may be reinstated in order to transfer to another program or to non-degree status. The academic unit must notify the student and the Office of Admissions and Records of its decision.

Upon notification by the appropriate academic unit, the Office of Admissions and Records will prohibit the registration of all provisional graduate students who have reached the maximum of 18 credit hours. Registration will not be permitted until the student is reclassified as a regular student, an exception is granted by an academic dean, or the student is transferred. A student may be admitted as a provisional graduate student more than one time, but not by the same graduate program.

All credit hours taken since admission as a provisional graduate student or to be applied to a degree count in the 18<sup>th</sup> credit-hour limit, i.e., undergraduate or graduate credit, P/F, S/U, graded courses, credit by senior petition, and transfer credit.

### *Regular or Provisional to Non-Degree*

- Regular and provisional students may become non-degree students by choice. This includes students who fail to meet admission or academic standards or who withdraw voluntarily.
- To change a student to non-degree status, the advisor must process a Graduate Studies Transfer/Status form through the Health Sciences Center Graduate Programs Office.

### *Non-Degree to Regular or Provisional*

- Non-degree students who later wish to become degree candidates must transfer and present all the credentials required by the degree program. This requires the processing of a Departmental Decision Form by the student's advisor through the HSC Graduate Programs Office.
- For admission to a degree program, a non-degree student must have achieved a minimum grade point average of 2.75 on all coursework taken since admission as a graduate student.

## **Employed Graduate Students**

Graduate students will be required by their advisors to limit their credit loads in proportion to the outside service rendered and the time available for graduate study. In general, persons in full-time service to the University, or other employer, will be advised to enroll for no more than six hours of work in any one semester and those in half-time service for no more than 12 hours. Maximum credit loads may be less for employed graduate students in some academic colleges, schools, and departments.

## **Non-Degree Graduate Students**

A non-degree graduate student may accumulate unlimited graduate credit hours, but if the student is later admitted to a degree program, the faculty of that program will decide whether or not any credit earned as a non-degree student may be applied to the degree. Under no circumstances may a non-degree student apply more than 12 hours of credit toward a degree.

## Time Limits

**Master's Degree** All requirements for a master's degree must be satisfactorily completed within eight years immediately preceding the student's graduation.

**Doctoral Degree** The doctorate is a research or performance degree and does not depend on the accumulation of credit hours. The three requirements of the degree are admission to candidacy, residency, and completion and defense of the dissertation. The degree signifies that the holder has the competence to function independently at the highest level of endeavor in the chosen profession. Hence, the number of years involved in attaining or retaining competency cannot be readily specified. Rather, it is important that the doctoral student's competency be assessed and verified in a reasonable period of time prior to conferral of the degree.

The qualifying examination is the method of assessing whether the student has attained sufficient knowledge of the discipline and supporting fields in order to undertake independent research or practice. It is expected that the examination will occur after all coursework has been completed and language or other requirements satisfied, and it consists of a series of examinations covering all areas specified in the plan of study. After the component parts of the qualifying examination have been successfully passed, the student is admitted to candidacy for the degree. It is sometimes called the candidacy examination because no one can be called a doctoral candidate until this first requirement for the degree has been met.

Because the qualifying examination attests to the academic competence of the student who is about to become an independent researcher or practitioner, the examination should not precede the degree by too long a period of time. Consequently, doctoral candidates are allowed no more than five years in which to complete remaining degree requirements. In the event a student fails to complete the doctorate within five years after admission to candidacy, an extension of time can be obtained only by repeating the qualifying examination, and meeting any other requirements specified by the student's committee.

## Contractual Nature of Graduate Study

The student's rights, privileges, obligations, and responsibilities are contained in the *WVU Graduate Catalog*, the plan of study, and, if research is one of the degree program requirements, the prospectus. Although no contracts in the formal legal sense, these requirements are agreements between the University and a student for the accomplishment of planned educational goals.

## Plan of Study

Within the first academic year, the student submits a plan of study to the Health Sciences Center Graduate Programs Office. Once approved, the plan of study becomes part of the student's record. It serves as a formal agreement between the student and program faculty as to the requirements for completing the graduate degree. Any changes to the plan of study must be made through mutual agreement, and the student must submit a memorandum of changes to the Health Sciences Center Graduate Program's Office.

## Records

The Health Sciences Center Graduate Programs Office maintains all records for monitoring student progress and for certifying students for graduation. Among these records are plans of study (subject to chairperson of Health Sciences Center Graduate Council's approval); graduate committees (subject to school dean's or designate's approval and approval of the Health Sciences Center Graduate Programs Office); grades and grade modifications.

## Grading

*Pass-fail grading is not applicable to the coursework for a graduate degree.* A graduate student may register for any course (100–499) on a pass-fail basis only if the course involved is not included in the student's plan of study and does not count toward a graduate degree. The selection of a course for pass-fail grading must be made at registration and may not be changed after the close of the registration period. A student who, having taken a course on a pass-fail basis, later decides to include the course as part of a degree program must re-register for the course on a graded (A, B, C, D, or F) basis.

## Incompletes

When a student receives a grade of incomplete and later removes that grade, the grade point average is recalculated on the basis of the new grade. The grade of I is given when the instructor believes that the coursework is unavoidably incomplete or that a supplementary examination is justifiable. Before any graduate degree can be awarded, the grade of I must be removed either by removal of the incomplete sometime before program completion or by having it recorded as a permanent incomplete. Only the instructor who recorded the I, or, if the instructor is no longer at WVU, the chairperson of the unit in which the course was given, may initiate either of these actions.

In the case of withdrawal from the University, a student with a grade of I should discuss that grade with the appropriate instructor. An I grade may eventually convert to F. Grade changes other than I to a letter grade must be accompanied by an explanatory memo.

## **Dissertation Procedures**

Procedural rules for dissertations and theses are found in the *WVU Graduate Catalog*.

## **Dismissal**

Dismissal from a graduate or professional program may be based on program and/or professional performance standards other than cumulative grade point average. Reasons must be based on catalog and other written documents describing academic and professional performance standards and expectations.

### **Procedures**

1. Counseling by departmental committee or representative as soon as possible after discovery of problem.
2. Second counseling by departmental committee or representative after opportunity to improve if performance is not changed sufficiently.
3. Formal review of student status by department or program committee.  
The formal review will result in one of the following actions:
  - Student retained or recommended for dismissal.
  - Counseling or remediation required as a condition of retention.
  - Appeals available if dismissal recommended.
4. A dismissal decision by the dean of the student's school or college may be appealed to the University conduct/appeals committee which will hold a hearing using the following procedures:
  - The student may be advised by a person of his or her choice to assure due process protection not to affect the outcome of the proceedings. The advisor may consult with the student but shall not speak on behalf of the student or participate directly unless granted specific permission by the University conduct/appeals committee.
  - The formal rules of evidence do not apply.
  - The administrative procedure is not adversarial in nature.
  - Witnesses may be presented and examined under oath.
  - An accurate record of the procedure is to be kept. The student may request a transcript of the proceedings at the student's expense.
  - An academic appeals committee has the right to counsel in those proceedings in which the student has retained counsel. Such counsel may not speak on behalf of the institution or otherwise participate directly in the proceedings.
5. A decision for dismissal must be reviewed by the appropriate academic vice president who may confirm or remand the recommendation with specific instructions.
6. Recommendation for dismissal confirmed by the appropriate academic vice president may be appealed to the president. The decision of the president is final.

## **Students' Committees**

Doctoral dissertation committees will consist of no fewer than five members, the majority of whom, including the chairperson, will be regular graduate faculty. No more than one person may be a non-member. At least one member of every doctoral committee must be from a department other than the one in which the student is seeking a degree.

Master's committees of programs requiring a thesis will consist of no fewer than three members, the majority of whom will be regular graduate faculty, including the chairperson. No more than one person may be a non-member.

Master's committees of programs not requiring a thesis will consist of no fewer than three members, one of whom must be a regular graduate faculty member. No more than one person may be a non-member, and the non-member cannot chair or advise.

Committee approval must be obtained prior to the second semester for a master's degree and prior to the fourth semester for the doctorate. Committee approval for the nursing program is after the third semester.

## **Committee Approval**

All graduate committees are subject to the approval of the school dean or designate and the Health Sciences Center Graduate Programs Office.

# Fees

## Regulations

All West Virginia University fees are subject to change without notice. A nonrefundable special service fee of \$50 must accompany the application for admission to graduate studies. All fees are due and payable to the Office of Student Accounts on the days of registration. Arrangements with the Office of Student Accounts for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. All students are expected to register on days set apart for registration at the beginning of each semester or summer session of the University. No student will be permitted to register at the University after the eighth day of a semester or the fourth calendar day of the summer sessions or a single summer session. Days are counted from the first day of registration. Any student failing to complete registration on regular registration days is subject to a late registration fee.

Registering students pay the fees shown in the fee charts, plus special fees and deposits as required.

No degree is conferred upon any candidate and no transcripts are issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

It is the policy of WVU to place on restriction students who have outstanding debts to a unit or units of the University. The restriction may include, but is not limited to, the withholding of a student's registration, diploma, or transcript. Persons who are neither registered as University students nor members of its administrative or teaching staffs shall not be admitted to regular attendance in University classes.

## Financial Aid

Students interested in applying for financial aid need to complete a Free Application for Federal Student Aid (FAFSA). This form is the application for all major federal student aid programs and must be received at the federal processing center by March 1 for applicants to receive maximum consideration.

For the summer session(s) a separate WVU Financial Aid Application is also required. Forms are available in the Financial Aid Offices in the Mountainlair, the Health Sciences Center, and the College of Law.

Students can also complete a FAFSA on the Internet at <http://www.fafsa.ed.gov>. Instructions are available at University libraries and computer labs and in the Financial Aid Offices.

For those students who filed a FAFSA for the previous year, a renewal application may be used. Renewal FAFSAs are mailed to students' home addresses to arrive by mid-January. Students who do not receive a renewal FAFSA by that time should contact the Financial Aid Office for a regular FAFSA or file by using the Web address above.

## Extended Learning/Off-Campus

Tuition per credit hours for off-campus students are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Student Activity Fee (ID). However, they must pay \$40.00 per credit hour for each off-campus course, television course, and Internet course.

## Laboratory Fees

Laboratory fees will be assessed to all students, full-time or part-time, undergraduate or graduate, for each lab section enrolled. Some departments may also have additional fees or rental fees.

## Special Fees

Application for Undergraduate Admission (Resident)	\$25.00
(Non-resident)	40.00
Application for Admission (Dentistry, Medicine, Doctor of Physical Therapy, and Pharmacy)	50.00
Application for Admission (College of Law or Graduate Studies)	50.00
Diploma Replacement	35.00
Examination for Advanced Standing	50.00
Graduation (Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	39.00
Late Registration Payment	40.00
(Not charged to students who complete registration during the regular registration days set forth in the University calendar.)	

Reinstatement of Student Dropped from the Rolls	40.00
Student Identification Card Replacement	20.00
Official Transcript	6.00
Official Letter	6.00
Statement of Degree Letter, Grade Point Average Letter	6.00
Priority Service (Transcript/Letter)	10.00

## Summer Tuition and Fees

Check the Web site [http://http://www.wvu.edu/admissions/tuition\\_fees.html](http://http://www.wvu.edu/admissions/tuition_fees.html)

## Non-Sufficient Funds Check Policy and Service Charge

Payments of tuition, fees, and other charges by check, draft, or order are subject to WVU's Non-Sufficient Funds Check Policy. A copy of the policy is available in the Office of Student Accounts. A service charge of \$15 is collected on each check returned unpaid by the bank upon which it was drawn. The service charge on unpaid, returned checks is subject to change in accordance with state law.

## Refund of Fees

*(subject to change)*

WVU's refund policy has changed beginning with Fall 2007 semester. Students dropping courses during the first week of classes will be refunded at 100 percent. After the first week of classes, students will no longer be refunded for dropping courses and only students completely withdrawing from the University within the refund period will be eligible for a tuition and fee refund. Every effort will be made to process refunds within 30 days for those students that do withdraw within the refund period.

**Withdrawals** To withdraw officially from the University and receive a refund, a student must apply at the Office of Admissions and Records. Term fees are refunded as follows:

1. Tuition, special, and refundable miscellaneous fees—refundable only upon withdrawal. Percentage is based on date of withdrawal and student status. Refer to the refund schedule.
2. Lab Fees—refundable at 100 percent during the first week of classes only and non-refundable thereafter.
3. Nonrefundable Miscellaneous Fees – includes application fee, transcript fee, graduation fee (if graduating), late registration, late payment, and reinstatement fee. All of these fees are nonrefundable.
4. Room and Board—the unused portion of room and board is refunded on a pro rata basis, based on the date the student's belongings are removed from the room and the meal ticket/ID and room keys are surrendered.

## Exceptions

Students called to the armed services of the United States may be granted full refund of refundable fees, but no course credit, if the call comes before the end of the first three-fourths of the semester. If the call comes thereafter, full credit of course(s) may be granted, provided the student is maintaining a passing mark at time of departure for military services.

Students withdrawn due to catastrophic illness or death will be provided a refund as approved by Dean of Student Life of his/her designee.

**Dropped Courses**—if a student drops below full-time status (12 hours for undergraduates and nine hours for graduates), term fees are refundable as follows:

1. Tuition, special, and refundable miscellaneous are fees refundable at 100 percent during first week of classes only and nonrefundable thereafter.
2. Lab Fees—refundable at 100 percent during the first week of classes only and nonrefundable thereafter.
3. Nonrefundable miscellaneous fees—includes application fee, transcript fee, graduation fee (if graduating), late registration, late payment, and reinstatement fee. All of these fees are nonrefundable.

## Refund Schedule for Complete Withdrawal from University

Refund Period/Percentage		Refund Period/Percentage	
1st week	90%	5th Week	50%
2nd Week	90%	6th Week	50%
3rd Week	70%	7th Week–16th Week	0%

Student withdrawing after sixth week of classes are not eligible for a tuition and fee refund.

Refund amounts for arranged and other special courses will be determined at time of withdrawal.

Course registration resulting in different lengths of courses may alter refund schedule and amount. Special fees are refunded on the basis of the longest registration period.

\*\*\*Note: After the first week of classes, student fees will not be refunded for dropping courses. At that point, students will only be eligible for a tuition and fee refund if they completely withdraw from the term within the refund period. For the last date for which a student that is withdrawing is eligible for a refund, see refund schedule above.

## Cost of an Academic Year's Work

The Student Financial Aid Office estimates that the total cost of attending WVU for a nine-month academic year is \$16,270 for single West Virginia residents living on or off campus and \$24,970 for nonresidents living on or off campus. These typical estimated student budgets include tuition and fees, books and supplies, room, board, transportation, and personal expenses that provide for a modest but adequate lifestyle.

## Identification Card

An identification card is issued to each full-time student when fees are paid in full. Certain part-time students can be eligible for an identification card when the appropriate fees are paid. It admits the owner to certain University athletic events, various activities of student administration, the Health Service, the Mountainlair, and the Recreation Center. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

## Estimated Expenses for Graduate/Professional Health

### Sciences Center Programs

These estimated expenses are accurate as of April 1, 2008, and are subject to change. For current accurate tuition costs, call Admissions and Records at 1-800-344-WVU1 or visit the web site at: [http://http://www.arc.wvu.edu/admissions/tuition\\_fees.html](http://http://www.arc.wvu.edu/admissions/tuition_fees.html). Tuition and registration fees are the same for both semesters. Some programs require summer sessions. Additional tuition and fees apply. 4.2 A non-resident student who becomes independent while a student at an institution of higher education in West Virginia does not, by reason of such independence alone, attain domicile in this state for admission or fee payment purposes

## Residency Policy

**Section 1** of this policy bulletin contains general information regarding its scope and dates of adoption.

### Section 2. Classification for Admission and Fee Purposes

2.1 Students enrolling in a West Virginia public institution of higher education shall be assigned a residency status for admission, tuition, and fee purposes by the institutional officer designated by the president. In determining residency classification, the issue is essentially one of domicile. In general, the domicile of a person is that person's true, fixed, permanent home and place of habitation. The decision shall be based upon information furnished by the student and all other relevant information. The designated officer is authorized to require such written documents, affidavits, verifications, or other evidence as is deemed necessary to establish the domicile of a student. The burden of establishing domicile for admission, tuition, and fee purposes is upon the student.

2.2 If there is a question as to domicile, the matter must be brought to the attention of the designated officer at least two weeks prior to the deadline for the payment of tuition and fees. Any student found to have made a false or misleading statement concerning domicile shall be subject to institutional disciplinary action and will be charged the nonresident fees for each academic term theretofore attended.

2.3 The previous determination of a student's domiciliary status by one institution is not conclusive or binding when subsequently considered by another institution; however, assuming no change of facts, the prior judgment should be given strong consideration in the interest of consistency. Out-of-state students being assessed resident tuition and fees as a result of a reciprocity agreement may not transfer said reciprocity status to another public institution in West Virginia.

### **Section 3. Residence Determined by Domicile**

3.1 Domicile within the state means adoption of the state as the fixed, permanent home and involves personal presence within the state with no intent on the part of the applicant or, in the case of a dependent student, the applicant's parent(s) to return to another state or country. Residing with relatives (other than parent(s)/legal guardian) does not, in and of itself, cause the student to attain domicile in this state for admission or fee payment purposes. West Virginia domicile may be established upon the completion of at least 12 months of continued presence within the state prior to the date of registration, provided that such 12 months' presence is not primarily for the purpose of attendance at any institution of higher education in West Virginia.

3.2 Establishment of West Virginia domicile with less than 12 months' presence prior to the date of registration must be supported by evidence of positive and unequivocal action. In determining domicile, institutional officials should give consideration to such factors as the ownership or lease of a permanently occupied home in West Virginia, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering of motor vehicles in West Virginia, possessing a valid West Virginia driver's license, and marriage to a person already domiciled in West Virginia. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established.

3.3 Factors militating against the establishment of West Virginia domicile might include such considerations as the student not being self-supporting, being claimed as a dependent on federal or state income tax returns or the parents' health insurance policy if the parents reside out of state, receiving financial assistance from state student aid programs in other states, and leaving the state when school is not in session.

### **Section 4. Dependency Status**

4.1 A dependent student is one who is listed as a dependent on the federal or state income tax return of his or her parent(s) or legal guardian or who receives major financial support from that person. Such a student maintains the same domicile as that of the parent(s) or legal guardian. In the event the parents are divorced or legally separated, the dependent student takes the domicile of the parent with whom he or she lives or to whom he or she has been assigned by court order. However, a dependent student who enrolls and is properly classified as an in-state student maintains that classification as long as the enrollment is continuous and that student does not attain independence and establish domicile in another state.

### **Section 5. Change of Residence**

5.1 A person who has been classified as an out-of-state student and who seeks resident status in West Virginia must assume the burden of providing conclusive evidence that he or she has established domicile in West Virginia with the intention of making the permanent home in this state. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements, but also by that person's actions. In making a determination regarding a request for change in residency status, the designated institutional officer shall consider those actions referenced in Section 2 previously. The change in classification, if deemed to be warranted, shall be effective for the academic term or semester next following the date of the application for reclassification.

### **Section 6. Military**

6.1 An individual who is on full-time active military service in another state or foreign country or is an employee of the federal government shall be classified as an in-state student for the purpose of payment of tuition and fees, provided that the person established a domicile in West Virginia prior to entrance into federal service, entered the federal service from West Virginia, and has at no time while in federal service claimed or established a domicile in another state. Sworn statements attesting to these conditions may be required. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

6.2 Persons assigned to full-time active military service in West Virginia and residing in the state shall be classified as in-state students for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as in-state students for tuition and fee purposes.

## **Section 7. Aliens**

7.1 An alien who is in the United States on a resident visa or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia as defined in Section 3, may be eligible for in-state residency classification, provided that person is in the state for purposes other than to attempt to qualify for residency status as a student. Political refugees admitted into the United States for an indefinite period of time and without restriction on the maintenance of a foreign domicile may be eligible for an in-state classification as defined in Section 3. Any person holding a student or other temporary visa cannot be classified as an in-state student.

## **Section 8. Former Domicile**

8.1 A person who was formerly domiciled in the state of West Virginia and who would have been eligible for an in-state residency classification at the time of his or her departure from the state may be immediately eligible for classification as a West Virginia resident provided such person returns to West Virginia within a one-year period of time and satisfies the conditions of Section 3 regarding proof of domicile and intent to remain permanently in West Virginia.

## **Section 9. Residency Decisions/Appeals**

Following is the process for initially determining residency for tuition purposes and how students appeal if they disagree with those decisions. Initial residency decisions are made at the admission level. Any questionable decisions are referred to the designated institutional official who determines whether the student meets the residency requirements or additional information is needed to make the decision. If additional information is needed, the student is requested to submit further documentation. If a student feels he or she has been improperly classified as a non-resident for tuition purposes, he or she should request an application for classification as a resident student at West Virginia University. To request this application write: Residency Officer, Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009, or call (304) 293-2121.

Once this application and supporting documents are received, a decision is made by the designated institutional official. If the student meets the requirements as outlined by the Board of Trustees Policy Bulletin #34, the student is granted residency for the upcoming semester. If the student does not meet the necessary requirements, the student is denied in-state residency. If denied, the student has the option of appealing the decision to the WVU Council on Residency. The council consists of faculty and student representatives, whose number shall be at least three. The student representative(s) shall be appointed by the president of West Virginia University Student Administration while the faculty representative(s) shall be selected by the University Faculty Senate. The student contesting a residency decision shall be given the opportunity to appear before the institutional committee on residency appeals.

If the council overturns the initial denial, the student becomes a resident for the semester in question. Should the council uphold the original denial, the student has the option of appealing to the president of WVU. The president, again, may either uphold the original denial or overturn the decision of the council.

Residency appeals shall end at the institutional level.

# School of Dentistry

Louise T. Veselicky, D.D.S., M.D.S., M.Ed., Interim Dean  
Christina B. DeBiase, B.S.D.H., M.A., Ed.D., Associate Dean, Academic and  
Postdoctoral Affairs

Richard J. Crout, D.D.S., M.S., Ph.D., Associate Dean, Research  
Shelia S. Price, D.D.S., M.A., Ed.D., Associate Dean, Admissions, Recruitment and Access  
Robert L. Wanker, D.D.S., Assistant Dean, Student and Alumni Affairs

<http://www.hsc.wvu.edu/sod>

## Degrees Offered

*D.D.S. in Dentistry*

*M.S. in Dental Specialties (Endodontics, Orthodontics, and Prosthodontics)*

*M.S. in Dental Hygiene*

*B.S. in Dental Hygiene*

## Historical Background

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class was enrolled in September 1957. The 23 members of that class graduated in 1961, receiving the first dental degrees awarded in West Virginia. In September 1961, the first two students were enrolled in the school's baccalaureate degree program in dental hygiene and graduated in 1965.

## Mission

To promote a learning environment that addresses the present and future oral health needs of the citizens of West Virginia and beyond by providing an oral health center committed to excellence and innovation in education, teaching, patient care, community service, research, and technology.

The WVU School of Dentistry offers degrees of doctor of dental surgery, master of science in dental specialties and dental hygiene, and bachelor of science in dental hygiene. The Department of Oral and Maxillofacial Surgery offers one four-year residency. Three one-year general practice residencies are also offered. Programs leading to the master of science and doctor of philosophy degrees are available in the associated basic sciences. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

## Accreditation

All programs are accredited by the Commission on Dental Accreditation of the American Dental Association.

## Administration

The dean is responsible for implementing the established policies of the School of Dentistry, the Health Sciences Center, and the University. The dean of the School of Dentistry reports to the vice president for Health Sciences.

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include over 75 treatment cubicles and all necessary related laboratories. Students treat their assigned patients under close supervision of faculty and receive practical experience while rendering service to thousands of patients annually.

## Books and Instruments

Dental and dental hygiene students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses. All dental students must maintain a library of required textbooks through graduation. Used instruments and equipment are not acceptable.

## Organizations

*American Student Dental Association.* Pre-doctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Research.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Research during the period of enrollment in the School of Dentistry.

*American Dental Education Association.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Dental Education Association during the period of enrollment in the School of Dentistry.

*American Association of Women Dentists.* The objectives and purposes of the West Virginia University School of Dentistry Chapter of the American Association of Women Dentists are to offer opportunities for personal growth through association with women in our profession, support the goals of the American Association of Women Dentists, aid in the advancement of women in dentistry, promote professional support and cooperation among its members, and promote the fundamentals of good oral health.

*Academy of Dentistry for Persons with Disabilities.* The Academy of Dentistry for Persons with Disabilities is an international organization for dental students and hygiene students interested in management and treatment of special care patients. Community services are provided by assisting with Special Olympics and presenting disability awareness programs to area grade schools. Guest speakers are sponsored on topics such as: "Managing the Hearing Impaired Patient in the Dental Office," "Use of Restraint in Treating Patients with Disabilities," and "Child Abuse and Neglect in Special Needs Children."

*WVU School of Dentistry Alumni Association.* In a series of meetings held during May 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the educational program of the School of Dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are from the academically superior 20 percent.

*Dental Fraternities.* Chapters of two national dental fraternities, Delta Sigma Delta and Psi Omega, are active at the school.

*The Student American Dental Hygienists' Association.* Dental hygiene students are eligible for membership in the official organization representing the dental hygiene profession.

*Sigma Phi Alpha.* Alpha Xi chapter of the national dental hygiene honorary society, Sigma Phi Alpha was established on March 19, 1968. Student membership is limited to ten percent of each graduating class. Candidates are selected on the basis of scholarship, character, and leadership potential as a dental hygienist.

## **Undergraduate Program**

### **Dental Hygiene**

Amy D. Funk, M.S.D.H., Interim Director

e-mail: afunk@hsc.wvu.edu

1188 Health Sciences North

<http://www.hsc.wvu.edu/sod/>

### **Degree Offered**

#### ***Bachelor of Science***

Dental Hygiene, a division of the School of Dentistry, offers a four-year curriculum leading to a B.S. in dental hygiene. The program is, in part, based in the liberal arts, but it is also a thoroughly professional education. The format of the curriculum is not conventional, in that it includes courses from many academic disciplines. The program prepares students through classroom and practical experiences.

### **Program Goals**

Program goals include:

1. Provide a high quality program of instruction that prepares dental hygienists to:
  - a. Possess a heightened awareness of social and cultural diversity, ethics, and professionalism.
  - b. Apply critical thinking to integrate current scientific principles/technology with the provision of evidenced-based, comprehensive health care.
  - c. Perform to the level of clinical competency those legally approved oral health services as defined by the West Virginia State Board of Dental Examiners and the WVU School of Dentistry.

- d. Perform to the level of laboratory competency those legally approved oral health services (beyond the scope of the West Virginia practice act) stipulated in the practice acts of other states, districts, or territories of the United States.
  - e. Coordinate and administer oral health services for a variety of populations in diverse settings (public health agencies, hospitals, school systems, etc.).
  - f. Function collaboratively with community leaders, health care professionals, and lay persons to manage the oral health needs of rural West Virginia.
  - g. Provide didactic and clinical instruction in allied dental education programs.
  - h. Pursue professional development through self-study, continuing education, research, and advanced studies at the master's and doctoral levels.
2. Recruit, admit, and retain students with the potential to succeed within the dental hygiene program.
  3. Create an environment conducive to faculty promotion, retention, and satisfaction.

## Admission Requirements

Applications and reference forms may be obtained from the Division of Dental Hygiene, P.O. Box 9425, West Virginia University, Morgantown, WV 26506-9425, or to the Office of Admissions, Health Sciences Center, P.O. Box 9815, West Virginia University, Morgantown, WV 26506-9815. As soon as possible in the year preceding the year the student plans to enter the program, he or she should apply and complete the aptitude tests. Forms for the following year are available online. The deadline for applications is April 1.

If a student has no previous study in higher education, he or she must apply for admission as a freshman at WVU. A diploma from an accredited high school or preparatory school must be submitted, and we expect the student to have these courses listed on his or her high school transcript:

English—4 units	Algebra—2 units	Plane geometry—1 unit
Biology—1 unit	Chemistry—1 unit	

We pay particular attention to scholastic achievement in science courses and recommend taking additional science courses beyond the requirement for entrance. We also expect applicants to rank in the upper half of their graduating class. Physical strength with the ability to sit and stand as required, fine precision bilateral manipulative hand/motor skills, adequate visual acuity, eye/hand/foot coordination, and emotional stability are essential characteristics for individuals who wish to enter and continue in the dental hygiene program. They must meet other medical qualifications as required. Reasonable accommodation will be considered for students with special needs.

We require that all students take the American College Testing Program examination or the Scholastic Aptitude Test. The Dental Hygiene Admissions Committee reviews all applications and may require an on-campus personal interview. If the committee requests an interview, they will send the prospective student a letter stating the date, time, and place of the interview. Competition for admission to the program is intense and preference is given to West Virginia residents.

## Degree Completion Program

Registered dental hygienists can be admitted directly to the Division of Dental Hygiene as a full-time or part-time student. To be eligible for the degree completion program, students must have a certificate or associate's degree from an accredited dental hygiene program. Lower-division credits may be transferred (see "Dental Hygiene Suggested Curriculum"). Acceptance and placement in the program depends upon the applicant's academic record and upon the number of spaces available.

When applying to the program complete records of previous study must be included. In addition to an official transcript mailed to us by the registrar of all previous schools, catalog descriptions of the courses taken must be included. If currently enrolled in a certificate or associate's degree program, the applicant must include the program of study. The applicant is responsible for the submission of complete records.

The degree completion program can be entered twice a year. Applications can be obtained after September 1 of the year preceding application to the program.

## Requirements

To summarize the admission process for the degree completion program, applicants must:

- Complete the accredited certificate/associate's degree program in which currently enrolled or offer proof of a previously completed program.
- Present at least a 2.5 grade point average for all college work attempted. If an applicant's grade point average is below our minimum, the Dental Hygiene Admissions Committee can be petitioned for special consideration.
- Successfully complete the Dental Hygiene National Board Examination and submit the score.

- Submit two letters of reference, one from the director of the applicant's previous program and one from a clinical instructor. If an applicant has professional experience, a letter from an employer for either of the above may be substituted.

The Admissions Committee may ask applicants to come for a personal interview before they make a final decision on your application.

## Dental Hygiene Academic Policies

At the end of every semester, the Dental Hygiene Committee on Academic Standards reviews the status of every student in the program. The committee recommends promotion, probation, or dismissal to the dean of the School of Dentistry.

If students fulfill all course requirements, meet all professional standards, and have the necessary grade point averages, promotion is unconditional.

1. Students must maintain cumulative and dental hygiene/science grade point averages of 2.25 or better. The dental hygiene/science average is based on grades earned in these courses or their equivalents:
  - Anatomy 205, 206, and 309
  - Biology 102 and 104
  - Chemistry 111 and 112
  - Microbiology 200
  - Pathology 301 and 302
  - Pharmacology and Toxicology 260
  - Physiology 241
  - Nutrition 171
  - All Dental Hygiene courses
2. A grade of F in a dental hygiene/science course or failure to attain a 2.25 cumulative or dental hygiene/science GPA in any semester will result in placing a student on probation.
3. Students on probation who do not raise their cumulative or dental hygiene/science GPA to 2.25 or better the following semester may be dismissed from the dental hygiene program.
4. A student who receives a grade of D, F, or WU in a required dental hygiene/science course must repeat that course. These courses may only be repeated once. Failure to earn a grade of C or better will result in dismissal from the dental hygiene program.
5. A student may repeat only two dental hygiene/science courses throughout the dental hygiene curriculum. A third D or F will require the student to repeat the year as a full-time student. All dental hygiene courses required in that year of the curriculum must be repeated. Four or more grades of D or F will result in dismissal from the program.
6. Prior to entrance into clinic a student must pass all dental hygiene/science courses (with exception of pathology) required in the first two years of the curriculum.
7. Dental hygiene/science pre-requisite courses in which students earn a grade of D, F, or WU must be repeated prior to the student's progression to the next course in that sequence and at the discretion of the Academic Standards Committee, may result in repeating the year.
8. The Division of Dental Hygiene reserves the right to dismiss, require remedial work, or withhold the opportunity to take one or more licensing exams. This policy would affect any student who may have met formal curriculum requirements, but who lacks the professional skills and/or behavior and conduct considered necessary for the baccalaureate degree in dental hygiene.
9. Students recommended for dismissal have the opportunity to appeal in writing to the Academic Standards Committee within five working days of receipt of the written notice and may be asked to meet in person with the recommending committee. (See "Academic Sanctions: Procedures and Appeals" in the *WVU Student Handbook*.)

The dental hygiene/science average is based on grades earned in these courses or their equivalents: Anatomy 205, 206, and 309; Biology 102 and 104; Chemistry 111 and 112; Dentistry 300; Microbiology 200; Pathology 301 and 302; Pharmacology and Toxicology 260; Physiology 241; Nutrition 171; and all dental hygiene courses.

The Division of Dental Hygiene reserves the right to dismiss or require remedial work of any student who does not perform at a level of satisfactory for patient care.

### First Year

	Hrs.
ORIN 101.....	3
English 101.....	3
*COMM 100/102 or 104.....	3
MATH 126.....	3
CHEM 111.....	4
*DTHY 100 <i>Health Care Team</i> .....	1
*DTHY 185 <i>Head and Neck Anat.</i> .....	2
<b>Total</b> .....	<b>17</b>

Summer I	Hrs.
ANAT 205 Web.....	3
<b>Total</b> .....	<b>3</b>

### Second Year

First Semester	Hrs.
ANAT 206.....	1
*SOCA 101.....	3
DTHY 205 <i>Theory and Pract. of Prevent.</i> .....	2
MICB 200.....	3
DTHY 210.....	2
PSYC 241.....	3
*GEC REQ (# 3, 5, 8, 9).....	3
<b>Total</b> .....	<b>17</b>

Summer I	Hrs.
PHAR 260 Web.....	3
<b>Total</b> .....	<b>3</b>

### Third Year

First Semester	Hrs.
DTHY 363 <i>Periodontics</i> .....	1
PATH 300 <i>MTEC</i> .....	3
*GEC REQ (3, 5, 8, 9).....	3
DTHY 350 <i>Public Health</i> .....	2
DTHY 360 <i>Dental Materials</i> .....	3
DTHY 370 <i>Clinical Methods</i> .....	2
DTHY 372 <i>Clinical - DH</i> .....	2
DTHY 366 <i>Dental Literature</i> .....	1
<b>Total</b> .....	<b>17</b>

Summer I	Hrs.
DTHY 491 <i>Rural Health</i> .....	3
<b>Total</b> .....	<b>3</b>

### Fourth Year

First Semester	Hrs.
DTHY 478 <i>Clinic Teach. Methods</i> .....	1
DTHY 405 <i>Clinic - DH</i> .....	4
DTHY 402 <i>DH Practice</i> .....	2
DH 445 <i>Clinical Pharm</i> .....	1
*GEC Req. (# 3, 5, 8, 9).....	3
DTHY Elective (490, 491, 493).....	1
DTHY 450 <i>Dental Health Ed.</i> .....	2
<b>Total</b> .....	<b>14</b>

Second Semester	Hrs.
BIOL 102.....	3
BIOL 104.....	1
CHEM 112.....	4
HN&F 171 <i>Nutrition</i> .....	3
*PSYCH 101.....	3
*DTHY 186 <i>Dental Anatomy 2</i> .....	2
*DTHY101 <i>Intro. to Dent. Hyg. 1</i> .....	1
<b>Total</b> .....	<b>17</b>

Second Semester	Hrs.
PSIO 241.....	4
NBAN 309 <i>Histology</i> .....	2
*GEC Req. (# 3, 5, 8, 9).....	3
DTHY 225 <i>Dent. Hy. Technics</i> .....	4
ENGL 102.....	3
DTHY 220 <i>Dent. Nrsng. Technics</i> .....	2
DTHY 211 ( <i>Dental Radiology</i> ).....	1
<b>Total</b> .....	<b>19</b>

Second Semester	Hrs.
DTHY 364 <i>Periodontics</i> .....	2
DTHY 378 <i>Didactic Teach Mthds.</i> .....	2
PATH 302.....	3
DTHY 361 <i>Expanded Functions</i> .....	2
DENT 300 <i>Anesthesiology</i> .....	1
DTHY 351 <i>Dental Health Ed.</i> .....	3
DTHY 374 <i>Clinical - DH</i> .....	3
<b>Total</b> .....	<b>16</b>

Second Semester	Hrs.
DTHY 406 <i>Clinic - DH</i> .....	3-4
DTHY 407 <i>Clinical Methods</i> .....	2
DTHY 451 <i>Dent. Health Ed.</i> .....	3
DTHY 440 <i>Clinical/Didactic Seminar</i> .....	1
DTHY Elective (490, 491, 493).....	3
*GEC Req. (# 3, 5, 8, 9).....	1
<b>Total</b> .....	<b>12-13</b>

## Advanced Education Programs

The Division of Dental Hygiene and the Departments of Endodontics, Orthodontics, and Restorative Dentistry offer programs of advanced study leading to the degree of master of science. The department of oral and maxillofacial surgery offers one four-year residency. Three general practice and two advanced education in general dentistry residencies are also offered. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., may be obtained from the Office of the Associate Dean for Academic and Postdoctoral Affairs, WVU School of Dentistry, P.O. Box 9402, Morgantown, WV 26506.

## Dental Hygiene

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1188 Health Sciences North  
<http://www.hsc.wvu.edu/sod/>

### Degree Offered *Master of Science*

The School of Dentistry and its Division of Dental Hygiene offer a program of advanced study leading to the degree of master of science. This program requires a minimum of 36 semester hours through full-time or part-time enrollment in the School of Dentistry. It is designed to qualify dental hygienists for careers in teaching, administration, research, and management.

Options for concurrent master's degrees in the areas of community medicine or public administration are also available.

Inquiries concerning this program should be directed to the associate dean for Academic Affairs, School of Dentistry. Applications should be filed by July 1 for fall admission and by October 15 for spring enrollment.

### Admission Requirements

The program's admission requirements are as follows:

- Meet WVU requirements for admission to graduate study.
- Applicants who do not meet the minimum requirements for admission must gain provisional acceptance into the program. All provisions of admission must be met no later than completion of the 18<sup>th</sup> credit hour to be reclassified as a regular student. A student who fails to meet the provisions of admission or who fails to meet the required GPA will be suspended.
- Have a baccalaureate degree in dental hygiene from an accredited dental hygiene program or a baccalaureate degree in another field of study from an approved institution of higher education while holding a certificate or associate's degree in dental hygiene from a program fully accredited by the American Dental Association Commission on Dental Accreditation.
- Evidence of scholastic and clinical achievement to indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade point average of 2.75 or above on a 4.0 scale on all college work attempted is required.
- Completion of the Graduate Record Examination (GRE) general aptitude test with an acceptable score.
- Submission of all information requested in the graduate application to the Office of the Associate Dean for Academic Affairs.

### Degree Requirements

For the master of science degree, the following requirements must be met:

- Complete a minimum of 36 semester credit hours: 25 required credit hours and 11 credit hours in an elective area(s) of dental hygiene specialization. Two elective areas of specialization are offered: teaching/administration and special patient care. The student chooses one area of study. Courses within these specializations are taught by a number of schools or colleges within the University. An individualized program will be devised for each student which includes a maximum of six hours in research leading to an acceptable thesis. Oral defense of the thesis is required.
- Provision of clinical patient care at least one semester and student teaching in the undergraduate clinic a minimum of one semester.

### GPA

In order to earn a master's degree in dental hygiene, students must also meet the following:

- Achievement of a 3.0 GPA or an overall academic average of at least a B in all work attempted in the master's program. A grade of C or below in one course will require a faculty review of the student's progress. A second C or below will result in dismissal from the program. A student may repeat only one course one time to bring the GPA up to the 3.0 requirement.
- Removal of all conditions, deficiencies, and incomplete grades must be removed from the student's transcript. Credit hours for courses with a grade lower than C do not count toward degree requirements.

<b>M.S. Curriculum</b>	<b>Hrs.</b>
EDP 610 <i>Test and Measurement</i> .....	3
EDP 613 <i>Statistics</i> .....	3
DTHY 678 <i>Teaching Methods</i> .....	2
DTHY 679 <i>Clinical Instruction and Evaluation</i> .....	2
DTHY 680 <i>Critical Issues in Health Care</i> .....	3
DTHY 681 <i>Expanded Functions</i> .....	3
DENT 691B <i>Computer Applications in Dentistry</i> .....	2
DTHY 697 <i>Research (Thesis)</i> .....	6
DENT 791 <i>Research Methods</i> .....	1
<b>Total</b> .....	<b>25</b>
Elective area(s) of dental hygiene specialization.....	11
<i>Dental Hygiene</i> 691 and <i>Dentistry</i> 791 courses and	
Courses taught by the school/college of:	
Business and Economics	
Human Resources and Education	
Medicine	
Multidisciplinary Studies	
<b>Total</b> .....	<b>36</b>

## Endodontics

C. Russell Jackson, D.D.S., M.S., Chair  
1067 Health Sciences North  
<http://www.hsc.wvu.edu/sod>

## Degree Offered

### *Master of Science*

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of master of science. The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of Academic and Postdoctoral Affairs. Applicants will be processed in the School of Dentistry. Applicants approved for admission to the program will be notified soon after interviews are completed.

## Admission Requirements

The program's admission requirements are as follows:

- Must have passed the National Dental Board Examination—Part 1 and Part 2.
- Must have earned a DMD or DDS degree.
- Must be a graduate of an accredited US or Canadian Dental School.
- Must possess West Virginia state dental license.
- Must display evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade point average of 3.0 is required.
- Must apply to the program through the Postdoctoral Application Support Service (PASS, <http://www.adea.org/pass>) and have all application materials in PASS by September 1. Please see the How To Apply section for more detailed information.

## Degree Requirements

For the master of science degree, the following requirements must be met:

- Fulfillment of University requirements for graduate study.
- Twenty-four months (two academic years and two summer sessions) of consecutive full-time advanced study and clinical training at the School of Dentistry.
- An approved master's thesis based on original research completed during the course of study in an area related to endodontics.
- Must satisfactorily pass a final oral examination.
- Must complete all didactic and clinical work in the required curriculum.
- Must have demonstrated satisfactory clinical competency in endodontics.
- Completion of a minimum of 63 credit hours, including 35 hours of endodontic courses, a minimum of 11 hours of selected basic sciences subjects, six hours teaching practicum and a thesis (11 hours).
- Achievement of a 3.0 GPA or an overall competence in the student's field. A minimum grade of B must be earned in all work attempted in the master's program. A grade of C or below in two courses will require a faculty review of the student's progress. A third C or below will result in suspension from the program.

## **Orthodontics**

Peter Ngan, D.M.D., Chair  
1073 Health Sciences North  
<http://www.hsc.wvu.edu/sod>

### **Degree Offered**

#### ***Master of Science***

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of master of science. The program requires a minimum of 34 months (three academic years and two summers) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the office of the Office of Academic and Postdoctoral Affairs. Applications will be processed in the School of Dentistry. Applicants approved for admission to the program will be notified soon after December 1.

### **Admission Requirements**

The program's admission requirements are as follows:

- Must have passed the National Dental Board Examination—Part I.
- Must have earned a D.M.D./D.D.S. degree, or its equivalent.
- Must be proficient in the English language.
- Must provide the most recent TOEFL score (if you are a foreign applicant).
- Must submit undergraduate transcripts.
- Must display evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade point average of 3.0 is required.
- Must apply to the program through the Postdoctoral Application Support Service (PASS, <http://www.adea.org/pass>) and have all application materials in PASS by September 1. Each applicant must also have a MATCH number from National Matching Services (<http://www.natmatch.com>). Please see the How To Apply section for more detailed information.

### **Degree Requirements**

For the master of science degree, the following requirements must be met:

- Fulfillment of University requirements for graduate study.
- Twenty-four months (two academic years and two summer sessions) of consecutive full-time advanced study and clinical training at the School of Dentistry.
- An approved master's thesis based on original research completed during the course of study in an area related to orthodontics.
- Must satisfactorily pass a final oral examination.
- Must complete all didactic and clinical work in the required curriculum.
- Must have demonstrated satisfactory clinical competency in orthodontics.
- Completion of a minimum of 63 credit hours, including 35 hours of endodontic courses, a minimum of 11 hours of selected basic sciences subjects, six hours teaching practicum and a thesis (11 hours).
- Achievement of a 3.0 GPA or an overall competence in the student's field. A minimum grade of B must be earned in all work attempted in the master's program. A grade of C or below in two courses will require a faculty review of the student's progress. A third C or below will result in suspension from the program.

## **Prosthodontics**

Mark W. Richards, D.D.S., M.Ed., F.A.C.P., Director  
1199B Health Sciences North  
<http://www.hsc.wvu.edu/sod>

### **Degree Offered**

#### ***Master of Science***

The School of Dentistry and its Department of Restorative Dentistry offers a three-year program of advanced study and clinical training in the dental specialty of prosthodontics. The program requires a minimum of 33 months (three academic years and two summers) leading to a certificate in prosthodontics and a master of science degree. The purpose of this program is to train well-qualified dentists in all aspects of prosthodontics and is designed to qualify them for careers in prosthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of Academic and Postdoctoral Affairs. Applications will be processed in the School of Dentistry. Applicants approved for admission to the program will be notified soon after interviews are completed.

## **Admission Requirements**

The program's admission requirements are as follows:

- Must have passed National Dental Board Examination—Part I.
- Must have earned a D.M.D./D.D.S. degree, or its equivalent.
- May be considered for admission if graduated from non-ADA accredited (international) dental school.
- Must be proficient in the English language.
- Must provide the most recent TOEFL score (if you are a foreign applicant).
- Must display evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade point average of 3.0 is required.
- Must apply to the program through the Postdoctoral Application Support Service (PASS, <http://www.adea.org/pass>) and have all application materials in PASS by October 1. See the How To Apply section for more detailed information.

## **Degree Requirements**

For the master of science degree the following requirements must be met:

- Fulfillment of University requirements for graduate study.
- Thirty-three months (three academic years and two summer sessions) of consecutive full-time advanced study and clinical training at the School of Dentistry.
- An approved master's thesis based on original research completed during the course of study in an area related to prosthodontics.
- Must satisfactorily pass a final oral examination.
- Must complete all didactic and clinical work in the required curriculum.
- Must have demonstrated satisfactory clinical competency in this field.
- Completion of a minimum of 77 credit hours. This includes 49 credit hours of prosthodontic courses, a minimum of 13 credit hours of selected basic science subjects, two hours of teaching practicum, and 13 credit hours for completion of a master's thesis.
- Achievement of a 3.0 GPA or an overall competence in the student's field. A minimum grade of B must be earned in all work attempted in the master's program. A grade of C or below in two courses will require a faculty review of the student's progress. A third C or below will result in suspension from the program.

## **Doctor of Dental Surgery**

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Men and women entering the oral health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians, although outstanding nonresident applicants are considered. Residency status is determined by the office of Admissions and Records in accordance with Policy Bulletin No. 34. Nonresident applicants should have a grade point average of 3.5 or above and an average score on the academic and PAT sections of the Dental Admission Test of at least 17. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

## **Admission Requirements**

Admission to the WVU School of Dentistry Doctor of Dental Surgery (D.D.S.) program is contingent upon satisfactory completion of all admission requirements, appropriate completion of all application instructions, submission of all transcripts from each college attended, a personal interview, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding initial enrollment).

Application for admission in the fall of the year the applicant desires enrollment should be made upon completion of the preceding school year. A candidate for the D.D.S. degree must have abilities and skills of five varieties including observation; communication; motor; intellectual; conceptual; integrative and quantitative; and behavioral and social. Technological compensation can be made for some disabilities in certain of these areas, but a candidate should be able to perform in a reasonably independent manner. For further details consult the WVU School of Dentistry Technical Standards Document available in the School of Dentistry Office of Dental Admissions.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts from an accredited U.S. college. To be considered applicants must have completed at least 90 semester credit hours at the time of application. The prerequisites for admission include:

<b>Courses</b>	<b>Hrs.</b>
English composition and rhetoric, or equivalent.....	6
Zoology or biology (with laboratory) .....	8
Inorganic chemistry (with laboratory) .....	8
Organic chemistry (with laboratory).....	8
Physics (with laboratory) .....	8

Courses in comparative anatomy, microbiology, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for the study and practice of dentistry.

The School of Dentistry participates in the Associated American Dental Schools Application Service (AADSAS). All applications are processed by that organization. Applications may be submitted online and can be obtained from the AADSAS Web site, <http://www.adea.org>. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of Dentistry, is November 1. This deadline is deliberately and explicitly discussed in the AADSAS instructions; applicants should review them carefully. Because deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.

Each applicant is required to have letters of recommendation sent on their behalf and complete the Dental Admission Test satisfactorily. This test is given at testing centers throughout the U.S. and its possessions, and in Canada. DAT scores must be submitted by November 1 of the year preceding the date of matriculation. Application cards may be obtained by writing to Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Applicants who are West Virginia residents are usually interviewed, although the admissions committee may elect not to interview an unrealistic applicant. Selected non-resident applicants will also be invited for an interview depending on their academic qualifications.

Final acceptance of a student is contingent upon satisfactory completion of all requirements.

### **International Dental Graduate Guidelines**

International dental graduates who wish to apply to the WVU School of Dentistry Doctor of Dental Surgery (D.D.S.) program as a student in the first-year class must:

1. Submit an application through the Associated American Dental Schools Application Service (AADSAS) by November 1.
2. Provide documentation of a D.D.S. or D.M.D. degree (or equivalent) from a non-U.S. dental school.
3. Demonstrate proficiency in the English language as demonstrated by either performance on the Test of English as a Foreign Language (TOEFL), performance on the Test of Spoken English (TSE), or completion of at least six semester credit hours of English at an accredited U.S. college or university.
4. Provide three letters of recommendation by instructors familiar with the applicant, excluding family members.
5. Submit Dental Admission Test (DAT) scores showing at least average competence in the various sub-sections of the test, or provide evidence of having successfully passed the National Board Dental Examination, Part I, within the five years preceding the application.
6. Have all previous coursework from non-U.S. Colleges evaluated by Educational Credential Evaluators (ECE) or the World Educational Services (WES). The applicant is responsible for payment of fees for this service.
7. And, if approved, present to the school for personal interview with the Admissions Committee. Applicants who are selected for an interview must complete the institutional application for admission and submit the associated fees.

The transcripts of international dental graduates who are approved for an interview will be evaluated by the WVU Office of Admissions and Records international admissions unit. West Virginia residents will be given priority consideration.

### **Degree Requirements**

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Governors for approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they fully meet the following conditions:

- Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.
- Shall have completed the prescribed curriculum for each of the academic sessions.
- Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.
- Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the president of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

## Curriculum

The basic required courses in the curriculum are presented throughout eight semesters and three summer sessions. During this time, all students are enrolled in courses designed primarily to prepare them to be competent in the general practice of dentistry. Throughout the program, overall student progress is continually monitored by the Academic Standards Committee. Students must remain full-time and must satisfactorily complete all courses for which they have registered. Additional requirements include participation in mock board examinations and a minimum of six weeks of remote-site training by fourth-year students.

## Promotion

At the end of each grading period (i.e., each academic semester or summer session) all students will have their individual progress reviewed by the Academic Standards Committee convened for their class. The progress of each student in the curriculum is governed by minimum acceptable performance standards upon which the committee bases its decisions.

The standards consist of three categories: scholastic performance, clinic utilization, and professional development. Scholastic performance requires that each student must earn a specified grade point average to be promoted to the succeeding year. Clinic utilization requires that each student must utilize a specified percentage of available clinic time to demonstrate steady progress toward attainment of clinical competency. Professional development is an important component of the study of dentistry. The criteria for determining this development are based on the student's personal behavior and patient management.

These performance standards are explained in detail in the document entitled *WVU School of Dentistry Academic and Professional Standards*. All first-year students are presented this document prior to entering school and are required to acknowledge by their signature that they have read and accepted the conditions set by the material contained therein. At the completion of each academic term, following the Committee on Academic Standards meetings, the status of each student is reported to the dean. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat the year, or be suspended or dismissed from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the Committee on Academic Standards and the dean.

## School of Dentistry Course Schedule

First-Year Didactic Courses	Hrs.	Sem. 1	Sem. 2	Summer
700 <i>Anesthesiology</i>	1		x	
701 <i>Art and Science of Preventive Dentistry</i>	2	x		
703 <i>Introduction to Patient Care</i>	3			x
704 <i>Operative Dentistry</i>	4		x	
705 <i>Biochemistry/Nutrition</i>	5		x	
710 <i>Dental Anatomy and Occlusion</i>	4	x		
711 <i>Periodontics</i>	2		x	
712 <i>Dental Materials</i>	3	x		
715 <i>Community Health</i>	2		x	
718 <i>Oral Histology/Embryology</i>	6		x	
719 <i>Pediatric Dentistry</i>	1		x	
722 <i>Operative Dentistry</i>	4			x
724 <i>Gross Anatomy</i>	7	x		
731 <i>Occlusion</i>	2		x	
734 <i>Removable Prosthodontics</i>	6			x
743 <i>Physiology</i>	4	x		
745 <i>Orthodontics</i>	1			x

<b>Second-Year Didactic Courses</b>	<b>Hrs.</b>	<b>Sem. 1</b>	<b>Sem. 2</b>	<b>Summer</b>
702 Microbiology	5	x		
707 Introduction to Clinical Dentistry	2	x	x	
721 Endodontics	2		x	
722 Operative Dentistry (cont.)	4	x		
725 Dental Practice Management	1			x
726 RPD Design	7		x	x
727 Radiology	1	x		
728 General Pathology	5		x	
729 Operative Dentistry	2	x		
731 Occlusion (cont.)	2			x
734 Removable Prosthodontics (cont.)	6	x		
735 Pediatric Dentistry	1	x		
736 Fixed Prosthodontics	8	x	x	
737 Introduction to Treatment Planning	1			x
738 Oral Pathology	3		x	
739 Oral and Maxillofacial Surgery	1		x	
740 Periodontics	1			x
744 Orthodontics	1		x	
746 Orthodontics	1			x
760 Pharmacology	5	x		
766 Pediatric Dentistry	2		x	
770 Oral Radiology	1			x
774 Principles of Medicine	2		x	
775 Dental Practice Management	1			x
776 Removable Prosthodontics	1			x
777 Periodontics	1			x
780 Endodontics	1			x
783 Operative Dentistry	1			x
784 Oral Surgery	1			x
786 Pediatric Dentistry	1			x
787 Oral Diagnosis	1			x
789 Fixed Prosthodontics	1			x

**Third-Year Didactic Courses**

730 Community Dentistry	2		x	
747 Hospital Dentistry	1		x	
751 Craniomandibular Occlusion	1		x	
752 Community Dentistry (Research)	2	x	x	
753 Oral Pathology	2	x		
754 Implantology	2	x		
759 Oral Surgery	2	x	x	
761 Pediatric Dentistry	1	x		
763 Periodontics	2	x	x	
765 Orthodontics	1		x	
771 Dental Practice Management	2			x
772 Case-Based Treatment Planning	1			x
773 Operative Dentistry (Composites)	1	x		
778 Law and Ethics in Dentistry	2	x		

**Third-Year Clinical Courses**

770 Oral Radiology	1-6	x	x	x
775 Dental Practice Management	1-6	x	x	x
776 Removable Prosthodontics	1-6	x	x	x
777 Periodontics	1-6	x	x	x
780 Endodontics	1-6	x	x	x
783 Operative Dentistry	1-6	x	x	x
784 Oral Surgery	1-6	x	x	x
785 Orthodontics	1-6	x	x	x
786 Pediatric Dentistry	1-6	x	x	x
787 Clinical Oral Diagnosis	1-6	x	x	x
789 Fixed Prosthodontics	1-6	x	x	x

<b>Fourth-Year Didactic Courses</b>	<b>Hrs.</b>	<b>Sem. 1</b>	<b>Sem. 2</b>	<b>Summer</b>
755 Oral Pathology	1	x		
758 Senior Seminar	2	x	x	
767 Community Dentistry	1	x	x	
772 Case-Based Treatment Planning	1	x	x	
<b>Fourth-Year Clinical Courses</b>				
770 Clinical Oral Radiology	1-6	x	x	
775 Dental Practice Management	1-6	x	x	
776 Removable Prosthodontics	1-6	x	x	
777 Periodontics	1-6	x	x	
780 Endodontics	1-6	x	x	
783 Operative Dentistry	1-6	x	x	
784 Oral Surgery	1-6	x	x	
785 Orthodontics	1-6	x	x	
786 Pediatric Dentistry	1-6	x	x	
787 Clinical Oral Diagnosis	1-6	x	x	
789 Fixed Prosthodontics	1-6	x	x	
790 Teaching Practicum	1	x	x	
788 Clinic Completion	1-15	x	x	x

# School of Medicine

John E. Prescott, M.D., Dean

Thomas M. Saba, Ph.D., Associate Vice President for Research and Graduate Studies and Associate Dean, Graduate Studies

Kevin A. Halbritter, M.D., Associate Dean, Hospital Services

James P. Griffith, M.D., Associate Dean, Student Services, Charleston Division

Norman D. Ferrari, M.D., Senior Associate Dean, Medical Education

Timothy Palencik, Associate Dean, Finance

Fred L. Minnear, Ph.D., Assistant Dean, Graduate Studies

MaryBeth Mandich, Ph.D., Associate Dean for Professional and Undergraduate Programs

James M. Shumway, Ph.D., Associate Dean, Medical Education

James M. Stevenson, M.D., Associate Dean, Continuing Medical Education

G. Anne Cather, M.D., Associate Dean, Student Services and Student Professional Development

C.H. Mitch Jacques, M.D., Dean, Eastern Division and Associate Vice President

Rosemarie Cannarella, M.D., Assistant Dean for Student Services, Eastern Division

Clark Hansbarger, M.D., Associate Vice President, Dean, Charleston Division

Konrad C. Nau, M.D., Associate Dean, Eastern Division

Jeffrey Neely, M.D., Associate Dean, Clinical Services

Kathleen C. Bors, M.D., Assistant Dean, Student Services, Charleston Division

Ann Chinnis, M.D., Associate Dean, Clinical Informatics

Barbara Ducatman, M.D., Associate Dean, Faculty Services

David Wilks, M.D., Assistant Dean, Medical Education Technology

Maria Kolar, M.D., Associate Dean, Veterans Affairs

James O'Donnell, Ph.D., Assistant Dean, Research

Jamal Mustafa, Ph.D., Assistant Dean, Research

Leslie Miele, Chief Administrative Officer

<http://www.hsc.wvu.edu/som>

## Degrees Offered

*M.D., Doctor of Medicine*

*M.D./Ph.D., Joint Doctor of Medicine and Doctor of Philosophy*

*Ph.D. in Biochemistry and Molecular Biology*

*Ph.D. in Cancer Cell Biology*

*Ph.D. in Cellular and Integrative Physiology*

*Ph.D. in Exercise Physiology*

*Ph.D. in Immunology and Microbial Pathogenesis*

*Ph.D. in Neuroscience*

*Ph.D. Pharmaceutical and Pharmacological Sciences*

*Ph.D. Public Health Sciences*

*M.H.S. in Pathologists' Assistant*

*B.S., M.S., Ph.D. Exercise Physiology*

*M.S. in School Health Education*

*M.O.T. Master of Occupational Therapy*

*D.P.T. Doctor of Physical Therapy*

*M.D./M.P.H. Doctor of Medicine and Master of Public Health*

*B.S. in Medical Technology*

*M.S. Biomedical Sciences*

## Introduction

The West Virginia University School of Medicine shares outstanding facilities in the Health Sciences Center with the other health-related professional schools of the University. The Ruby Memorial Hospital offers sophisticated medical technology, including magnetic resonance imagery, lithotripsy, and laser surgery. The Ruby Memorial Hospital also houses the Jon Michael Moore Trauma Center and the WVU Children's Hospital. The Chestnut Ridge Psychiatric Hospital treats the entire spectrum of psychiatric and behavioral problems. The Mary Babb Randolph Cancer Center provides a facility totally dedicated to the diagnosis and treatment of cancer. The Mountainview Regional Rehabilitation Hospital offer students the opportunity to investigate rehabilitative and physical medicine. The Clark K. Sleeth Family Medicine Center opened new facilities in 1999. The Department of Human Performance and Applied Exercise Sciences incorporates exercise physiology, physical therapy, and occupational therapy.

Additionally, the Department of Community Medicine has graduate programs in public health (M.P.H.), the school of health education (M.S.). These programs complement all of the other existing programs in the other health professions schools (dentistry, nursing, and pharmacy). The biomedical sciences graduate programs reside in the School of Medicine, as well as the School of Pharmacy, and

offer graduate training in seven programs: biochemistry and molecular biology, cancer cell biology, cellular and integrative physiology, exercise physiology, immunology and microbial pathogenesis, neuroscience, and pharmaceutical and pharmacological sciences. Students enter the biomedical sciences graduate programs undifferentiated. They take a common core curriculum the first year and self-select into their specialty areas in year two. The Ph.D. program in public health sciences also resides in the School of Medicine. Students enter a common core curriculum in the first year and self-select into one of two tracks—social and behavioral sciences and population epidemiology and biostatistics.

### Departments

Anesthesiology  
Behavioral Medicine and Psychiatry  
Biochemistry  
Community Medicine  
Emergency Medicine  
Family Medicine  
Human Performance and Applied Exercise Science  
Medicine  
Microbiology, Immunology, and Cell Biology  
Neurobiology and Anatomy  
Neurology  
Neurosurgery  
Obstetrics and Gynecology  
Ophthalmology  
Orthopedic Surgery  
Otolaryngology  
Pathology  
Pediatrics  
Physiology and Pharmacology  
Radiology  
Surgery

### Committees

Academic Standards  
Admissions Committee, M.D. Degree  
Admissions Committee/Graduate Biomedical Sciences  
Admissions Committee/Medical Technology  
Admissions Committee/Pathologists' Assistant  
Admissions Committee/Occupational Therapy  
Admissions Committee/Physical Therapy  
Continuing Medical Education  
Curriculum Committee  
Distinguished Teacher Committee  
Executive Faculty  
Faculty Promotion and Tenure  
Graduate Medical Education  
Research Funding Development Grant Committee  
  
Bridge Funding Grant Committee  
Student Leadership  
Van Liere Research Convocation and Faculty  
Research Day  
Women in Health and Science

## Biomedical Sciences Graduate Programs

Fred L. Minnear, Ph.D., Assistant Dean for Graduate Studies, Director,  
M.D./Ph.D. Scholars Program  
fminnear@hsc.wvu.edu  
Albert Berrebi, Ph.D., Chair, Biomedical Sciences Admission Committee  
aberrebi@hsc.wvu.edu  
Claire Noel, Assistant Graduate Director, WVU Health Sciences  
cnoel@hsc.wvu.edu  
Penny Phillips, Staff Assistant, M.D./Ph.D. Scholars Program  
pphillips@hsc.wvu.edu

<http://www.hsc.wvu.edu/som/resoff/gradprograms/phd.asp>

### Chairs

David Wilks, M.D.  
James M. Stevenson, M.D.  
James O'Donnell, Ph.D., (*Interim*)  
Alan Ducatman, M.D.  
Todd Crocco, M.D.  
James G. Arbogast, M.D.  
Mary Beth Mandich, Ph.D.  
James E. Brick, M.D.  
John B. Barnett, Ph.D.  
Richard D. Dey, Ph.D.  
John F. Brick, M.D.  
Julian E. Bailes, M.D.  
Michael Vernon, M.D.  
Judie Charlton, M.D.  
Sanford E. Emery, M.D.  
Stephen J. Wetmore, M.D.  
Barbara Ducatman, M.D.  
Giovanni Piedimonte, M.D.  
Robert L. Goodman, Ph.D.  
Mathias P. Frick, M.D.  
Richard Vaughan, M.D., (*Interim*)

### Chairs

Michelle Nuss, M.D.  
Bruce Freeman, M.D.  
Albert Berrebi, Ph.D.  
Mary Ellen Koenn, M.S.  
Cheryl Germain, M.H.S.  
Donna Colaianni, M.S., O.T.R./L.  
Carol Waggy, P.T., Ph.D.  
James Helsley, M.D.  
Chris Martin, M.D.  
David Deci, M.D.  
Fred Butcher, Ph.D.  
Gregory Konat, Ph.D.  
Norman Ferrari, M.D.  
Jefferson Frisbee, Ph.D.,  
and Jeffrey Coben, M.D.  
Jia Luo, Ph.D.  
G. Anne Cather, M.D.  
  
Paul Gordon, Ph.D.  
Linda Vona-Davis, Ph.D.

## Overview

The WVU Health Sciences Center offers biomedical research training leading to the Ph.D. and M.S. degrees and the joint M.D./Ph.D. degree. Our Ph.D. and M.S. students matriculate into a common, integrated core curriculum including research laboratory rotations. This integrated first year allows students to build competence in key areas of contemporary science, gain exposure to our seven training programs, and network scientifically and socially. In the second semester, students customize their coursework by selecting from an array of program-specific electives. By April of year 1, students have acquired the necessary didactic and research knowledge to make an informed selection of a research advisor and one of our seven graduate training programs. M.D./Ph.D. scholars take the first two years of medical school, do research for three to four years in one of our seven (Ph.D.) training programs in the biomedical sciences or the Ph.D. training program in public health sciences under the guidance of a graduate faculty advisor, then complete the last two years of medical school.

Our seven graduate training programs are: biochemistry and molecular biology; cancer cell biology; cellular and integrative physiology; exercise physiology; immunology and microbial pathogenesis; neuroscience; and pharmaceutical and pharmacological sciences. The public health sciences program has two tracks—social and behavioral sciences and population epidemiology and biostatistics.

Successful completion of the Ph.D. degree requires a 3.0 GPA, A's, B's, or S's in research, and passage of the qualifying examination, which includes the defense of the research proposal and dissertation defense. A minimum of one first-author manuscript, based on the Ph.D. dissertation research, must be published or in press in a peer-reviewed journal before the formal defense of the dissertation.

The goal of our Ph.D. training programs is to train highly qualified students for academic and scientific careers as research investigators. The program provides the instructional and research background needed to enable doctoral candidates to complete an original Ph.D. project that advances the field and is acceptable for publication in peer-reviewed journals. This doctoral training serves as a foundation for further career development, which usually includes postdoctoral research training.

## Admissions

### *Ph.D. Students*

Applicants to the Ph.D. graduate programs in the biomedical sciences in the Schools of Medicine and Pharmacy apply directly (online application at [http://www.hsc.wvu.edu/som/resoff/students\\_prospective/applicationinfocriteria.asp](http://www.hsc.wvu.edu/som/resoff/students_prospective/applicationinfocriteria.asp).) to the Office of Research and Graduate Education. In addition, official transcripts and an official application for admission must be sent to the WVU Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009.

Applicants must have a bachelor's or equivalent academic degree and excellent GPA and GRE scores. Three letters of recommendation and a personal statement are required. Students are invited in groups of 10–15 for paid, two-day visit/interviews from January through March. Students are admitted as a class by a common graduate admissions committee comprised of the graduate directors of each of our seven Ph.D.-degree granting programs, a senior Ph.D. student from the Graduate Student Organization (GSO), and the assistant dean for Graduate Studies.

Applicants should demonstrate a strong background in the biological sciences, inorganic and organic chemistry, physics, and mathematics through calculus. Courses in biochemistry, cell biology, molecular genetics, and physical chemistry, and experience in research are recommended. Students with demonstrated abilities but lacking some recommended courses should correct these deficiencies in the summer preceding or after enrollment.

The average GPA for our students is 3.5 and the average GRE total is 1150 for verbal and quantitative with a 4.0 in the analytical essay.

### **M.D./Ph.D. Students**

Formal application requires successful application to the School of Medicine through the American Medical College Application Service (AMCAS), followed by a separate application to the director of the M.D./Ph.D. scholars program. M.D./Ph.D. candidates interview with two current M.D./Ph.D. scholars, the director of the scholars program, and selected graduate faculty.

## Financial Aid

All Ph.D. and M.D./Ph.D. students matriculated in the biomedical sciences graduate programs in the WVU Health Sciences Center receive full financial support during their training, provided that they remain in good academic and professional standing, have a 3.0 GPA, and perform with excellence in research. Stipend levels are considered for adjustment approximately every two years. Such support currently includes a \$23,000 annual stipend, full tuition coverage, and student health insurance (hospitalization and disability).

## Ph.D. Undifferentiated First-Year

### Advantages of an undifferentiated first-year:

- Students acquire a fundamental yet in-depth exposure to relevant contemporary science.
- Students have one year to select a specific training program and research advisor.
- Larger number of available graduate faculty to select from for a research advisor.
- Students develop important scientific and social connections.
- Enhances future collaborations among research laboratories.

### In Year 1, students:

- Take an integrated core curriculum that focuses on contemporary science and scientific integrity.
- Take specialized areas of science that align with the research strengths of the graduate faculty.
- Rotate through three active research laboratories supported by federal grants.

**First semester:** *Cellular Structure and Function and Fundamentals of Integrated Systems* are the two major courses. Journal clubs are incorporated and complement the didactic information, emphasizing discussions of scientific articles led by students and facilitated by the faculty. *Biostatistics for the Basic Sciences* provides an introductory background to statistics. Students take *Discussions on Scientific Integrity* that meets weekly, is led by individual faculty, and incorporates small and large group discussions of ethical and moral issues presented as scientific case studies.

**Second semester:** *Molecular Biology*, which also incorporates a journal club, is required of all students. In addition, students help design their own curriculum. Each of the seven graduate programs offers a module taught primarily from the current literature with an emphasis on discussions among students and faculty. Each student, with assistance from the graduate directors, selects two or three of these modules.

**By April of Year 1**, students are provided the necessary didactic and research experiences to make an informed selection of a research advisor and one of the seven graduate training programs.

**In the first summer**, students take *Scientific Writing*. Students attend weekly lectures and complete assignments in two separate writing skills, a scientific journal article, and an NIH pre-doctoral fellowship grant.

## M.D./Ph.D. Scholars Program

The WVU School of Medicine's M.D./Ph.D. Scholars Program prepares students for academic careers that combine the practice and teaching of clinical medicine with laboratory investigation of disease mechanisms. The goal is to train independent investigators who can function in the future as physician-scientists. This joint training program requires at least seven years to complete.

## Medical School, Years One and Two

Students enter the program in July before beginning medical school with an orientation to the various areas of research. Students choose one six-week research rotation before medical school starts in August. In years one and two, trainees take the integrated medical school basic science curriculum. All M.D./Ph.D. trainees participate in monthly research forums. At these forums, students present their research, learn from physician-scientist role models, and discuss academic career opportunities. During the summer of year one, trainees complete a rotation in one additional research laboratory to facilitate their final selection of a specific graduate program and research advisor by April of year two.

## Ph.D. Training

After successful completion of years one and two of the medical curriculum and a passing USMLE Step 1 Examination, students enter the research portion of their Ph.D. training. Research opportunities are numerous and include cell and molecular biology, integrative physiology, immunology, exercise physiology, cardiovascular sciences, receptor biochemistry, bacterial pathogenesis, lung cell biology and environmental exposures, inflammation, molecular genetics, pharmacological sciences, neuroendocrine and reproductive biology, developmental biology, tumor invasion and angiogenesis, cancer cell biology, neurodegenerative disorders and stroke, functional brain imaging and cognitive behavior, learning and memory, as well as population-based outcomes and epidemiology studies relevant to public health. M.D./Ph.D. students can select to conduct research in one of the seven biomedical sciences degree-granting programs or the training program in public health sciences. Before transitioning back to the clinical clerkships, students brush up on their clinical skills by shadowing physicians, conducting physicals, and presenting case studies at the monthly M.D./Ph.D. forums.

## Medical School, Years Three and Four

After the writing and successful defense of the doctoral dissertation, students complete years three and four of medical school in Morgantown.

## Biochemistry and Molecular Biology

Dr. Lisa Salati, Graduate Program Director

lsalati@hsc.wvu.edu

<http://www.hsc.wvu.edu/som/bmp>

### Degrees Offered

*Master of Science*

*Doctor of Philosophy*

*Joint Doctor of Medicine and Doctor of Philosophy*

The disciplines of biochemistry and molecular biology seek to understand biology by exploring the functions of the molecular components of cells. A major goal of this program is to foster your ability for independent thought. To this end, our faculty cultivates an open, collegial relationship with one another and with our students. Close collaboration between scientists, the sharing of ideas, and open inquiry are critical components of our training plan. Our goal is to develop your independence as a scientist.

The hallmarks of graduate training in biochemistry and molecular biology are the emphasis placed on the use of the scientific literature in advanced coursework and on protecting time for laboratory research. In addition, you will have time for professional development through seminar presentation, attendance at national meetings, teaching opportunities, and seminar programs both within the department and throughout the Health Sciences Center.

Faculty research in the program can provide the student with training in multiple basic sciences areas: regulation of gene expression; RNA processing; cell survival mechanisms; intermediary metabolism; regulation of signal transduction by nutrients and metabolites; drug-receptor interactions; nutritional biochemistry; oxidant-induced cellular stress; structure/function relationships of proteins; molecular basis of sensory mechanotransduction in hair cells; molecular genetics of visual and auditory development; G protein-mediated signaling in retina photoreceptors; and genetic basis of age-related macular degeneration.

These research areas provide fundamental knowledge toward both the normal health state and the amelioration of multiple diseases; atherosclerosis; blindness; cancer; deafness; diabetes; and metabolic disorders.

### Doctor of Philosophy

Upon successful completion of the undifferentiated first year, as outlined earlier, students choose a dissertation research advisor, at which time emphasis is placed on research. During the second year, specialized courses in biochemistry are offered as students continue their research projects. During subsequent years, students emphasize independent dissertation research, and a few formal courses may be taken.

Completion of the Ph.D. program is realized when the student successfully presents the research results to both the department and their Graduate Advisory Committee. Typically, four to five years are required to realize this goal.

### Master of Science

The graduate program in biochemistry and molecular biology offers a thesis master's degree. This program involves completion of a master's research project in addition to formal coursework. Students are generally not admitted directly into this program. Two to three years are required to complete the M.S. program.

## Cancer Cell Biology

Dr. Scott Weed, Graduate Program Director

sweed@hsc.wvu.edu

[http://www.hsc.wvu.edu/som/resoff/gradprograms/cancerCellBio\\_main.asp](http://www.hsc.wvu.edu/som/resoff/gradprograms/cancerCellBio_main.asp)

### Degrees Offered

*Master of Science*

*Doctor of Philosophy*

*Joint Doctor of Medicine and Doctor of Philosophy*

Research interests encompass the physiological and pharmacological sciences and cell biology. Current research areas include:

*Cardiovascular function:* physiology and pathophysiology of the microcirculation; vascular cell signaling; microvascular structure and function; endothelial permeability and tissue edema; role of caveolin in angiogenesis and pro-apoptotic function; blood flow regulation to the heart; cardiac pacemaker channels.

*Endocrine control:* neurobiology of food intake and reproduction; neural control of reproduction; insulin resistance and the metabolic syndrome.

*Muscle function:* mechanism of repetitive use injuries

*Neural systems:* mapping human brain regions of sound; audition; neural mechanisms of selective attention; membrane physiology; learning and memory; alzheimer's disease.

*Respiratory function:* pulmonary cell physiology; pulmonary inflammation; occupational lung diseases; asthma; inhalation toxicology.

These research areas incorporate biochemical, immunological, electrophysiological, cellular, and molecular techniques. This interdisciplinary approach creates a variety of career opportunities for the graduating student.

The doctor of philosophy program in cellular and integrative physiology is designed to produce scientists of high quality, capable of conducting independent research and being effective teachers. Students are exposed to all aspects of cellular and integrative physiology and to a variety of related sciences. Our graduates, as a result of this rigorous training, may pursue careers in any area of physiology and can interact creatively with scientists in related fields. The master's program in physiology is an introduction to research for students interested in, but not yet committed to, a research career. Students in this program receive training in the fundamentals of physiology and experience in a research laboratory.

## Qualifying Examination

After successful completion of the second academic year, the students take a two-part qualifying examination. The exam consists of an oral examination covering the major areas of physiology, followed by a written and oral research defense of the student's research proposal. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of doctor of philosophy.

Our graduates obtain excellent postdoctoral research training opportunities in prestigious laboratories and develop productive and satisfying careers in academics, industry, and government. Graduates have become departmental chairs, industrial department heads, university vice presidents, and entrepreneurs.

A number of adjunct faculty from NIOSH (National Institute of Occupational Safety and Health), a CDC facility on the campus, actively participate in the didactic and research training of our Ph.D. students.

## Cellular and Integrative Physiology

Dr. Stan Hileman, Graduate Program Director

shileman@hsc.wvu.edu

<http://www.hsc.wvu.edu/som/resoff/gradprograms/cellularAndIntegPhysio.asp>

## Degrees Offered

*Master of Science*

*Doctor of Philosophy*

*Joint Doctor of Medicine and Doctor of Philosophy*

Research interests encompass the physiological and pharmacological sciences and cell biology. Current research areas include:

*Cardiovascular function:* physiology and pathophysiology of the microcirculation; vascular cell signaling; microvascular structure and function; endothelial permeability and tissue edema; role of caveolin in angiogenesis and pro-apoptotic function; blood flow regulation to the heart; cardiac pacemaker channels.

*Endocrine control:* neurobiology of food intake and reproduction; neural control of reproduction; insulin resistance and the metabolic syndrome.

*Muscle function:* mechanism of repetitive use injuries

*Neural systems:* mapping human brain regions of sound; audition; neural mechanisms of selective attention; membrane physiology; learning and memory; alzheimer's disease.

*Respiratory function:* pulmonary cell physiology; pulmonary inflammation; occupational lung diseases; asthma; inhalation toxicology.

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A number of adjunct faculty from NIOSH (National Institute of Occupational Safety and Health), a CDC facility on the campus, actively participate in the didactic and research training of our Ph.D. students.

## Exercise Physiology

Dr. Stephen E. Alway, Graduate Program Director

salway@hsc.wvu.edu

[http://www.hsc.wvu.edu/som/resoff/gradprograms/exercisePhysio\\_main.asp](http://www.hsc.wvu.edu/som/resoff/gradprograms/exercisePhysio_main.asp)

## Degrees Offered

*Master of Science*

*Doctor of Philosophy*

*Joint Doctor of Medicine and Doctor of Philosophy*

The graduate program in exercise physiology fosters a high degree of collaboration among faculty with interests in clinical medicine and basic research. Current research areas include: cardiovascular health, muscle adaptation and injury, diabetes and endocrinology, coronary blood flow and dysfunction and muscle signaling in strength training and aging.

Our Ph.D. training program is intended to give exceptional students training in basic medical and scientific areas to prepare them for careers as effective and knowledgeable researchers and teachers in the broad field of exercise physiology/kinesiology. Our rigorous training develops the attitudes, habits, and skills that are signature characteristics of competitive, independent scientists.

Ph.D. students are expected to:

- Take an array of courses in exercise physiology, physiology, biochemistry, molecular biology, and pharmacology.
- Conduct independent research, analyze and interpret the data, and defend the findings and conclusions.
- Learn the process of writing and submitting grants.
- Present and discuss their research findings at national and international scientific meetings.
- Develop and improve teaching skills.
- Submit their dissertation research for publication prior to graduation.

The Division of Exercise Physiology actively engages in patient care, including rehabilitation, disease prevention, and risk-factor management, with an emphasis on cardiovascular disease, obesity, and diabetes

## Doctor of Philosophy

The Division of Exercise Physiology offers a program leading to the doctor of philosophy degree (Ph.D.) in the School of Medicine. The program is intended to give exceptional students knowledge in basic medical and scientific areas to prepare them for careers as effective and knowledgeable researchers and teachers in the broad field of exercise physiology/kinesiology. These goals are achieved by several means. Formal coursework in the sub-disciplines of exercise physiology, physiology, biochemistry, molecular biology, pharmacology, and neuroscience provides the student with the opportunity to develop a solid foundation in basic subject matter of medical sciences that can be applied to aspects of exercise and disease. The student's knowledge base is further strengthened by participation in elective courses offered within the division, selected courses offered by other departments within the School of Medicine, and by departments in other colleges and schools of WVU. Research training and experience are provided under the guidance and supervision of the

graduate faculty. The aim is to promote attitudes, habits, skills, and abilities that will enable the student to grow and develop as an independent scientist.

Graduate work involves a program of study and research individually designed to utilize the abilities and strengths of the faculty (e.g., cardiovascular disease, heart disease, aging, and diabetes/obesity) and accommodates the needs of the student within an area of specific interest. The exact content of a program of study for a particular student usually will differ from one student to another. Nevertheless, there are common goals, expectations, policies, and procedures that will be universal for all graduate students. Likewise, there are activities and responsibilities that will be common among all faculty advisors in the Division of Exercise Physiology.

## **Master of Science**

The master of science program in exercise physiology prepares students for careers in adult fitness, hospital or corporate-based wellness programs, or cardiac rehabilitation. Students specialize by completing a 200-hour clinical internship. A two-year thesis track option is also available.

## **Immunology and Microbial Pathogenesis**

Dr. John Barnett, Graduate Program Director

[jbarnett@hsc.wvu.edu](mailto:jbarnett@hsc.wvu.edu)

[http://www.hsc.wvu.edu/som/resoff/gradprograms/ImmunAndMicrobialPath\\_main.asp](http://www.hsc.wvu.edu/som/resoff/gradprograms/ImmunAndMicrobialPath_main.asp)

### **Degrees Offered**

*Master of Science*

*Doctor of Philosophy*

*Joint Doctor of Medicine and Doctor of Philosophy*

Faculty members and students explore diverse areas of inquiry related to the medical implications of microbes and the human body's response to them.

Current research areas include:

- Immunology
- Effects of man-made pesticides and herbicides on the immune system
- Biochemistry of inflammatory cytokines
- Immune response in bacterial and viral diseases
- Regulation of signal transduction in immune responses
- Molecular aspects of cell signaling as it relates to cancer chemotherapy and cell growth
- Peptide and DNA vaccines for contraception
- Microbiology
- Physiology of pathogenic microbes
- Microbial genetics
- Mechanisms of bacterial pathogenesis
- Chemotaxis and motility
- Interactions between microbes and their hosts
- Molecular mimicry and structure-function relationship of bacterial virulence factors
- Microbial biofilms

The major purpose of graduate education in the program is research training. The basic philosophy of the program is that the students acquire a strong foundation in the basic concepts of immunology and microbial pathogenesis, and have flexibility in choosing advanced coursework in their specific areas of interest. A major emphasis of the graduate program is extensive laboratory research in microbiology, immunology, microbial pathogenesis, and cell biology. Each student will complete an original, in-depth research investigation. The overall aim of the program is to produce students capable of designing and doing independent research and teaching.

## **Program Requirements**

Every student must take the required courses in the first year common core curriculum. Once students acquire a strong foundation in the core biomedical concepts, we offer flexibility in choosing advanced coursework in specific areas of interest. The remainder of the coursework is selected by the student and the Advisory Committee from the microbiology and immunology advanced study courses (MICB 791). Enrollment in MICB 796 *Seminar* and MICB 793 *Special Topics* (journal club) is required each semester that the student is in residence. All full-time students in this graduate program are required to participate in teaching at least one semester a year for two years (MICB 790 *Teaching Practicum*).

## **Doctor of Philosophy**

After completion of the first-year, integrated core curriculum, the doctoral student takes additional coursework as determined by the student's Graduate Research Advisory Committee. A minimum of six hours in MICB 791 courses or selected advanced courses from other departments

is required. Where appropriate, coursework in related subjects such as computer science, cell biology, biochemistry, physical chemistry, and statistics is required. MICB 796 *Seminar* is a required course each semester that the student is in residence. The doctor of philosophy program requires a dissertation representing the results of an original research investigation and the passing of a written qualifying and final oral examination. The qualifying examination is given at the end of the first year of study. The final oral examination is given after completion of research and an acceptable dissertation. All full-time students are required to participate in teaching at least one semester a year for two years.

The immunology and microbial pathogenesis graduate program has informal journal clubs in immunology and microbiology. These are designed to help students develop skills in reading, interpreting, and discussing current research articles. All students are expected to participate in one or more journal clubs.

For a description of faculty research interests, guidelines for graduate study in the graduate program of immunology and microbial pathogenesis or additional information, write to the Chairperson, Admissions and Scholarship Committee, Department of Microbiology and Immunology, P.O. Box 9177, West Virginia University, Morgantown, WV 26506-9177, or visit our Web site at <http://www.hsc.wvu.edu/micro/>.

## Master of Science

The master of science program requires 30 hours of coursework, of which at least 20 hours must be in microbiology and immunology. Six hours must be in research (MICB 697). A thesis representing original research and a final oral examination is required.

## Neuroscience

Dr. Albert Berrebi, Graduate Program Director

[aberrebi@hsc.wvu.edu](mailto:aberrebi@hsc.wvu.edu)

[http://www.hsc.wvu.edu/som/resoff/gradprograms/neurosci\\_main.asp](http://www.hsc.wvu.edu/som/resoff/gradprograms/neurosci_main.asp)

## Degrees Offered

*Doctor of Philosophy*

*Joint Doctor of Medicine and Doctor of Philosophy*

The neuroscience graduate program is an interdepartmental program committed to training competent researchers and teachers. Successful completion of degree requirements is based on research and scholarly achievement. Students will have opportunities to experience and acquire the skills needed for successful careers in neuroscience, including critical thinking, problem solving, and leadership. Research experiences include evaluating scientific literature, identifying critical scientific issues, experimental design, grant and manuscript writing, publication of scientific papers, and presentations at national meetings. Students with career interests in teaching will have the opportunity to gain experience in innovative teaching methods and techniques, including problem-based learning, computer-assisted learning, and integrated teaching approaches. The program emphasizes various sub-disciplines of neuroscience, including structural, cellular, systems, molecular, developmental, cognitive and behavioral biology. After completion of core courses, students conduct an original research project culminating in a doctoral (Ph.D.) dissertation.

## Current Research Areas Include

*Sensory neuroscience:* biochemistry of hair cell transduction; optical imaging and single-unit electrophysiology of primate sensory cortex; mechanisms of auditory and visual system development; inhibitory neural circuits in the brain stem and cortex; synaptic development of thalamocortical circuits; molecular genetic control of retinal development and neural patterning; cell biology of G-protein-mediated signal transduction in vertebrate photoreceptors.

*Cognitive neuroscience:* sound recognition, spatial hearing and sensory integration using fMRI; neural basis of vision in health and disease; advanced imaging studies of visual signal processing and cognition.

*Experimental Neuropathology:* blood flow changes during stroke or after brain trauma.

*Homeostasis:* airway innervation and asthma; structural and functional changes in the hypothalamus of seasonal breeders; neurobiological pathways controlling food intake and obesity; plasticity in the amygdala; pharmacogenetics of cytochrome P450 2D6; ethanol neurotoxicity.

*Behavioral Neuroscience:* interdisciplinary research projects in the department include: structure and transcriptional mechanisms controlling neural gene expression; molecular biology and molecular genetics of neural degeneration and regeneration in the central nervous system; developmental neurochemistry and environmental influences on brain development, especially nutrition; neuroanatomy and neurophysiology of somatosensory and auditory systems; structural plasticity of astrocytes and modulation of synaptic contacts in the central nervous system; developmental neurobiology of anxiety disorders; development of synaptic connections in the neocortex; developmental genetics

of behavioral rodent mutants; neural basis of pulmonary diseases, especially asthma and occupational/environmental diseases; mechanisms regulating microcirculation under pathophysiological conditions; functional imaging of the human visual cortex in health and disease.

## **Seminars and Journal Clubs**

Students develop skills in formal presentation, critical thinking, and scientific analysis by participating in departmental seminars and journal clubs.

## **Ph.D. Candidacy**

To be admitted to candidacy for the Ph.D. degree, the student must pass a qualifying examination and present a plan for the dissertation research project for approval by the candidate's Advisory Committee.

## **Ph.D. Dissertation**

To be recommended for the Ph.D. degree, each student must satisfactorily complete a dissertation based on original research and defend the dissertation at an oral examination. Success in the dissertation research is the core of the degree.

## **Pharmaceutical and Pharmacological Sciences**

Dr. Peter Gannett, Graduate Program Director

pgannett@hsc.wvu.edu

[http://www.hsc.wvu.edu/sop/graduate\\_programs/phd\\_specializations.html](http://www.hsc.wvu.edu/sop/graduate_programs/phd_specializations.html)

## **Degrees Offered**

*Master of Science*

*Doctor of Philosophy*

*Joint Doctor of Medicine and Doctor of Philosophy*

The pharmaceutical and pharmacological sciences graduate program has two pathways administratively under the direction of the School of Pharmacy's associate dean for research and graduate programs. The graduate faculty consists of mentors in scientific disciplines from Health Sciences Center departments and NIOSH. The Health Outcomes Research Pathway is housed in the Pharmaceutical System and Policy Department of the School of Pharmacy. The Pharmaceutical and Pharmacological Sciences Pathway administrative center is in the Department of Basic Pharmaceutical Sciences. Application for admission into the Health Outcomes Research Pathway is made through the Department of Pharmaceutical Systems and Policy. Admission into the Pharmaceutical and Pharmacological Sciences Pathway occurs during the first year of the Health Sciences Center undifferentiated program.

For a complete description of the Health Outcomes Research Pathway, see <http://www.hsc.wvu.edu/sop/psp/programs/phd.html>.

## **Pharmaceutical and Pharmacological Sciences Pathway**

For the pharmaceutical and pharmacological graduate program, research interests are complementary to a focus on drug discovery and development. Key areas of research interest and expertise are in:

*Drug discovery science:* in silico drug design; medicinal chemistry; bioanalytical chemistry

*Drug metabolism:* pharmacokinetics; pharmacogenomics; enzyme structure-activity relationships; toxicology mechanisms

*Drug delivery:* formulation; drug transport mechanisms; nanopharmaceutics; polymer-based drug delivery

*Molecular therapeutics:* drug target identification and validation; nucleic acid-based therapeutics; protein-based therapeutics; phosphodiesterase inhibitors

*Pharmacology:* cardiovascular pharmacology; pulmonary pharmacology; neuropharmacology, blood brain barrier

*Toxicology:* drug-induced adverse effects; free radical toxicology and carcinogenesis; pulmonary toxicology; drug interactions

*Translational research:* pre-clinical and clinical testing; cancer nanotechnology; pharmaceutical technology and processes

The Computational Chemistry Molecular Modeling (CCMM) Laboratory is a focal point for drug discovery at WVU.

## Health Outcomes Research Pathway

The Ph.D. pathway in health outcomes research is a degree that focuses on the scientific design, data collection, and analysis of the end results of medical care. It focuses on quality, cost-effectiveness, and the effect of treatment on quality of life in patients. Outcomes research evaluates the effectiveness of health interventions through changes in outcomes such as improvements in patient functional status, satisfaction with care, and mortality. Apart from traditional experimental and quasi-experimental designs, outcomes research methodology embraces epidemiological research designs (such as retrospective or prospective, longitudinal or cross-sectional, case-control or cohort study designs), econometric modeling (decision analysis) or pharmacoeconomic methods (cost-benefit and cost-effectiveness analyses), and survey research methods (such as quality of life measurements and satisfaction with care).

## Goals of the Health Outcomes Research Pathway

To prepare highly qualified graduate students for careers in academia, industry, government, and institutional settings.

To advance research in health outcomes research and pharmacoeconomics, pharmaceutical care provision, and health promotion and disease prevention.

To participate in scholarly research by collaborating on projects with faculty and students within the University and with researchers, administrators, and marketers outside the University.

To provide consultative services to pharmacists, the pharmaceutical industry, government health agencies, and other interested constituents in the areas of faculty and graduate student expertise.

## Requirements for Health Outcomes Research Pathway

The doctor of philosophy degree in health outcomes research requires a minimum of 72 semester credit hours (including those transferred hours from the student's master's work). The 72 hours include a minimum of 60 credits of coursework plus 12 hours of dissertation research. The department's course requirements for the doctoral program include: (a) core courses, (b) elective courses in major and minor areas, (c) one hour of department graduate seminar each semester of the program duration, and (d) dissertation research hours. For a doctoral student to be classified as a Ph.D. candidate, he/she must: (1) have completed all graduate course requirements stipulated in the plan of study, (2) have a minimum of 3.0 GPA, (3) have passed both the written and oral qualifying examinations, and (4) fulfill both teaching and scholarly activities expected of a graduate student in good standing.

After satisfactory completion of oral and written qualifying examinations, the student also needs to complete and present a dissertation research proposal in order to demonstrate his/her ability to conduct independent research. Students with a bachelor degree and those without a research master's degree who are admitted to the program are required to complete a M.S. en route to a Ph.D. Individuals with previous research experience may request to opt out of completing an M.S. by successfully completing a pre-qualifying exam administered by department faculty.

## Requirements for Admission to the Health Outcomes Research Pathway

Students must have either a professional degree in pharmacy (Pharm.D.), medicine (M.D.), or a master's degree in pharmacy administration. Students with a master's degree in related fields such as epidemiology, public health, health care administration, etc. are also encouraged to apply. Students with a master's degree in related fields such as marketing, management, economics, psychology, or sociology with a demonstrated interest or experience in health care may also apply.

Outstanding students with a B.S. in pharmacy or pharmaceutical sciences may be considered for direct admission into the doctoral program.

College transcript with a minimum of a B average (3.0 on a 4.0 scale).

GRE or GMAT scores (International applicants must also take the TOEFL examination and score at least 550 on the paper exam or 213 on the computer-based exam) evaluating potential for graduate school.

Supportive letters of recommendation (at least three); satisfactory personal or telephone interview (whenever possible); statement (one page) of personal goals describing background, academic/research interests, and career objectives; a resume or curriculum vitae listing educational and employment history.

Application deadline is March 1 of each year.

## **Application Process for Health Outcomes Research Pathway**

When applying to the Ph.D. pathway in the Department of Pharmaceutical Systems and Policy at West Virginia University School of Pharmacy you will need to send two separate packets of materials, one to WVU Admissions and one to WVU School of Pharmacy. Please read instructions on the forms carefully before completing them. All materials must be received by the deadline (March 1) for an application to be reviewed.

**First Packet—To be mailed to WVU Admissions and Records**

1. WVU Application (international application for foreign students) for Admission to the graduate school (Mailed or completed online at <http://www.arc.wvu.edu/admissions/applications.html>).
2. A check or money order for the mandatory application fee payable to West Virginia University.
3. One copy of official transcripts (original or certified; minimum of a B average or a 3.0 GPA on a 4.0 scale) in a sealed envelope from each college you have attended. Applicants who have studies in the United States must have the institutions send official transcripts directly to WVU.
4. Original or certified copies of all degrees/diplomas/certificates received in the original language of issue.
5. If necessary, official English translations of the applicant's transcripts and diplomas or certificates.
6. Official GRE Scores and TOEFL scores (minimum of 550 on the paper-based exam and 213 on the computer-based exam) for international students for whom English is not their native language. GRE and TOEFL scores should be sent directly by Educational Testing Service to WVU. If Test of Spoken English (TSE) scores are available, then they may also be submitted. Send the first packet directly to, Office of Graduate Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, West Virginia 26506-6009, U.S.A.

**Second Packet—To be mailed to the WVU School of Pharmacy**

1. Copy of the WVU Application for Admission to the graduate school.
2. One certified copy of official transcripts (minimum of a B average or a 3.0 GPA on a 4.0 scale) from each college you have attended.
3. Certified copies of all degrees/diplomas/certificates received in the original language of issue.
4. If necessary, copies of official English translations of the applicant's transcripts and diplomas or certificates.
5. Copies of official GRE Scores and TOEFL scores (minimum of 550 on the paper-based exam and 213 on the computer-based exam) for international students for whom English is not their native language. If copy of Test of Spoken English (TSE) scores is available they may also be submitted.
6. Statement of personal goals describing your background, academic interests, and career objectives.
7. A resume or curriculum vitae listing educational and employment history.
8. Three letters of recommendation from persons who are in a position to evaluate your potential for graduate school. At least one recommendation must be from a person at the last school you attended for full-time study, unless you have been out of school for five years or longer. Your references should return their recommendations directly to the Department of Pharmaceutical Systems and Policy in sealed envelopes with their signatures over the seals.
9. A checklist listing all materials included in the envelope and names and addresses of references. Send the second packet directly to, Debbie Anderson, Dean's Office, WVU School of Pharmacy, P.O. Box 9500, Medical Center Drive, Robert C. Byrd Health Sciences Center (North), Morgantown, West Virginia 26506, Telephone: 304-293-521, e-mail address: [danderson@hsc.wvu.edu](mailto:danderson@hsc.wvu.edu). Application via the Web is also possible. Please be aware that the two packets of information, as described above, are still required. The online graduate program application is available at: <http://www.arc.wvu.edu/admissions/applications.html>. If you have difficulty accessing the above site or submitting an online application, contact Debbie Anderson at [danderson@hsc.wvu.edu](mailto:danderson@hsc.wvu.edu) or call 304-293-5211 (fax: 304-293-5483)

## **Community Medicine**

### **Educational Programs in Public Health**

Alan M. Ducatman, M.D., MSc, Professor and Chair, Community Medicine

Ian R. H. Rockett, Ph.D., M.P.H., Professor and Associate Chair, Community Medicine and Director of Educational Programs

Robert Pack, Ph.D., M.P.H., Associate Professor, Community Medicine, Director of the Ph.D. Program in Public Health Sciences

Ruth E. Kershner, Ed.D., R.N., Associate Professor, Community Medicine, Coordinator of M.S. in School Health Education

Leah A. Adkins, Educational Programs Senior Program Coordinator

## **Graduate Education Opportunities**

### **Public Health degree programs**

*Master of Public Health*

*Ph.D. in Public Health Sciences*

### **School Health Education degree program**

*Master of Science*

### **Master of Public Health (M.P.H.)**

The field of public health encompasses a number of specific disciplines whose mission is to improve quality of life and health outcomes among all members of a community. Public health strategies typically are implemented at a broad societal and population level; for example, environmental regulations, water quality control, immunization programs, and health education initiatives.

The M.P.H. program seeks students with a strong, genuine commitment to a career in public health. An M.P.H. degree is appropriate for physicians, nurses, nutritionists, and other health care professionals with a strong interest in preventive medicine and community health. We welcome applications from both mid-career professionals and students who have recently completed a bachelor's degree. Physicians may also apply to the occupational medicine residency program, designating the M.P.H. as part of their residency.

### **Program Description**

The future of public health will be shaped by our nation's public health agencies via health assessment, policy development, and public health services. The WVU School of Medicine addresses these core functions of public health through a generalist M.P.H. degree (both on and off-campus) as well as tracks focused on epidemiology and biostatistics, social and behavioral theory, environmental health, and health policy and management all of which are offered by the Department of Community Medicine. The M.P.H. program prepares students to fill decision-making roles in managed care and other integrated delivery systems, the medical products industry, health departments and other governmental agencies, consumer groups, and community-based organizations. This program is accredited by the National Council on Education for Public Health (CEPH).

### **Mission and Goals**

The mission of the M.P.H. program is closely aligned with the educational mission of the WVU School of Medicine. The School of Medicine's mission is to improve the health of West Virginians through the education of health professionals, basic/clinical scientific research and research in rural health care delivery, the provision of continuing professional education, and participation in the provision of direct and supportive health care.

The specific M.P.H. program educational mission includes the following goals:

- Educate students and residents to become competent professionals with integrity and compassion and the potential to become community leaders, innovative educators, and creative researchers.
- Promote lifelong learning skills in students and residents.
- Stimulate interest of students and residents to practice in rural areas of West Virginia.
- Emphasize the importance of prevention and healthy lifestyles for students and medical residents, and also the populations they will serve.
- Maintain the importance of teaching students and residents, and enhance recognition and rewards for teaching performance.
- Create an environment which emphasizes a scholarly approach to curricular implementation and evaluation, while fostering an atmosphere of improvement and excellence.

## **Admission Requirements**

Admissions decisions will be based on an overall assessment of the applicant's demonstrated commitment to public health and her/his educational and professional preparation for the successful completion of the M.P.H. degree program. All aspects of an applicant's record, such as professional experience and career achievements, will be considered. The Admissions Committee reviews applications on a rolling basis. Contact the Department of Community Medicine for current application deadline dates.

## **Applicants to the M.P.H. Program Must**

1. Submit an Application for Graduate Admission to West Virginia University and attach a nonrefundable check for the amount specified on the application form.
2. Submit sealed transcripts of all college coursework to the Graduate Unit, West Virginia University Office of Admissions and Records.
3. Hold a bachelor's degree from an accredited college or university and a minimum grade point average of 2.75 on a 4.0 scale.
4. Submit scores for the General Test of the Graduate Record Examination (GRE). See Web site for acceptance of other test scores.
5. Complete an official M.P.H. Program Application.
6. Complete the TOEFL (Test of English as a Foreign Language) for all international applicants, and for all applicants whose first language is not English. A minimum of 550 on the TOEFL is required.
7. Possess the ability to use computers in public health applications. It is the responsibility of students accepted into the M.P.H. program to become skilled in computer applications.

## **Performance Standards**

### **GPA and grade requirements are as follows:**

1. Students are required to maintain a GPA of at least 3.0 on all work taken as a graduate student while enrolled in community medicine graduate programs. A student must have 3.0 GPA or better in order to graduate from the program.
2. Students admitted with a 2.75 to 2.99 GPA must have attained a 3.0 GPA or above at the end of their first semester or they will be dismissed.
3. Students admitted with a 3.0 GPA must have a minimum 3.0 GPA every semester. If their GPA falls below 3.0 one semester, they will be placed on probation. If the GPA falls below 2.75 they will be suspended.
4. Two grades of C or below while enrolled as a graduate student will result in probation. Three grades of C or below while enrolled as a graduate student will result in suspension.
5. A grade lower than C will not be counted towards satisfying degree requirements grade lower than a C **must** be repeated for all required graduate program courses.
6. A grade of F in any course taken to satisfy degree requirements in a community medicine graduate program will result in automatic program dismissal.
7. Students may refer to the *WVU Student Handbook* for more information: <http://www.arc.wvu.edu/rights.html> and on the CMED Web site: <http://www.hsc.wvu.edu/som/cmед/>.

## **Course of Study for On-Campus M.P.H., including Tracks and Course of Study for Off-Campus M.P.H.**

1. The M.P.H. on-campus degree requires 42 credit hours.
2. Upon matriculation, students will be asked to provisionally select a track. There are five curriculum tracks: biostatistic and epidemiology, environmental health, health policy and management, social and behavioral science (with an option of two concentrations: women's health; and wellenss and health promotion), and the generalist track.
3. Students are required to formally select a track after nine credit hours have been completed. If necessary, new advisors will be assigned.
4. Six core three-credit hour courses are required in addition to an eight-credit hour practicum and a one-credit hour seminar.
5. Students are required to take nine credit hours (three courses) of track-specific courses. (Exception: generalist requires 15 credit hours of electives)
6. Six credit hours of other electives can be selected from a list of suggested courses for the track or from the general list of electives approved by the M.P.H. program.

## **Off-Campus, Web-Based M.P.H. Program**

1. The M.P.H. off campus degree requires 42 hours.
2. Six core three-credit hour courses are required in addition to an eight-credit hour practicum, and a one-credit hour seminar.
3. Fifteen hours of elective coursework are required.

(Note: This can all be completed without coming to campus.)

Since unforeseen circumstances and program implementation might necessitate a change in our curriculum, we encourage prospective and current students to visit the educational programs Web site at: <http://www.hsc.wvu.edu/som/cmcd/> for current requirements.

Information on Department of Community Medicine specializations/certificates (an M.P.H. certificate program in gerontology and a combined M.D./M.P.H. program) is available at <http://www.hsc.wvu.edu/som/cmcd/>.

For more information about the M.P.H. program contact: Leah Adkins, Educational Programs Senior Program Coordinator or Ian Rockett, Ph.D., M.P.H., Professor and Associate Chair, Director of Educational Programs at P.O. Box 9190, WVU School of Medicine, Morgantown WV 26506, phone (304) 293-2502, fax (304) 293-3755, e-mail: [ladkins@hsc.wvu.edu](mailto:ladkins@hsc.wvu.edu).

## **Doctor of Philosophy (Ph.D.) in Public Health Sciences**

The Ph.D. program in public health sciences is a degree for scientist-practitioners in the area of prevention of premature mortality, morbidity, and disability resulting from communicable disease, chronic disease, and injury. This program will feature a common first-year core curriculum that includes intensive training in public health research methods, epidemiology, and biostatistics. The program offers two specialist tracks in distinct areas of public health: social and behavioral sciences, and population epidemiology and biostatistics.

The social and behavioral sciences track will feature public health-specific coursework in social and behavioral theory, qualitative and quantitative public health research methods, social and behavioral risk factor measurement, multivariate statistics, public health needs assessment, intervention design, graduate electives in topical areas, and advanced research.

The population epidemiology and biostatistics track will feature coursework in epidemiology, biostatistics, research design, multivariate data analysis, medical demography, chronic disease epidemiology, secondary data analysis, categorical data analysis, topical graduate electives, and advanced research.

Detailed curricula are available at the Ph.D. program Web site: [http://www.hsc.wvu.edu/som/cmcd/degree\\_programs/phd.asp](http://www.hsc.wvu.edu/som/cmcd/degree_programs/phd.asp).

### **Goals of the Ph.D. Program**

The Ph.D. in public health sciences emphasizes both evidence-based primary prevention of disease and injury, and health promotion research and practice. Program goals are to:

- Train the next generation of public health leaders and produce a self-renewing cadre of teachers, researchers, and practitioners who will help shape and sustain the best public health practices.
- Identify and address public health disparities.
- Improve health and health care in our state, and simultaneously improve the economic competitiveness of the WVU Health Sciences Center, emulating what similar training programs have done in other states.
- Feature trans-disciplinary teaching and research so that trainees of the program will be able to compete for the highest level public health jobs, grants, and research opportunities.
- Create a pool of epidemiologic, behavioral science, demographic, and environmental health talent for developing highly technical enterprises in West Virginia that seek to influence health behavior at the community and policy level.

### **Coursework Summary**

The 116-hour program features a common undifferentiated curriculum for the first year. During this time students can select one of the two tracks in which to matriculate. The first year will feature a seminar series for faculty to introduce their research to students. Students will be matched with a mentor at the end of the summer of the first year.

Key components of the proposed core-integrated first year are a series of courses in epidemiology, scientific integrity and ethics, and research and statistical methodology. Over two semesters and the summer, the first year curriculum is 29 credit hours in duration. Additional years are of similar length.

The program features a common undifferentiated curriculum for the first year. During this time students can elect one of the two tracks in which to matriculate. The first year will feature a seminar series for faculty to introduce their research to students. At the conclusion of the first year's summer semester students will be matched with a mentor. As in any public health doctoral program, key components of the proposed core-integrated first year are a series of courses in epidemiology, scientific integrity and ethics, and research and statistical methodology. In the second year of coursework students will engage in required courses and electives in their topical track area of expertise. The second year features advanced methods and theory with additional research study opportunities. In the third and fourth years, students will begin and complete the dissertation proposal process.

## **Qualifying Examination Summary**

At the conclusion of the second year of coursework, the students will be required to pass a comprehensive qualifying examination after which they may prepare their dissertation proposal. Also, at the conclusion of the second year, students will transition to a funded research lab/group of one of the public health graduate faculty.

The comprehensive exam will be based on both core and content material. A panel of three of the graduate faculty will review and grade the examination. Each will also be reviewed by the educational programs and departmental chairs. Students will only be allowed to take the comprehensive exam twice. If a student fails the exam twice they will be dismissed from the program.

## **Doctoral Dissertation Proposal**

Upon successful completion of the qualifying exam, the student may set a date for the doctoral dissertation proposal defense. The proposal will take the form of a PHS 398 grant proposal including: specific aims, introduction, succinct yet detailed literature review, complete sections on applicant capability, materials and research methodology, references, human subjects, and supporting documents. The proposal must be defended by the student in a forum that includes the student's complete Doctoral Dissertation Committee.

## **Dissertation Summary**

The program will culminate in a dissertation research project on an important public health topic. The dissertation will take the form of a traditional research dissertation or, at the student's option, a series of three publishable papers or monographs on a related, important public health topic. The papers must be cleared for submission by the committee and submitted before the dissertation defense. We emphasize peer-reviewed research publications as desired outcomes because of their positive impact on skills and the professional placement options for our graduates. This is consistent with a trend in public health Ph.D. programs around the country.

The dissertation will be defended in public in a forum that has been announced at the school and university level. The Dissertation Committee comprises five members, all of whom must sign the approval form for the dissertation to be complete. The dissertation must be completed following WVU policy regulating electronic submission of theses and dissertations.

## **Program Delivery**

Virtually all courses in the program will be taught using the face-to-face, on-campus, small, or large group format. Only two or three courses will be delivered by Web-based technology.

## **Admission to the Program**

Admission to the doctoral program will be limited to a few highly qualified and motivated candidates. We will admit an initial class of approximately six full-time students per year until we graduate the first Ph.D. class. Competitive stipend support will be offered to these students.

An above average undergraduate GPA will be required for applicants to be eligible for program admission. The Graduate Record Examination (GRE) or equivalent graduate-level standardized test will be used to screen applicants. For such tests, the scores must be less than five years old. In addition to official transcripts and GRE scores, each applicant will be screened based on: 1) a commitment to national and international public health research, training, and service as demonstrated in a statement of purpose (two to three pages single-spaced); 2) curriculum vitae/resume; 3) official educational programs and WVU application materials; and 4) three letters of recommendation (two must be academic references). A test of English as a Foreign Language (TOEFL) score of at least 550 will be required for students who obtained their bachelor's and master's degrees in a country where English is not the first language. Short-listed applicants will be interviewed based on academic merit, considering all of the above criteria. The interview may be conducted in person, via telephone, or in video conference.

Detailed admissions procedures, including online application materials can be found the Ph.D. program's Web site: [http://www.hsc.wvu.edu/som/cmcd/degree\\_programs/phd.asp](http://www.hsc.wvu.edu/som/cmcd/degree_programs/phd.asp).

## **Performance Standards**

To be admitted to any Ph.D. track, students must demonstrate the ability to maintain at least a 3.0 GPA in the first core year of study and thereafter. Credit hours for courses in which a grade of lower than C is obtained will not count toward satisfying degree requirements. Students who fail to maintain a 3.0 GPA will be placed on probation and must bring their GPA up to 3.0 during the following semester. Students who then fail to attain a 3.0 will be dismissed from the program. Student research will be graded by the faculty mentor each semester. Research grades will be satisfactory or unsatisfactory (S/U).

For more information about the Ph.D. program contact: Robert Pack, Ph.D., M.P.H., Associate Professor, Director of the Ph.D. Program in Public Health Sciences, P.O. Box 9190, WVU School of Medicine, Morgantown WV 26506, Phone (304) 293-1091, Fax (304) 293-6685 E-mail: rpack@hsc.wvu.edu, WVU School of Medicine, Department of Community Medicine, Phone (304) 293-2502.

## **Master of Science (M.S.) in School Health Education**

The Department of Community Medicine offers the M.S. degree in school health education. This program is open only to applicants holding a professional teaching certificate/licensure. A copy of your teaching certificate is required for admission.

### **Goal of the M.S. Program**

The goal of the school health M.S. degree program is to provide teachers with the knowledge and skills necessary to instill in school-age students the information necessary to make healthy decisions regarding well-being. Experiential instruction, coupled with critical thinking skills, enables students to be informed health consumers. The program will provide an optimal experience to equip students to be models and mentors for their own students.

### **Admission Requirements**

#### **Applicants to the M.S. program must:**

1. Submit an Application for Graduate Admission to West Virginia University and attach a nonrefundable check for the amount specified on the application form.
2. Submit sealed transcripts of all college coursework to the Graduate Unit, West Virginia University Office of Admissions and Records.
3. Hold a bachelor's degree from an accredited college of university and a minimum grade point average of 2.75 on a 4.0 scale.
4. Complete an M.S. (school health education) program application with a copy of an official teaching certificate.

### **Performance Standards**

#### **GPA and grade requirements are as follows:**

1. Students are required to maintain a GPA of at least 3.0 on all work taken as a graduate student while enrolled in community medicine graduate programs. A student must have 3.0 GPA or better in order to graduate from the program.
2. Students admitted with a 2.75 to 2.99 GPA must have attained a 3.0 GPA or above at the end of their first semester or they will be dismissed.
3. Students admitted with a 3.0 GPA must have a minimum 3.0 GPA every semester. If their GPA falls below 3.0 one semester, they will be placed on probation. If the GPA falls below 2.75 they will be suspended.
4. Two grades of C or below while enrolled as a graduate student will result in probation. Three grades of C or below while enrolled as a graduate student will result in suspension.
5. A grade lower than C will not be counted towards satisfying degree requirements. A grade lower than a C **must** be repeated for all required graduate program courses.
6. A grade of F in any course taken to satisfy degree requirements in a community medicine graduate program will result in automatic program dismissal.
7. Students may refer to the *WVU Student Handbook* for more information: <http://www.arc.wvu.edu/rights.html> and on the CMED Web site: <http://www.hsc.wvu.edu/som/cmed/>.

### **Course of Study**

The program requires 36 credit hours of coursework. Students may transfer nine credit hours that are pre-approved upon admission.

Students will take two courses per semester with three one-week intensive summer sessions. This program can be completed in two calendar years on a part-time basis.

Since unforeseen circumstances might necessitate a curriculum change, prospective and current students are encouraged to visit the educational programs Web site at: <http://www.hsc.wvu.edu/som/cmed/> for current requirements.

For more information about the M.S. program please contact: Ruth E. Kershner, Ed.D., R.N., Associate Professor, Coordinator of the M.S. Program in School Health Education, P.O. Box 9190, WVU School of Medicine, Morgantown WV 26506, Phone (304) 293-7440, Fax (304) 293-6685, E-mail: rkershner@hsc.wvu.edu or WVU School of Medicine, Department of Community Medicine, Phone (304) 293-2502.

# Human Performance and Applied Exercise Science

*The Department of Human Performance and Applied Exercise Science has three divisions:*

**Division of Exercise Physiology**

Includes an undergraduate and a graduate program.

**Division of Occupational Therapy**

Includes an entry-level master's program.

**Division of Physical Therapy**

Includes an entry-level doctoral program.

## Division of Exercise Physiology

Stephen E. Alway, Ph.D., Professor and Chair and Director of Graduate Studies

<http://www.hsc.wvu.edu/som/ep>

Randall W. Bryner, Ed.D., Associate Professor, Vice Chair and Director of Undergraduate Education

<http://www.hsc.wvu.edu/som/ep>

## Degrees Offered

*Bachelor of Science*

*Master of Science*

*Doctor of Philosophy*

*Joint Doctor of Medicine and Doctor of Philosophy*

## Introduction

The WVU exercise physiology program was established in the Health Sciences Center's School of Medicine in July 1993. The program offers a four-year curriculum leading to a bachelor of science degree in exercise physiology. The bachelor of science in exercise physiology is a preparatory program for graduate or professional school. Graduates continue their education in areas such as exercise physiology, physical therapy, or medicine. The program is designed to provide students a background in basic science and exercise physiology as well as courses in nutrition, athletic training, first aid and emergency care, and business.

## The Profession

Exercise physiologists are trained to evaluate people in the areas of cardiovascular fitness, muscular strength and endurance, flexibility, neuromuscular integration, and body composition. They are also trained to provide exercise programs based on the results of these evaluations that are designed to increase the functional capacity of the participants.

Exercise physiologists work with athletes, patients, and healthy participants in the areas of disease prevention in wellness programs, or rehabilitation in hospital settings. The bachelor of science program is a preparatory program for graduate school. Graduates of this program continue their studies in exercise physiology, physical therapy, medicine, or other health-related careers. Graduates of the master of science or doctoral program find employment in corporate wellness, hospital rehabilitation, higher education, or other research settings. Additionally, they may be employed in a wide variety of private, community, state, and national agencies. Exercise physiology is an evolving field that is becoming increasingly important with the integration of preventive medicine into the health care system. Employment opportunities are expanding and increasing with experience and level of education.

## Bachelor of Science

### Admission

Students must meet the minimum requirements for WVU for admission to the program. All coursework completed prior to transfer to the exercise physiology program requires at least a 2.75 cumulative grade point average and a grade of C or better in all required courses.

## Program Requirements

Students must complete the University requirements for the General Education Curriculum. Students must complete the following courses or course equivalents in theory and foundation to meet the exercise physiology program requirements.

Course	Hrs.
CHPR 172 <i>First Aid and Emergency Care</i> .....	3
PSYC 241 <i>Developmental Psychology</i> .....	3
ATTR 121 <i>Sport Injury Control and Management</i> .....	3
ATTR 219 <i>Gross Anatomy</i> .....	3

EXPH 240 <i>Medical Terminology</i> .....	1
EXPH 293A <i>Introduction to Exercise Physiology I</i> .....	1
EXPH 293B <i>Introduction to Exercise Physiology II</i> .....	1
EXPH 364 <i>Kinesiology</i> .....	3
EXPH 365 <i>Exercise Physiology I</i> .....	3
EXPH 368 <i>Laboratory Techniques and Methods I</i> .....	3
EXPH 491 <i>Professional Field Experience</i> .....	6
EXPH 369 <i>Strength and Conditioning Methods</i> .....	3
EXPH 370 <i>Writing for Exercise Physiology</i> .....	3
EXPH 475 <i>Industry Organization in Exercise Physiology</i> .....	3
EXPH 496 <i>Senior Thesis</i> .....	3
MATH 126 <i>College Algebra*</i> .....	3
MATH 128 <i>Plane Trigonometry*</i> .....	3
PHYS 101 <i>Introductory Physics</i> .....	4
PHYS 102 <i>Introductory Physics</i> .....	4
CHEM 115 <i>Fundamentals of Chemistry</i> .....	4
CHEM 116 <i>Fundamentals of Chemistry</i> .....	4
CHEM 231 <i>Organic Brief Course (or both of the following)</i> .....	4
CHEM 233 and 235 <i>Organic Chemistry I</i> .....	4
CHEM 234 and 236 <i>Organic Chemistry II</i> .....	4
BIOL 101 and 103 <i>General Biology and Lab**</i> .....	4
BIOL 102 and 104 <i>General Biology and Lab**</i> .....	4
PSIO 241 <i>Elementary Physiology</i> .....	4
HN&F 171 <i>Introduction to Human Nutrition</i> .....	3
STAT 211 <i>Elementary Statistical Inference</i> .....	3
Suggested Electives: BIOL 219 <i>The Living Cell</i> (4 hrs.) and BIOC 339 (3 hrs.)	

\*MATH 129, 155, or 150 may be substituted for MATH 126 and 128.

\*\*BIOL 115 and 117 may be substituted for of BIOL 101–104.

Students must have a grade of C or better in all required courses. Students must have a minimum of 128 hours to graduate. Students must maintain a cumulative GPA of 2.5 or better to remain in the program.

Students may choose the general curriculum tract or health professionals tract. Students who intend on applying to medicine, dentistry, pharmacy, or graduate school should take the health professionals tract. Students applying to physical therapy can choose either the general or health professional track.

## Exercise Physiology Curriculum Plan

### Freshman Year

First Semester	Hrs.	Second Semester	Hrs.
ENGL 101 .....	3	MATH 128 <i>Trig</i> .....	3
MATH 126 <i>Algebra</i> .....	3	BIOL 102 and 104 .....	4
BIOL 101 and 103 .....	4	GEC Objectives .....	3
EXPH 293 <i>Intro. to EXPH I</i> .....	1	ATTR 121 <i>Athletic Training</i> .....	3
PSYC 101 <i>Intro. to Psychology</i> .....	3	EXPH 293A <i>Intro. to EXPH II</i> .....	1
UNIV 101 .....	1	ATTR 219 <i>Anatomy</i> .....	3
<b>Total</b> .....	<b>15</b>	<b>Total</b> .....	<b>17</b>

### Sophomore Year

First Semester	Hrs.	Second Semester	Hrs.
CHEM 115 .....	4	CHEM 116 .....	4
PHYS 101 .....	4	PHYS 102.....	4
GEC Objective .....	3	PSIO 241 <i>Human Physiology</i> .....	4
ENGL 102 .....	3	EXPH 240 <i>Medical Terminology</i> .....	1
EXPH 364 <i>Kinesiology</i> .....	3	GEC Objectives .....	3
<b>Total</b> .....	<b>17</b>	<b>Total</b> .....	<b>16</b>

### Junior Year

First Semester	Hrs.	Second Semester	Hrs.
CHPR 172 <i>First Aid and Emer. Care</i> ....	2	CHEM 231 <i>Org. Chem. Brf. Cor.</i> .....	4
EXPH 365 <i>Exercise Physiology I</i> .....	3	EXPH 369 <i>Strength and Cond. Mth</i> .....	3
EXPH 368 <i>Lab Tech. and Meth. I</i> .....	3	HN&F 171 <i>Nutrition</i> .....	3
PSYC 241 <i>Human Grwth and Dev.</i> .....	3	Elective (s) .....	6
GEC Objective.....	3	<b>Total</b> .....	<b>16</b>
EXPH 370 <i>Writing Meth. in EXPH</i> .....	3		
<b>Total</b> .....	<b>17</b>		

### Senior Year

First Semester	Hrs.
EXPH 491 <i>Professional Field Exp.</i> .....	3
EXPH 496 <i>Senior Thesis</i> .....	3
STAT 211.....	3
Electives.....	6
<b>Total</b> .....	<b>15</b>

Second Semester	Hrs.
EXPH 491 <i>Professional Field Exp.</i> .....	3
EXPH 475E <i>The Bus. of Exercise</i> .....	3
GEC Objectives.....	3
Electives.....	6
<b>Total</b> .....	<b>15</b>

## Health Professions Emphasis Curriculum Plan

### Freshman Year

First Semester	Hrs.
ENGL 101.....	3
CHEM 115.....	4
MATH 126 <i>Algebra</i> .....	3
BIOL 115.....	4
EXPH 293 <i>Intro. to EXPH I</i> .....	1
PSYC 101 <i>Intro. to Psychology</i> .....	3
UNIV 101.....	1
<b>Total</b> .....	<b>19</b>

Second Semester	Hrs.
MATH 128 <i>Trig.</i> .....	3
BIOL 117.....	4
GEC Objectives.....	3
CHEM 116.....	4
EXPH 293A <i>Intro. to EXPH II</i> .....	1
ATTR 219 <i>Anatomy</i> .....	3
<b>Total</b> .....	<b>18</b>

### Sophomore Year

First Semester	Hrs.
CHEM 233 & 235 <i>Organic</i> .....	4
ATTR 121 <i>Athletic Training</i> .....	3
ENGL 102.....	3
EXPH 364 <i>Kinesiology</i> .....	3
PHYS 101.....	4
<b>Total</b> .....	<b>17</b>

Second Semester	Hrs.
CHEM 234 & 236 <i>Organic</i> .....	4
PHYS 102.....	4
PSIO 241 <i>Human Physiology</i> .....	4
CHPR 172 <i>First Aid and Emer. Care</i> .....	2
EXPH 240 <i>Medical Terminology</i> .....	1
GEC Objectives.....	3
<b>Total</b> .....	<b>18</b>

### Junior Year

First Semester	Hrs.
EXPH 365 <i>Exercise Physiology I</i> .....	3
EXPH 368 <i>Lab Tech. and Meth. I</i> .....	3
PSYC 241 <i>Human Growth and Dev.</i> .....	3
BIOC 339.....	4
Elective Science (e.g. BIOL 219).....	4
<b>Total</b> .....	<b>17</b>

Second Semester	Hrs.
EXPH 460 <i>Pathophysiology</i> .....	3
EXPH 369 <i>Strength and Cond. Mth.</i> .....	3
HN&F 171 <i>Nutrition</i> .....	3
EXPH 370 <i>Writing Meth. for EXPH</i> .....	3
STAT 211.....	3
GEC Objective.....	3
<b>Total</b> .....	<b>18</b>

### Senior Year

First Semester	Hrs.
EXPH 491 <i>Professional Field Exp.</i> .....	3
EXPH 496 <i>Senior Thesis</i> .....	3
Elective Science.....	4
MBIM 200.....	4
GEC Objective.....	3
<b>Total</b> .....	<b>17</b>

Second Semester	Hrs.
EXPH 470 <i>Research Methods</i> .....	3
EXPH 491 <i>Professional Field Exp.</i> .....	3
EXPH 475 <i>Industry Organ EXPH</i> .....	3
Elective Science (BIOL 410).....	4
GEC Objective.....	3
<b>Total</b> .....	<b>16</b>

## Master of Science

The master of science program in exercise physiology prepares students for careers in adult fitness, hospital or corporate-based wellness programs, or cardiac rehabilitation. Students specialize by completing a 200-hour clinical internship or a research thesis.

### Admission

Fifteen students are accepted once a year (by March 1) on a competitive basis. Applicants must have a baccalaureate degree in an allied field from an accredited institution with a minimum undergraduate grade point average of 3.0 (based on A=4.0 grade points). Three letters of reference and GRE scores are required. Applicants are selected for admission on the basis of scholastic standing (special attention is given to science grades) and recommendations. The graduate application, three letters of reference, and college transcripts must be submitted by January 15.

### Program Requirements

A minimum of 36 semester hours of credit is required for graduation. The following courses or course equivalents are required. Courses are taken over two years.

<b>Course</b>	<b>Hrs.</b>
EXPH 691G <i>Anatomy</i> .....	3
SS 615 <i>Research Methodology in Physical Education</i> .....	3
PSIO 441 <i>Mechanisms of Body Function</i> .....	4
PHAR 449 <i>Drugs and Medicines</i> .....	3
HN&F 610 <i>Nutrition and Fitness</i> .....	3
EXPH 470 <i>Research Methods</i> .....	3
EXPH 567 <i>Exercise Physiology 2</i> .....	3
EXPH 668 <i>Diabetes and Exercise</i> .....	3
EXPH 670 <i>Laboratory Techniques And Methods 2</i> .....	3
EXPH 671 <i>Stress Testing</i> .....	3
EXPH 672 <i>Professional Field Placement 2</i> .....	6
EXPH 673 <i>Exercise Prescription</i> .....	3
or if the student chooses the thesis option, the following courses are required:	
EXPH 697 <i>Research</i> .....	3
EXPH 798 <i>Dissertation/Thesis</i> .....	3

## Doctor of Philosophy

Exercise physiology is one of the seven biomedical sciences graduate programs that awards the doctor of philosophy degree (Ph.D.) The program is intended to give exceptional students knowledge in basic medical and scientific areas to prepare them for careers as effective and knowledgeable researchers and teachers in the broad field of exercise physiology/kinesiology. In the Division of Exercise Physiology these goals are achieved by several means. Formal coursework in the sub-disciplines of exercise physiology, physiology, biochemistry, molecular biology, and pharmacology provides the student with the opportunity to develop a solid foundation in basic subject matter of medical sciences that can be applied to aspects of exercise and disease. The student's knowledge base will be further strengthened by participation in elective courses offered within the division, selected courses offered by other departments within the School of Medicine, and by departments in other colleges and schools of WVU.

The faculty in the Division of Exercise Physiology view the Ph.D. primarily as a research degree. Research training and experience are provided under the guidance and supervision of the graduate faculty. The aim of this effort is to promote attitudes, habits, skills, and abilities that will enable the student to grow and develop as an independent scientist.

Graduate work involves a program of study and research individually designed to utilize the abilities and strengths of the faculty (e.g., cardiovascular system, heart disease, neuromuscular system, aging, and diabetes/obesity) and accommodates the needs of the student within an area of specific interest. The exact content of a program of study for a particular student usually will differ from one student to another. Nevertheless, there are common goals, expectations, policies, and procedures that will be universal for all graduate students. Likewise, there are activities and responsibilities that will be common among all faculty advisors in the Division of Exercise Physiology.

## Program Features

### 1. Admission and Performance Standards

Program requirements typically restrict the admission of first time applicants to the fall semester.

The general application procedures to the Ph.D. program in exercise physiology follows guidelines for admission to the common Ph.D. graduate programs in the Schools of Medicine and Pharmacy. Students applying to the Ph.D. program normally have a minimum graduate grade point average of 3.0. In addition, applicants must submit three letters of recommendation from professors involved with the student's academic work, including faculty who can comment on the applicant's research ability and aptitude, an official transcript of all college work, and the results of the Graduate Record Examination. The minimum recommended score on the Graduate Record Examination is 1,000 for the verbal and quantitative scores combined. However, students will not be accepted nor denied acceptance based solely on test scores. An interview with the program faculty is required. Students will be selected by the Biomedical Sciences Admissions Committee. Students who have not completed a master's degree but wish to be considered for the Ph.D. program should contact the director of graduate studies (salway@hsc.wvu.edu). Typically students who are admitted to the Ph.D. program without a master's degree and are interested in exercise physiology will take several clinically focused courses in exercise physiology in their second year of enrollment.

Normally, students are enrolled for four to five years in the Ph.D. program with the majority of time spent in preparation for dissertation research and conducting independent dissertation research.

Grade requirements for the doctoral degree in exercise physiology include the following:

- a. Minimum GPA of 3.0.
- b. No grade less than B will be accepted for any exercise physiology course.
- c. No grade less than C will be allowed in any of the courses on the plan of study.
- d. Students may be required to obtain a B or better in non-exercise physiology courses in which the Dissertation Committee views as critical for the student's research success (i.e., students who obtain a C may be required to retake courses to obtain a grade that is B or better).

Failure to meet these requirements will result in dismissal from the program. The exercise physiology graduate faculty will review all petitions to remain in the program according to due process. The faculty may provisionally retain a student in the program if special circumstances exist. In this case, the graduate faculty and the Doctoral Committee of Exercise Physiology will review the student's record and render its decision by majority vote. If a failing student is provisionally retained, the graduate faculty and the Dissertation/Advisory Committee will draft a plan of approach from which the student must follow to regain academic good standing within the specified time period. The student may appeal a decision for dismissal by writing an appeal to the chair of the Division of Exercise Physiology. The division chair will convene a meeting of the exercise physiology graduate faculty and the student's Doctoral Committee members if the committee had been formed prior to the student's dismissal. The student may appear at the meeting to make his/her appeal. The graduate faculty and Doctoral Committee members will review the appeal and render a decision by majority vote.

## 2. Program Requirements

Students will be assigned a provisional advisor upon acceptance into the program. By the end of the first academic year the student must choose a committee chair. The student and chairperson will invite other faculty members to serve on a Graduate Committee. All members of the committee must be acceptable to both the student and the chair. The committee and student will develop a plan of study that will include required coursework for the program. The committee will consist of at least five faculty, the majority of whom hold regular graduate faculty status. The chairperson and two other members of the committee must be members of the exercise physiology graduate faculty. One member of the committee must be from the student's minor area. The committee members will be selected according to their abilities to assist the students with critical aspects of their doctoral work.

### Basic Science Recommendations

	<b>Hrs.</b>
Biology.....	4-8
General Chemistry or Organic Chemistry.....	4-8
Physics is recommended but not required .....	4

### Required Doctoral Coursework (or equivalent)

	<b>Hrs.</b>
CCMD 793 <i>Cellular Structure and Function</i> .....	5
CCMD 712 <i>Biostatistics for the Basic Sciences</i> .....	1
CCMD 789 <i>Scientific Ethics and Certification</i> .....	1
CCMD 799 <i>Graduate Colloquium</i> .....	1
CCMD 797 <i>Laboratory Rotations</i> .....	3
CCMD 793 A <i>Fundamentals of Integrated Systems</i> .....	4
CCMD 793 H <i>Molecular Biology</i> .....	4
CCMD 793 J <i>Introduction to Biomedical Research</i> .....	1
CCMD 793 G <i>Cardiovascular and Respiratory Biology</i> .....	2
CCMD 793 E <i>Muscle Structure and Function</i> .....	2
EXPH 791 A <i>Advanced Study Exercise Physiology I</i> .....	3
EXPH 791 B <i>Advanced Study Exercise Physiology II</i> .....	3
EXPH 791 C <i>Advanced Study of Exercise Physiology III:</i> Neural regulation of muscle structure and function.....	3
EXPH 797 (Must be completed prior to dissertation.) .....	12-24
EXPH 796 <i>Graduate Seminar</i> .....	3
EXPH 799 <i>Graduate Colloquium</i> .....	1
Statistics* .....	9
<i>Introduction to Research/Research Rotations</i> (minimum of three research rotations).....	9

\*Specific courses to be determined by doctoral committee.

### Recommended—One of the Following Courses

	<b>Hrs.</b>
CCMD 793 F <i>Immunology II</i> .....	2
CCMD 793 D <i>Neuroscience II</i> .....	2
CCMD 793 C <i>Respiratory System Biology</i> .....	2

## **Additional Academic Responsibilities**

All doctoral students will be required to present a minimum of three one-hour graduate seminars to faculty and students before graduating. Doctoral students are also required to teach as part of their training. Students are expected to present their research data at national meetings and publish their data in appropriate peer-reviewed journals prior to graduation. However, the student's faculty advisor must give approval before any research or scholarly material is submitted for presentation or publication and the material must recognize all appropriate co-authors and grant sources.

## **Required Research Participation**

Because the doctorate is a research degree, students will be expected to be involved in research from the beginning of their programs. Doctoral students will participate in three research rotations with faculty in exercise physiology during the first two semesters of enrollment. Students are expected to choose a dissertation chair and a Dissertation Committee by the end of the first year of enrollment. Students should work with their dissertation advisor to design appropriate pilot studies and with that data identify a dissertation project and appropriate research questions/hypothesis to be tested by the proposed research. All approved research projects must be hypothesis based, and whenever possible, the research questions should address mechanistic questions that explain biological phenomenon relevant to exercise physiology.

Research is conducted throughout the doctoral program with a goal of having at least three manuscripts published or submitted to a journal for peer review before graduation. Students should strive to present their research findings at a minimum of one national/international meeting annually beginning no later than the second year of enrollment in the doctoral program.

## **Directed Research**

All preliminary research must be collected under the supervision and approval of the dissertation chair. The student is expected to engage in directed research under the supervision of the dissertation chair to learn techniques and collect pilot data that will be the basis of a future dissertation project. Studies to obtain pilot data should be presented to the dissertation committee to demonstrate the student's competency in research skills, and, that his/her research ideas and hypotheses are appropriate and justified. This process facilitates progression through the program in a timely and efficient manner. Nevertheless, the Dissertation Committee may require the student to obtain additional pilot data or research skills prior to approving the research proposal as a dissertation topic. The student's directed research efforts should be progressing towards approval of a dissertation topic from the members of the Dissertation Committee, once they have been identified (before the end of the first semester of year two). This research training will provide the student background data/information from which to base grant proposal and dissertation topic as part of the requirements for completing Part II of the Comprehensive Examination.

## **Comprehensive/Qualifying Examination**

The Comprehensive (qualifying/candidacy) Examination will evaluate a student's readiness for advancement to doctoral candidacy. This will consist of a written and an oral component to determine that the student is qualified to complete the doctoral dissertation and conduct independent research.

## **Requirements of the Qualifying/Candidacy Examination**

The Qualifying Examination should typically be taken before the beginning of the third academic year, preferably in the summer semester of the second year. Some students may require additional didactic coursework if their research/science preparation during his/her master's degree was considered to be insufficient to prepare the student for work at the doctoral level. After passing the Qualifying Examination, students will be admitted to candidacy for the Ph.D.

## **Prerequisites for the Candidacy Examination**

The following are prerequisites for advancement to the qualifying examination:

1. The student must have an approved dissertation advisor and a Dissertation Committee.
2. The student must be in good academic standing (GPA of B or better) as defined in the doctoral program and this catalog, and have satisfactorily completed the first two years of course requirements (including those specified by the student's Dissertation Committee in the program of study). A minimum of 12 credit hours (or equivalent) of research experience is expected, but more is desirable.

## **Type of Examination**

The candidacy examination has two parts and students should aim to successfully complete both parts within a single month.

## **Part I: Comprehensive Integrative Written Examination**

The student will complete a written research proposal in a grant form (NIH R21, R03, AHA). The grant proposal must include all of the elements of a grant including pilot data. The student's Dissertation Committee will evaluate the project and must have unanimous approval of the written document for passing the written component of the qualifying examination. The written examination in the grant format will contain the following sections:

### **I. Specific Aims**

- A concise description of what the proposed research project will accomplish, including the hypothesis.

### **II. Background and Significance**

- A discussion of the scientific literature relevant to the proposed project that illustrates the current level of understanding in this area and identifies specific gaps in knowledge that the proposed project is intended to fill.

### **III. Preliminary Data and Pilot Studies**

- The figures, charts, photographs, gels, raw data signals, etc. will provide evidence of the student having acquired the needed research skills, the accuracy to which the research methods have been used and interpreted, and this should be the basis for proceeding with the larger study (i.e., the pilot data demonstrates the likelihood for success).

### **IV. Research Design and Methods**

- This section requires a thorough description of the research design and experimental procedures that will be used to accomplish the specific aims of the project. This section should clearly present the rationale for the chosen experimental design and procedures, and it should include information on how the experimental data will be analyzed. Anticipated results and his/her interpretation should also be discussed relative to the proposed hypothesis. One or more figures showing a flow chart of the research design and the time line of experiments for the study are helpful and encouraged.

### **V. References**

- The references do not have to be exhaustive but they should be thorough and include the most recent manuscripts as well as the classical manuscripts from which the more recent data are based. The length of the written proposal should not exceed 20 single-spaced pages (excluding budget, references, and pages prior to "Specific Aims"), with a minimum font size of 11 points.

### **VI. Budget**

- A sample budget should also be constructed according to the PHS guidelines for an RO1 proposal (not the modular budget form). This will help the Dissertation Committee evaluate the student's grasp of the resources necessary to complete a dissertation research project.

*Appropriate (recommended) lengths for each section (single spaced) are:*

- Specific aims: one page
- Background and significance: two to three pages
- Preliminary studies and pilot data: three to five pages
- Research design and methods: six to seven pages
- Budget and justification (two to four pages including justification pages)
- References: (three to four pages)

## **Part 2: Oral Examination of Research Proposal**

Normally the oral examination is set within two to four weeks following the acceptance of the Part 1 written examination. However, the oral exam component of Part 2 can only be scheduled if the members of the Dissertation Committee judge the written submission for Part 1 to be acceptable (or acceptable pending minor revisions). If Part 2 is deemed acceptable by the members of the Dissertation Committee, the chair of the Dissertation Committee will schedule the oral portion of Part II of the examination.

The following guidelines should be reviewed by the student and his/her Dissertation Committee before scheduling the oral examination.

### **Organizational Structure for the Oral Examination (Part 2)**

- The Examination Committee will consist of all members of the Dissertation Committee. The dissertation chair will provide each committee member copies of the student's responses for Part 1 and Part 2. The dissertation chair will certify the original submission by signing or initialing each page before making copies for the faculty. Other graduate faculty may request that the dissertation chair provide a copy of the student's responses (students should not be asked for a copy of his/her response from a non-Dissertation Committee member), but no copies will be provided to any graduate student and/or non-graduate faculty.

- The dissertation chair will contact each member of the Dissertation Committee to determine his or her level of satisfaction of Part 2, and to obtain the member's vote (pass/no pass). If all committee members are satisfied with written component of Part 2, pending non-fatal revisions, the oral examination will be scheduled.
- The dissertation chair will notify the student whether the oral defense of Part 2 can be scheduled. If Part 2 (NIH grant) is adequate (pending revisions/suggestions made by the Dissertation Committee etc.) that student will be instructed to secure an adequate room for the oral defense, and to arrange for notification/advertisement of this oral examination. Notification and scheduling of the oral examination (Part 2) will be made by the student after consulting with the dissertation chair no less than seven days before the examination. The student should arrange for the announcement to be posted in the division/department and sent to other departments, the Health Sciences Graduate Office and/or distributed by e-mail. The announcement should contain:
  - The date, location, and time of the oral presentation and defense.
  - The name of the student and each of the members of the student's Dissertation Committee (identify the committee chair in the advertisement).
  - The title of the student's research proposal that will be presented and defended during Part 2.
  - All graduate faculty and graduate students will be invited to participate in the student's oral examination, (oral defense for Part II) although faculty and students from other departments may also attend. (See *Graduate Handbook for Exercise Physiology* for an example of this notification).

In the oral examination for Part 2, the student will make a professional formal presentation (using slides or Power Point computer slides or similar media, but not overhead acetates) that clearly identifies the research area, hypotheses, and questions that they wish to pursue as part of his/her Ph.D. dissertation and pilot data that they have obtained (about 40 to 45 minutes). The chair of the Dissertation Committee will also chair Part II of the examination. The chair will permit members of the audience (faculty, graduate students, etc.) to ask questions of the graduate presenter for approximately 10 to 15 minutes. Thereafter the guests will be dismissed and the meeting will be closed except for the members of the student's Dissertation Committee and other invited (i.e., non-voting) members of the graduate faculty that have been approved by the chair of the Dissertation Committee.

Failure of to successfully complete the comprehensive examination after two attempts is grounds for dismissal. Students will be permitted due process and the division chair will convene the graduate faculty as a whole, who will consider written appeals from any student who has been dismissed by virtue of failing the qualifying/candidacy examination.

### **Temporary Committee Substitutions**

- Membership on a Doctoral Dissertation Committee signifies the highest level of commitment to all phases of the student's doctoral training. All committee members must therefore be present for the oral research design exam. If all the members of the committee are not present at the beginning of the oral defense for Part II, the oral examination cannot continue. Absence of a committee member from the exam is only acceptable in the event of illness or some other serious unforeseen problem.
- If a committee member is unexpectedly unable to participate in a scheduled oral examination, the examination should be rescheduled for another time within the next two weeks when all members can be present. The student may request that the examination not be rescheduled, provided that a substitute committee member can be found (if one is needed to meet minimal Dissertation Committee requirements). Requests for member substitution will be granted in only very rare and exceptional circumstances. The Division Chair must approve any temporary substitutions.
- The substitute must have adequate time to read the written proposal and prepare for the examination. The substitute must be a suitable graduate faculty with established expertise in an area previously represented by the absent committee member. It is not appropriate to substitute one faculty with another if a different research expertise would be represented by the substitution. Any substitute must be acceptable to both the student and the dissertation advisor, and the substitute must meet the requirements for dissertation committee membership. The substitute member will be considered a full-voting member of the Dissertation Committee for the purpose of administering and grading the examination. The substitute member will also be provided copies of the student's written responses for Parts I and II. The final examining committee may contain no more than one substitute member, and the students' advisor (normally Dissertation Committee chair) may not be substituted.

## **Qualifications For Advancement to Ph.D. Candidacy**

The student must demonstrate:

- A wide base of knowledge in exercise physiology
- An ability to think independently
- Integration of existing knowledge into a practical research question, by identifying what is known, what is not known, etc.
- Critical evaluation of literature
- Problem-solving skills
- Acceptable written and oral communication skills including the ability to “think on one’s feet.”

## **Submission of Part II—Written Research Proposal to a Funding Agency**

Part 1 also serves an additional purpose. Graduate students are expected to submit at least one grant proposal to an external granting agency by the end of his/her second year of enrollment. Constructing the proposal is a part of the requirements for graduation. Part 1 of the candidacy examination provides the graduate student the opportunity to complete these requirements for submitting the grant proposal, while also preparing for the qualifying examination and assembling ideas for the dissertation project.

The student should wait until successfully negotiating Part 1 of the candidacy examination (both written and oral components) and revise the grant according to the suggestions of his/her dissertation chair and Dissertation Committee. Graduate students should not submit a grant proposal without input, feedback, and approval of the committee chair, and Dissertation Committee. It is acceptable and appropriate for the student to obtain feedback from all members of the Dissertation Committee or other faculty following successful completion of Part 1 and revise his/her grant (Part 1) appropriately before submitting it to a funding agency.

The submission of the grant proposal (Part 1) to a funding agency should be used to: (a) seek a graduate student stipend and other research supplies as allowed by the external source; (b) seek funding for travel to national/international meetings if it is permitted by the funding agency; (c) obtain independent external review of the student’s research proposal/dissertation project; (d) obtain experience in writing grants for external funding. The student should also notify the director of graduate studies of the grant submission. This will be accomplished by submitting a copy of the front page of the grant proposal (with the title, signatures, etc.), the budget page of the grant to the director of graduate studies.

## **General Dissertation Requirements**

The purpose of the dissertation is to provide experiences that will assist the student in becoming an independent investigator and constructing manuscripts from the data collected in the research process. Typical dissertation projects will be about three years in length.

The student must complete a dissertation in which they have obtained original data that makes a novel and important contribution to knowledge in the broad field of exercise physiology and submit all manuscripts containing these data to peer-reviewed journals. Students must pass an oral examination based upon his/her dissertation.

The dissertation must be constructed in a format suitable to the graduate school and the advisor. Preferable formats will include writing the chapters as if they were to be submitted to peer-reviewed journals (including abstract, introduction, methods and materials, results, discussion, and literature cited in each chapter). In addition, the final one to two chapters of the dissertation should include an integrative discussion concerning the total research project and evaluation of hypothesis that were tested. The typical doctoral dissertation will yield three to five peer-reviewed manuscripts. To optimize feedback from the coauthors and to ensure timely publication, the manuscripts originating from dissertation work should be submitted for peer review prior to graduation, and some manuscripts may be published before the student graduates. Proper acknowledgment for funding of the research should be noted in both the dissertation and the manuscripts obtained from dissertation work. It is expected that several of these manuscripts that will be included in the dissertation will have been published before graduation. It is further expected that all of the manuscripts will be submitted to a peer-reviewed journal for consideration for publication before graduation. The process of writing the chapters as journal manuscripts will facilitate this process.

## **Student Evaluations**

Students will be formally evaluated by the program faculty on a yearly basis with respect to courses, research, teaching, professional development, and progress through the program. The student will be asked to fill out an activity report encompassing these areas and submit it to the chair of the Division of Exercise Physiology. The chair will convene the program faculty to evaluate each student. The chair will provide the students a written assessment of their progress.

## Division of Occupational Therapy

Randy P. McCombie, Ph.D., OTR/L, Chair  
<http://www.hsc.wvu.edu/som/ot>

### Degree Offered

*Master of Occupational Therapy*

### Introduction

In the fall of 1993, the West Virginia Board of Trustees approved the establishment of a new master's degree program at WVU, leading to an entry-level master's degree in occupational therapy. WVU accepted its first students into the professional program in the fall semester of 1996. The academic and fieldwork program requires three years to complete. Prior to application, students are required to complete approximately 50 to 55 hours of prerequisite courses, which in most instances will take two years to fulfill.

### The Profession of Occupational Therapy

Occupational therapy is a health profession which provides services to people of all ages with physical, mental, or developmental disabilities. The purpose of occupational therapy is to help individuals achieve a maximum level of independence. The focus is on developing the capacity to function in all activities (occupations) of daily life, including self care, work, and leisure. Hence the name occupational therapy.

Occupational therapy is a health and rehabilitation profession designed to help people regain and build skills that are important for health, well-being, security, and happiness.

Occupational therapists work with people of all ages who, because of physical, developmental, social, or emotional deficits, need specialized assistance in learning skills to enable them to lead independent, productive, and satisfying lives.

Occupational therapists work in schools, hospitals, rehabilitation centers, home health agencies, skilled nursing homes, and private practice.

### Accreditation Status

WVU's Division of Occupational Therapy has been granted accreditation status by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 4720 Montgomery Lane, P.O. Box 31220, Bethesda, M.D. 20824-1220. AOTA's phone number is (301) 652-AOTA. The OT program at WVU was initially awarded accreditation in 1998, and awarded re-accreditation in 2003. The next scheduled onsite visit for accreditation will be 2013.

Graduates of the program are able to sit for the national certification examination for the occupational therapist administered by the National Board for Certification in Occupational Therapy Inc. (NBCOT). For more information, NBCOT can be contacted at (301) 990-7979 or at <http://www.nbcot.org/>. After successful completion of this exam, the individual will be an occupational therapist, registered (OTR). Most states require licensure in order to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination. Note: A felony conviction may impact a graduate's ability to take the NBCOT examination and/or obtaining a state license. For further information on NBCOT's Character Review Program, interested parties can obtain information from that Board or their Web site.

### Prerequisite Courses

	Hrs.
ENGL 101 .....	3
ENGL 102 .....	3
PSYC 101 .....	3
PSYC 241 .....	3
PSYC 281 .....	3
SOCA 101 or SOCA 105 .....	3
BIOL 101 and BIOL 103 .....	4
BIOL 102 and BIOL 104 .....	4
PHYS 101* .....	4
PSIO 241* (or PSIO 441*) .....	4
STAT 211* .....	3
COMM 100 .....	1
COMM 102 .....	2

\*Note: Check for prerequisites for PHYS 101, PSIO 241, and/or STAT 211 by contacting either the Division of Occupational Therapy, or the department under which those courses are housed.

Fulfillment of WVU's General Education Curriculum (GEC) not covered by the above.  
(see the *WVU Undergraduate Catalog*).....12

WVU students must consult the Undergraduate Academic Services Center prior to enrolling in prerequisite courses. These courses may be taken at any institution which offers equivalent courses. Any questions regarding pre-requisite courses may be directed to the Undergraduate Academic Services Center, (304) 293-5805, and/or the Division of Occupational Therapy (304) 293-8828. Equivalence may be determined by contacting the transfer desk, Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009.

**Admission Standards**

Normally, students apply to the program during their second year of college. They must have a minimum of 50 to 55 hours of college credit which includes the pre-requisites listed previously. Students who already have a degree in another field are also eligible to apply. All applicants must meet the following criteria:

- Minimum GPA of 3.0, including overall GPA and prerequisites is normally required (a higher GPA may be necessary given the competitive nature of the program).
- Minimum of 60 hours of volunteer experience with a licensed occupational therapist. Students should contact the Division of Occupational Therapy to determine the type of experience required. Students should keep a record of dates/hours, locations, and name of supervising occupational therapist.
- Two recommendations are also required, one from an occupational therapist who supervised the volunteer/work experience and the other from a professor who has recently taught the applicant. These recommendation forms are included in the application packet.
- Completion of all prerequisite courses by the end of the semester of application (normally, second semester of sophomore year) is normally required.

**Distance Learning**

The Division of Occupational Therapy also offers an extended (distance) learning track for occupational therapy assistants (COTAs) who wish to become occupational therapists. The requirements for this track are similar to those of the traditional track, with the exception that rather than volunteer work, applicants need to have completed the equivalent of one year’s professional employment as an occupational therapy assistant. Occupational therapy assistants (COTAs) interested in this track should contact the Division of Occupational Therapy at (304) 293-8828 for general information.

**What to Expect**

Like many professional programs, the curriculum in the entry-level master’s occupational therapy program is fairly fixed and intense. The first professional year will include courses in basic sciences and introductory professional courses. The second and third professional years will deal more specifically with training in occupational therapy theory and practice as administered across a wide variety of settings. The professional curriculum includes two off-campus, full-time clinical experiences known as Level II Fieldworks. Students are financially responsible for transportation, housing, and meal expenses related to clinical assignments. Students in the program are required to participate in the School of Medicine’s laptop computer purchase lease-to-own program, which provides each student with a state-of-the-art computer that contains course- and program-relevant software.

**Occupational Therapy Curriculum Plan**

*Junior Year*

Summer Session II	Hrs.
OTH 300 .....	4
OTH 480 .....	2
<b>Total .....</b>	<b>6</b>

First Semester	Hrs.
OTH 301 .....	3
OTH 302 .....	2
OTH 303 .....	2
OTH 304 .....	4
OTH 306 .....	4
OTH 335 .....	3
<b>Total .....</b>	<b>18</b>

Second Semester	Hrs.
OTH 307 .....	4
OTH 308 .....	3
OTH 321 .....	3
OTH 360 .....	3
OTH 365 .....	3
OTH 480 .....	1
<b>Total .....</b>	<b>17</b>

<i>Senior Year</i>			
First Semester	Hrs.	Second Semester	Hrs.
OTH 384 .....	2	OTH 386 .....	2
OTH 401 .....	4	OTH 405 .....	4
OTH 403 .....	3	OTH 408 .....	3
OTH 417 .....	3	OTH 416 .....	2
OTH 430 .....	3	OTH 419 .....	3
OTH 440 .....	2	OTH 432 .....	3
OTH 497 .....	1	OTH 480 .....	1
<b>Total .....</b>	<b>18</b>	OTH 497 .....	1
		<b>Total .....</b>	<b>19</b>

<i>Graduate Year</i>	
Summer I and II	Hrs.
OTH 540 .....	6
<b>Total .....</b>	<b>6</b>

First Semester	Hrs.	Second Semester	Hrs.
OTH 500 .....	3	Weeks 1–4	
OTH 503 .....	3	OTH 501 .....	4
OTH 570 .....	3	OTH 550 .....	3
OTH 520 .....	3	OTH 480 .....	1
OTH 551 .....	3	OTH 697 .....	2
OTH 480 .....	2	Weeks 5–16	
OTH 697 .....	2	OTH 640 .....	6
<b>Total .....</b>	<b>19</b>	<b>Total .....</b>	<b>16</b>

## Program Timeframe

Students must complete all didactic coursework and Level II Fieldworks within a period of five years after commencing the occupational therapy program. Furthermore, all Level II Fieldwork must be completed within 18 months following completion of academic coursework while remaining within the five-year time frame.

### Entry-Level Master's Program in Occupational Therapy

#### **Summer Session II**

- OTH 300 *Essentials of Clinical Anatomy*
- OTH 480 *Current Topics in Occupational Therapy*

#### **Fall Semester—First Year**

- OTH 301 *Professional Foundations*
- OTH 302 *Survey of Clinical Problem Solving*
- OTH 303 *Functional Movement Across the Lifespan*
- OTH 304 *Physical Impairment and Function 1*
- OTH 306 *Kinesiological Foundations for Intervention*
- OTH 335 *Therapeutic Activity*

#### **Spring Semester—First Year**

- OTH 365 *Physiology of Human Occupation*
- OTH 307 *Neurobiologic Foundations*
- OTH 308 *Evaluation Procedures*
- OTH 321 *Developmental Life Tasks*
- OTH 360 *Research Methods in OT*
- OTH 480 *Current Topics in Occupational Therapy*

#### **Fall Semester—Second Year**

- OTH 384 *Level I Fieldwork 1*
- OTH 401 *Physical Impairment and Function 2*
- OTH 403 *Occupational Therapy in Pediatrics 1*
- OTH 417 *Occupational Therapy in Geriatrics*
- OTH 430 *OT in Mental Health*
- OTH 440 *Vision and Perception*
- OTH 497 *Senior Research*

### **Spring Semester—Second Year**

OTH 386 *Level I Fieldwork 3*  
OTH 405 *Prosthetics and Orthotics*  
OTH 408 *Physical Impairment and Function 3*  
OTH 416 *Professional Decision Making*  
OTH 419 *Professional Values*  
OTH 432 *OT Interventions—Mental Health*  
OTH 480 *Current Topics in Occupational Therapy*  
OTH 497 *Senior Research*

### **Summer Semester—Beginning Third Year**

OTH 540 *Level II Fieldwork 1*

### **Fall Semester—Third Year**

OTH 480 *Current Topics in Occupational Therapy*  
OTH 500 *Health Care Issues in OT*  
OTH 503 *OT in Pediatrics*  
OTH 520 *OT in the Work Environment*  
OTH 551 *OT in Prevention and Wellness*  
OTH 570 *Advanced Theory in OT*  
OTH 697 *Supervised Research in OT*

### **Spring Semester—Third Year**

OTH 480 *Current Topics in Occupational Therapy*  
OTH 501 *Management for OT Practice*  
OTH 550 *Education in OT Practice*  
OTH 640 *Level II Fieldwork 2*  
OTH 697 *Supervised Research in OT*

## **Division of Physical Therapy**

MaryBeth Mandich, P.T., Ph.D., Chair  
<http://www.hsc.wvu.edu/som/pt>

### **Degree Offered**

*Doctor of Physical Therapy (D.P.T.)*

### **Nature of Program**

The WVU Division of Physical Therapy was established in 1970 under the auspices of the School of Medicine to help meet the need for physical therapists in West Virginia. The program is accredited by the Commission on Accreditation in Physical Therapy Education, a specialized body recognized by the Council on Postsecondary Accreditation. The program became an entry-level doctoral degree program in Fall 2005. Thirty full-time students are admitted each year. Preference is given to West Virginia residents and non-residents who have attended a West Virginia college or university or who have ties to West Virginia. All other non-residents who meet program requirements will also be considered for admission.

Students admitted into the program complete three years of combined classroom, laboratory, and clinical education, and part-time and full-time supervised clinical practice in various clinics in West Virginia and other states. A doctor of physical therapy (D.P.T.) degree is awarded to those completing the program, and entitles the graduate to apply for examination for state licensure. A license to practice physical therapy is required by all states.

### **The Profession of Physical Therapy**

Physical therapy is a hands-on health care profession that promotes optimal health and function through the application of scientific principles to prevent, identify, assess, correct, or alleviate acute or prolonged movement dysfunction. The goal of physical therapy is to help individuals reach their maximum potential and to contribute to society while learning to live within the limits of their capabilities.

Demand for physical therapy services is expected to continue over the next ten years. The demand for physical therapists in all practice settings is affected by such factors as an aging population and increased emphasis on a healthy, active lifestyle. The professional organization represents therapists on health care issues and is working hard to assure that physical therapy will continue to be a favorable career choice.

Physical therapists are respected members of the health care team. They work with other health care providers such as physicians, occupational therapists, rehabilitation nurses, psychologists, social

workers, dentists, podiatrists, and speech pathologists and audiologists. Physical therapists work in hospitals, private physical therapy offices, community health centers, corporate or industrial health centers, sports facilities, research institutions, rehabilitation centers, nursing homes, home health agencies, schools, pediatric centers, and colleges and universities.

Some physical therapists work as employees in these settings, while others are self-employed as owners or partners in private practices. Settings, employment arrangements, career responsibilities, and career opportunities depend on the interests and skills of each practitioner.

## The Admissions Process

Courses recommended for high school students in preparation for the preparatory and professional physical therapy program include, but are not limited to, biological sciences (e.g. anatomy, advanced biology, physiology, etc.), chemistry, algebra/trigonometry and/or pre-calculus, physics, and social sciences. Computer literacy is highly recommended.

Because individualized instruction in laboratories and clinics is an essential component of the professional physical therapy program, enrollment must be limited. The physical therapy program selects 30 students per year for entrance into the professional phase of the program. All students who wish to enter the program must apply for admission, must have a bachelor's degree, and have completed or be enrolled in the pre-requisite coursework detailed below. These courses are available at most colleges.

The following requirements must be met to apply to the WVU Physical Therapy Program:

- Applicant must have a minimum cumulative GPA of 3.0. Applicant must have a minimum prerequisite science GPA of 3.0 which includes two general biology courses, two chemistry courses, two physics courses, statistics, anatomy, and human physiology.
- Applicants must have a minimum of 60 hours of clinical volunteer or work experience obtained from two different physical therapy settings. Though these hours may be obtained during high school and college, some volunteer hours obtained during the junior or senior college years is strongly recommended.
- Applicants must submit two letters of recommendation from physical therapists with whom the student has worked or volunteered. Forms for the recommendation letters will be provided in the application packet. These letters must be from licensed physical therapists; the Admissions Committee will not consider letters from non-physical therapists.
- Applicant must submit one letter of recommendation from a professor from their undergraduate major. The form for the recommendation will be provided in the application packet.
- Applicant must take the Graduate Record Examination (GRE). While no minimum score is required, a combined verbal/quantitative score of at least 1,000 and a writing score of at least 4.0 will be considered competitive.
- Applicant must have a minimum grade of C in each pre-requisite course.
- Applicant must have completed or be enrolled in the required courses listed below:

### Pre-requisite Courses

Biology with lab (8 hours)

Chemistry with lab (8 hours)

Physics with lab (8 hours)

General psychology (3 hours)

Developmental psychology (3 hours)

must include development across the human lifespan

Introductory statistics (3 hours)

must include descriptive and inferential statistics

Human anatomy (3 hours)

The anatomy courses included in the DPT curriculum are extremely rigorous. Students should seek out the highest level anatomy course(s) available. The minimum prerequisite is a 3 credit hour course in human anatomy; ideally with a laboratory. Combined anatomy & physiology courses may not be substituted for this prerequisite.

Human physiology (3 hours)

PSIO 441 is strongly recommended. A two semester, one-year sequence of combined anatomy and physiology may be substituted for the human physiology course requirement.

### WVU Course Number

BIOL 101/103; 102/104

CHEM 115, 116

PHYS 101, 102

PSYC 101

PSYC 241

STAT 211 or ECON 225

ATTR 219 (recommended)

or

NBAN 205

PSIO 241 or PSIO 441

(recommended), BIOL 235

It is recommended that prerequisite courses in human anatomy and human physiology be completed within two years prior to admission.

WVU maintains an online Course Equivalency System (CES) (<http://www.arc.wvu.edu/tes/index.php>) that lists course equivalencies at many institutions in the state/region.

Applicants who complete any of their prerequisites outside of WVU should check the CES to see if each prerequisite course transfers directly to WVU as the required WVU course. If your undergraduate institution is not listed in the CES, or if you have taken prerequisite courses that transfer in as open credit or not equivalent, you must submit a photocopy of the catalog description of the courses in question. Upon receiving your application, the Admissions Committee may request that you submit a copy of the course syllabus for further review.

## Baccalaureate Preparation

Applicants must have earned a baccalaureate degree, or plan on completing a baccalaureate degree by May of the year of entering the program. Students may apply with a number of different baccalaureate degrees; however, they must complete the pre-requisites for the physical therapy program as described no later than the Spring semester of the year of application.

Students who want careers in health care may find that physical therapy fulfills their goals. A recommended baccalaureate preparation is in the field of exercise physiology. At WVU, exercise physiology majors will be able to obtain all of the pre-requisites listed above during their course of study. Another common baccalaureate major may be biology. As discussed above, these are merely suggestions and students can apply from any institution of higher education with any degree background, as long as they meet the aforementioned pre-requisites.

## Additional Information and Updates

For updates, be sure to periodically check the WVU Division of Physical Therapy Web site (<http://www.hsc.wvu.edu/som/pt>). You may also contact the program manager for the physical therapy program, Brenda Wolfe, at [bwolfe@hsc.wvu.edu](mailto:bwolfe@hsc.wvu.edu).

## Applications

Application packets are available from the Health Sciences Center Admissions and Records office beginning December 1. (P.O. Box 9815, Morgantown WV 26506-9815; (304) 293-3521.) The deadline for submission of application materials is typically January 31. The official deadline will be posted on the Web site and printed in the admissions packets.

## Physical Therapy (PT)

Course information for the doctor of physical therapy degree can be found on the following Web site: <http://www.hsc.wvu.edu/som/pt>.

### Physical Therapy Curriculum

Note: This is subject to change without notice.

#### Summer

Pre-First Year (II)	Hrs.
PT 705 <i>Intro. to Evid. Based PT</i> .....	2
PT 706 <i>Adv. Clinical Anatomy</i> .....	5
<b>Total</b> .....	<b>7</b>

#### First Professional Year

First Semester	Hrs.
PT 711 <i>Professional Roles 1</i> .....	3
PT 713 <i>Fun. Mvmt. Across Lifespan</i> ....	2
PT 714 <i>Clinical Sciences 1</i> .....	4
PT 715 <i>Evidence Based PT 1</i> .....	1
PT 716 <i>Kinesiology Foundations</i> .....	4
PT 718 <i>Evaluation Procedures</i> .....	3
<b>Total</b> .....	<b>17</b>

Second Semester	Hrs.
PT 724 <i>Exercise Foundations</i> .....	3
PT 720 <i>Clinical Education</i> .....	2
PT 723 <i>Developmental Life Tasks</i> .....	3
PT 725 <i>Evidence Based PT 2</i> .....	3
PT 727 <i>Neurobiologic Foundations</i> .....	4
PT 728 <i>PT Procedures 1</i> .....	3
<b>Total</b> .....	<b>18</b>

Summer Years 1-2 (I, II)	Hrs.
PT 730 <i>Clinical Ed. Symposium 1</i> .....	1
PT 732 <i>Physical Thera. Agents 1</i> .....	2
PT 733 <i>Cardiopulmonary PT</i> .....	3
PT 742 <i>Phys. Therapeutic Agents</i> .....	2
PT 734 <i>Clinical Sciences 2</i> .....	2
PT 738 <i>PT Procedures 2</i> .....	3
<b>Total</b> .....	<b>13</b>

### Second Professional Year

First Semester	Hrs.
PT 740 <i>Clinical Ed. Symposium 2</i> .....	1
PT 741 <i>Professional Roles 2</i> .....	4
PT 743 <i>Geriatric Physical Therapy</i> .....	2
PT 745 <i>Evidence Based PT 3</i> .....	2
PT 746 <i>Orthopedic PT 1</i> .....	5
PT 744 <i>Clinical Sciences 3</i> .....	2
<b>Total</b> .....	<b>16</b>

Second Semester	Hrs.
PT 750 <i>Clinical Education 2</i> .....	2
PT 754 <i>Clinical Sciences 4</i> .....	4
PT 755 <i>Evidence Based PT 4</i> .....	2
PT 756 <i>Orthopedic PT 2</i> .....	3
PT 757 <i>Neurologic PT 1</i> .....	3
PT 797 <i>PT Research 1</i> .....	2
<b>Total</b> .....	<b>16</b>

Summer Years 2-3 (I, II)	Hrs.
PT 760 <i>Clinical Education 3</i> .....	6
<b>Total</b> .....	<b>6</b>

### Third Professional Year

First Semester	Hrs.
PT 791C <i>Special Topics in PT</i> .....	3
PT 797 <i>Research 2</i> .....	2
PT 761 <i>PT Roles 3</i> .....	3
PT 762 <i>Health Care Issues in PT</i> .....	2
PT 763 <i>Pediatric Physical Therapy</i> .....	3
PT 767 <i>Neurologic PT 2</i> .....	2
PT 768 <i>Prosthetics and Orthotics</i> .....	3
<b>Total</b> .....	<b>18</b>

Second Semester	Hrs.
PT 797 <i>Research 3</i> .....	1
PT 770 <i>Clinical Ed. Symposium 3</i> .....	2
PT 780 <i>Clinical Ed. 4</i> .....	8
<b>Total</b> .....	<b>11</b>

## Medical Technology

Martha J. Lake, Ed.D., C.L.S. (N.C.A.), M.T. (A.S.C.P.), Professor and Program Director  
Patricia Miller-Canfield, M.D., Assistant Professor and Medical Director

### Degree Offered

*Bachelor of Science in Medical Technology*

### The Profession

Medical technologists are clinical laboratory professionals educated in all aspects of clinical laboratory analysis including test development, performance, and evaluation. Medical technologists may work in many areas, including clinical chemistry, hematology, immunohematology, immunology, clinical microbiology, and molecular diagnostics. Practice settings include hospital, clinic, public health or private clinical laboratories; research, cytogenetic, pharmaceutical, or in-vitro fertilization laboratories; technical or sales representatives for medical manufacturers and suppliers; biotechnology, food and cosmetic industries; and state or federal crime laboratories.

### Nature of Program

The undergraduate program in medical technology began in 1945 and is administered by the School of Medicine. Students are admitted into the bachelor of science program after completing two years of pre-requisite courses in an accredited college or university. Students may be admitted directly into the program as entering freshmen with a high school grade point average of 3.75 or higher. The undergraduate curriculum includes 60 semester hours of pre-requisite courses (pre-medical technology curriculum), and 76 semester hours in the medical technology professional program in the School of Medicine. Students may complete the pre-requisite courses at any regionally accredited institution of higher education.

Since the last two years are professional in nature, students must be enrolled in the WVU School of Medicine for the entire period. The junior year (the first year of the professional curriculum) includes courses to introduce the student to the medical sciences and to prepare for the senior year curriculum. During the senior year (the second year of the professional curriculum), the student receives both didactic instruction and practical experience. Students receive practical experience at one of the programs affiliated hospital laboratories including, Ruby Memorial Hospital, Morgantown, WV; Monongalia County General Hospital, Morgantown, WV; Allegheny West Penn Health System, Pittsburgh, PA, and the WVU Eastern Division which includes City Hospital, Martinsburg, WV, and Jefferson Memorial Hospital, Ranson, WV. Students are required to complete a two, three- or four-week rural rotation at an approved site in West Virginia.

The WVU medical technology program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 W. Bryn Mawr Avenue, Suite 670, Chicago, IL 60631-3415, (773) 714-8880. Graduates are eligible for certification by the Board of Registry of the American Society for Clinical Pathology (ASCP) and the National Credentialing Agency for Laboratory Personnel (NCA).

## Other Programs

An articulation program is available for certified medical laboratory technicians (clinical laboratory technicians) who want to complete the requirements for a B.S. degree. Further information may be obtained by contacting the Medical Technology Program Office.

A part-time curriculum is available. Part-time students must meet the same admission requirements and application deadlines as full-time students. For further information, contact the Medical Technology Program Office.

## Admission to the Pre-Medical Technology Program

Students in the pre-medical technology program and direct admit students must meet the admission criteria of WVU. Pre-medical technology students are advised by the Undergraduate Academic Services Center. Medical technology faculty advises direct admit students. Prospective students should take mathematics, chemistry, and biology in high school.

Qualified applicants may enter the pre-medical technology program at the beginning of any semester, but the professional curriculum begins the fall semester after the student is admitted to the professional program. Admission to the pre-medical technology program does not assure admission to the professional program.

## Admission to the Professional Program

### Direct Admit

Students may be admitted directly into the medical technology program as freshman with a minimum high school grade point average of 3.75 and a minimum math component ACT score of 26 or a minimum math component SAT score of 600. They are advised by the medical technology program advisor and are automatically admitted to the professional program as long as they meet all admission requirements listed below. MTEC 100, 101, 200, and 201 are required courses for direct admit students.

### Traditional

Pre-medical technology students apply for admission into the junior year (first year in the medical technology program) before the second semester of the sophomore year in college. Fulfillment of the pre-medical technology curriculum does not assure admittance into the professional program (medical technology curriculum). Students are selectively admitted to the final two years of the professional program. Requirements for admission to the professional program include course requirements, grade point average, a personal interview, and letters of recommendation.

The course requirements (pre-requisites) are:

- English: six credits of composition and rhetoric (ENGL 101 and 102).
- Biology: eight credits of general biology (BIOL 101, 102, 103, and 104).
- Chemistry: eight credits of inorganic (CHEM 115 and 116), and four credits of organic (CHEM 231)\*.
- Mathematics: three credits of college algebra (MATH 126).
- Statistics: three credits of introductory statistics (STAT 211).
- GEC: 22–23 credits to satisfy objectives three through nine.

\*Transfer students must complete an organic chemistry courses (eight hours) that includes aliphatic and aromatic compounds with laboratory.

Although not required for admission to the medical technology professional program, eight credits of organic chemistry and eight credits of physics are suggested electives for those students interested in applying to medical school. A foreign language is recommended for students who plan to do graduate work.

Admission decisions are based upon the applicant's grade point average; recommendations; interview; and documented ability to successfully complete full-time academic work. Applicants should have a minimum grade point average of 2.5 (cumulative and science). Applicants may be admitted on probation if their GPA (cumulative or science) is less than 2.5. Applicants with less than a 2.0 GPA, either cumulative or science, will not be admitted. A GPA of 2.5 or above does not necessarily assure admission. Two letters of recommendation are required; at least one must be from a college science professor. A personal interview with the Medical Technology Admissions Committee may be required.

Admission of international students is in compliance with WVU regulations. At least one science course (chemistry or biology) must be completed at a regionally accredited institution of higher education in the United States.

## Application Procedure

Each year the medical technology program selects a limited number of students from the applications received for admission. Application forms for admission to the professional program are available after December 1 from the Office of the Assistant Director of Admissions and Records, WVU Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815 or from the WVU Office of Admissions and Records Web site: <http://www.arc.wvu.edu/admissions/applications.html>. The application fee is \$25 for residents and \$40 for non-residents. The priority date for returning the application form is February 15. The deadline is March 1 if the student expects to enter the program the following fall semester. If the class is not filled by those applications, the deadline may be extended until as late as the first business day in August.

### Curriculum Plan Pre-Medical Technology

#### First Year

First Semester	Hrs.
CHEM 115 <i>Fund. of Chemistry</i> .....	4
Elective*	3
MATH 126 <i>College Algebra</i> .....	3
BIOL 101 and 103 .....	4
MTEC 100 <i>Medical Technology</i> ** .....	1
<b>Total</b> .....	<b>15</b>

Second Semester	Hrs.
CHEM 116 <i>Fund. of Chemistry</i> .....	4
ENGL 101 <i>Comp. and Rhetoric</i> .....	3
Elective*	3
BIOL 102 and 104 .....	4
MTEC 101 <i>Medical Technology</i> ** .....	1
<b>Total</b> .....	<b>15</b>

#### Second Year

First Semester	Hrs.
Electives*	9
ENGL 102 <i>Comp. and Rhetoric</i> .....	3
MTEC 200 <i>Med. Tec. Termi.</i> *** .....	1
STAT 211 .....	3
<b>Total</b> .....	<b>16</b>

Second Semester	Hrs.
CHEM 231 <i>Organic Chemistry</i> .....	4
Electives*	9
MTEC 201 <i>Basic Med. Tech.</i> *** .....	1
<b>Total</b> .....	<b>14</b>

\* Graduate education curriculum courses to satisfy objectives three through nine.

\*\*MTEC 100 and 101 are required for direct admit students and highly recommended for pre-medical technology students.

\*\*\*MTEC 200 and 201 are required courses for direct admit students and optional for pre-medical technology students.

### Medical Technology

#### Third Year (Medical Technology 1)

First Semester	Hrs.
PATH 300 <i>Intro. to Pathology</i> .....	3
PATH 320 <i>Basic Clinical Biochem.</i> .....	3
PSIO 441 <i>Mech. Body Function</i> .....	4
PATH 380 <i>Intro. to Immunology</i> .....	1
PATH 303 <i>Laboratory Applications</i> .....	2
<b>Total</b> .....	<b>13</b>

Second Semester	Hrs.
MICB 327 <i>Microb. Parasitology</i> .....	2
MICB 323 <i>Microbiology</i> .....	5
PATH 340 <i>Intro. to Hematology</i> .....	3
MTEC 310 <i>Clin. Lab. Mycology</i> .....	1
MTEC 470 <i>Clinical Microscopy</i> .....	1
MTEC 472 <i>Urinalysis/BF lab</i> .....	1
MTEC 381 <i>Research, Ed. Meth*</i> .....	2
MTEC 329 <i>Clinical Chemistry I</i> .....	1
<b>Total</b> .....	<b>16</b>

\*Writing course

#### Fourth Year (Medical Technology 2)

Students receive didactic and clinical instruction during the fourth (senior) year. The senior year includes summer, fall, and spring semesters. Any competencies not completed must be made up by the end of the school year (mid-May) or graduation may be delayed.

Students register for the following courses during the fourth year.

### Required Courses

	Hrs.
MTEC 401 <i>Phlebotomy</i> .....	1
MTEC 402 <i>Rural Health Practicum</i> .....	1
MTEC 403 <i>Community Service Practicum</i> .....	1
MTEC 420 <i>Immunohematology and Blood Banking</i> .....	3
MTEC 421 <i>Immunohematology and Blood Banking Laboratory</i> .....	3
MTEC 430 <i>Clinical Chemistry II</i> .....	3

MTEC 431 <i>Clinical Chemistry Laboratory</i> .....	3
MTEC 440 <i>Clinical Hematology</i> .....	3
MTEC 441 <i>Clinical Hematology Laboratory</i> .....	3
MTEC 450 <i>Clinical Microbiology</i> .....	3
MTEC 451 <i>Clinical Microbiology Laboratory</i> .....	3
MTEC 460 <i>Instrumentation</i> .....	2
MTEC 465 <i>Laboratory Management</i> .....	2
MTEC 475 <i>Medical Relevance of Laboratory Analyses</i> .....	2
MTEC 480 <i>Clinical Immunology</i> .....	2
MTEC 481 <i>Clinical Immunology Laboratory</i> .....	1
<b>Total</b> .....	<b>36</b>

## Graduation Requirements

### Junior Year

Students must maintain a grade point average of 2.0 for each semester to advance to the senior year. Failure to maintain a 2.0 GPA may result in probation or suspension. The Academic and Professional Standards Committee must recommend any student for advancement to the senior year. A satisfactory GPA does not assure advancement.

### Senior Year

A student must maintain a grade point average of 2.0 for each semester of the senior year. Graduation requires satisfactory completion of all academic work and the recommendation of the faculty of the School of Medicine.

Graduation is not dependent upon passing a national certification examination.

## Pathologists' Assistant

Cheryl Germain, MHS, PA (ASCP), Program Director  
cgermain@hsc.wvu.edu

Kenneth B. Fallon, M.D., Assistant Professor and Medical Director  
<http://www.hsc.wvu.edu/som/pa/>

### Degree Offered

*Master of Health Science*

### The Profession

A pathologists' assistant is a healthcare professional who is qualified through academic and practical training to provide services in anatomic pathology under the direction of a qualified pathologist. Pathologists' assistants serve as "physician-extenders"—much in the same manner as physicians' assistants. The addition of pathologists' assistants to the pathology team can reduce cost, increase revenue, and improve access to health care.

In practice, pathologists' assistants (PA) are responsible for the processing of the surgical pathology specimen from receipt to dissection and description to submission of tissue to histology. In autopsy practice, the PA is involved in reviewing the medical record of the decedent, evisceration, dissection, and selection of tissue for submission to histology as well as formulation of a preliminary anatomic diagnosis and autopsy report under the direction of a pathologist. Many PAs are involved in laboratory management, teaching at the University level, training of residents and medical students, forensic investigation, or research.

### Nature of Program

The graduate program in pathologists' assistant began in January 2008 and is administered by the School of Medicine. Students are admitted into the master of health science program after earning a baccalaureate degree from a regionally accredited college or university. Students with a cumulative grade point average of 3.25 or higher in the B.S. degree in medical technology program may be provisionally admitted directly into the pathologists' assistant program at the end of their junior year.

This program will be a 24-month master's level program that prepares graduates as allied health professionals for careers as pathologists' assistants.

During the second year, the student receives both didactic instruction and practical experience. Students receive practical experience at one of the programs affiliated medical laboratories including, West Virginia University Department of Pathology, Ruby Hospital, and Medical Examiner's Office, Morgantown, WV; Allegheny General Hospital, Allegheny General Hospital Suburban Campus, The Western Pennsylvania Hospital, The Western Pennsylvania Hospital Forbes Regional Campus, and Magee-Women's Hospital, Pittsburgh, PA; Alle-Kiski Medical Center, Natrona Heights, PA; Canonsburg General Hospital, Canonsburg, PA; and Thomas Memorial Hospital, Charleston, WV.

The WVU Pathologists' Assistant program is seeking accreditation from the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 W. Bryn Mawr Avenue, Suite 670, Chicago, IL 60631-3415, (773) 714-8880. Once the program is accredited, graduates will be eligible for certification by the Board of Registry of the American Society for Clinical Pathology (ASCP).

## Admission to the Pathologists' Assistant Program

All students seeking admission to the master of health science, pathologists' assistant program must meet the following admissions requirements:

- Hold an earned baccalaureate degree from a regionally accredited institution of higher education.
- Successfully completed the specific coursework in mathematics and sciences.
- Achieve a minimum GPA (cumulative and pre-requisite courses) of 3.0 on a 4.0 scale.
- Submit two letters of recommendation.
- Complete an interview with the Admissions Committee.
- Submit an admissions packet including the application form, personal statement, essential functions form, and official transcripts from all colleges and universities attended.

### Requirement

College Prep	Baccalaureate Degree*
Pre-requisite Courses	8 hr Biology with laboratory 8 hr College Chemistry with lab 4 hr CHEM 231, Organic Chemistry: Brief Course or 4 hr Biochemistry with laboratory or equivalent 4 hr Microbiology with laboratory 3 hr College algebra
Grade Point Average	3.0 cumulative 3.0 in the pre-requisite courses
Essential Functions	Review essential functions and submit the signed form
Recommendations**	Two letters of recommendation
Interview**	A personal interview with the Pathology Assistant Program Admission Committee

\* Students must have a baccalaureate degree prior to beginning the professional sequence. However, the program has established the following admissions classifications.

**Direct Admit** A limited number of students completing the bachelor of science in medical technology program who have a cumulative GPA of 3.25 may apply to the master of science, pathologists' assistant program at the end of their junior year. These students will be admitted into the program after completing the B.S. in medical technology.

\*\* Direct admit students are not required to submit recommendations nor complete an interview.

**Early Decision** A student may apply at the end of the third year in college (90 semester hours), if they have met all pre-requisites with the exception of the baccalaureate degree. Students may be accepted contingent upon satisfactory completion of the bachelor's degree.

**Regular Decision.** A student applies in the admission cycle during their senior year. Typically, application will be submitted in January of the senior year. Admission is contingent upon satisfactory completion of the baccalaureate degree.

## Performance Standards

Students are required to maintain a semester GPA of 3.0 to progress in the first and second year of the professional program.

## Application Procedure

Each year the pathologists' assistant program selects a limited number of students from the applications received for admission. Application packets for admission to the program are available after June 1 from the Office of the Assistant Director of Admissions and Records, WVU Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815 or from the WVU Office of Admissions and Records Web site: <http://www.arc.wvu.edu/admissions/applications.html#hscapps>. The application fee is \$25 for residents and \$40 for non-residents. Each applicant must arrange for transcripts to be sent directly from all undergraduate institutions attended to the Admissions and Records office.

When the application is complete, the file is sent to the Pathologists' Assistant Admissions Committee. A complete admissions packet contains: completed application form and personal statement, official transcripts, two references and Essential Functions form. Please note that the admissions office does not handle reference letters. Each application requires two letters of reference (one from a professor and one from a laboratory professional with whom you have worked.) Letters of reference should be mailed to: Cheryl Germain, Program Director, WVU Pathologists' Assistant Program, P.O. Box 9203, Morgantown, WV 26506-9203.

An interview will be granted to qualified applicants after a review of the application packets.

## **Pathologists' Assistant Program Essential Functions**

In accordance with Section 304 of the 1973 Vocational Rehabilitation Act, the West Virginia University pathologists' assistant program has adopted minimum technical standards for assessment of all applicants to the pathologists' assistant program.

Because the master's degree in health science/pathologists' assistant signifies that the holder has obtained minimum competencies in all areas of the anatomic pathology laboratories, it follows that graduates must have the knowledge and skills to function in a wide variety of laboratory situations and to perform a wide variety of procedures.

Candidates for the master's degree in health science/pathologists' assistant must have somatic sensation (sense of touch) and the functional use of the senses of vision and hearing. Candidate's diagnostic skills will also be lessened without the functional use of the sense of equilibrium, smell, and taste. Additionally they must have sufficient motor function to permit them to carry out the activities described in the sections that follow. They must be able to consistently, quickly, and accurately integrate all information received by whatever sense(s) employed, and they must have the intellectual ability to learn, integrate, analyze, and synthesize data.

A candidate for the master's degree in health science/pathologists' assistant must have abilities and skills which include observation, communication, motor, conceptual, integrative, quantitative, behavioral, and social. Technological compensation can be made for some handicaps in certain of these areas but a candidate should be able to perform in a reasonably independent manner. The use of a trained intermediary means that a candidate's judgment must be mediated by someone else's power of selection and observation.

1. **Observation:** the candidate must be able to observe demonstrations, procedures, and instruments in the basic sciences and clinical courses. Observation necessitates the functional use of the sense of vision and somatic sensation. It is enhanced by the functional use of the sense of smell.
2. **Communication:** a candidate should be able to speak, hear, and observe people in order to elicit information and perceive nonverbal communications. A candidate must be able to communicate effectively and efficiently in oral and written form with members of the health care team.
3. **Motor:** candidates should have sufficient motor function to perform laboratory procedures. This action requires the coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.
4. **Intellectual—Conceptual, integrative, and quantitative abilities:** these abilities include measurement, calculation, reasoning, analysis, and synthesis. Problem solving requires all of these intellectual abilities. In addition, the candidate should be able to comprehend three-dimensional relationships and to understand spatial relationships of structures.
5. **Behavioral and Social Attributes:** a candidate must possess the emotional health required for full utilization of his/her judgment, the prompt completion of all responsibilities, and the development of mature, sensitive relationships with patients and co-workers. Candidates must be able to tolerate physically taxing workloads and to function effectively under stress. They must be able to adapt to changing environments, to display flexibility, and to learn to function in the face of uncertainties. Compassion, integrity, concern for others, interpersonal skills, interest, and motivation are all personal qualities that should be assessed during admissions and education process.

In its evaluation of applicants to the WVU pathologists' assistant program, the Admissions Committee will approach each applicant with the following questions in mind. When an applicant does not meet a non-academic standard as defined above, and when this would in the professional judgment of the committee, not satisfy the pathologists' assistant objectives for the student in performing laboratory procedures, education, and research, such opinion will be documented by the Admissions Committee.

The questions are not designed to disqualify an applicant but rather to give the Admissions Committee more complete information about an applicant's ability to meet these nonacademic standards:

1. Is the candidate able to observe demonstrations and perform procedures in the basic sciences and clinical courses?
2. Is the candidate able to analyze, synthesize, solve problems, and make judgments about results obtained on patient specimens?
3. Does the candidate have sufficient use of the senses of vision, hearing, and somatic sensation necessary to perform the indicated laboratory procedures?
4. Can the candidate reasonably be expected to communicate the results of laboratory tests to other members of the health care team with accuracy, clarity, and efficiency?
5. Can the candidate reasonably be expected to learn and perform laboratory tests and operate instruments?
6. Can the candidate reasonably be expected to display good judgment in the analysis of procedure results?
7. Can the candidate reasonably be expected to accept criticism and respond by appropriate modification of behavior?
8. Can the candidate reasonably be expected to possess the perseverance, diligence, and consistency to complete the pathologists' assistant program and to become a practicing pathologists' assistant?

### Curriculum

#### Spring

Year One	Hrs.	Year Two	Hrs.
PATH 603 <i>Human Anat. for PAs</i> .....	5	PATH 627 <i>Path Asst. Practicum I</i> .....	9
PATH 625 <i>Anatomical Path Tech.</i> .....	4	PATH 630 <i>Pathology Review I</i> .....	2
FIDP 493B <i>Adv. Forensic Photo.</i> .....	3	<b>Total</b> .....	<b>11</b>
PATH 728 <i>General Pathology</i> .....	5		
<b>Total</b> .....	<b>17</b>		

#### Summer

Year One	Hrs.	Year Two	Hrs.
PATH 620 <i>Clin. Path. Seminar</i> .....	1	PATH 628 <i>Path Asst. Practicum II</i> .....	9
PATH 751 <i>Mech. of Disease.</i> .....	12	<b>Total</b> .....	<b>9</b>
PATH 520 <i>Molecular Diag.</i> .....	1		
<b>Total</b> .....	<b>14</b>		

#### Fall

Year One	Hrs.	Year Two	Hrs.
PSIO 441 <i>Mech. of Body Function</i> .....	4	PATH 629 <i>Path Asst. Practicum III</i> .....	7
PATH 610 <i>Ed. Methodologies</i> .....	1	PATH 631 <i>Pathology Review II</i> .....	2
MICB 702 <i>Microbiology</i> .....	5	<b>Total</b> .....	<b>9</b>
MTEC 465 <i>Clin. Lab. Management</i> .....	2		
<b>Total</b> .....	<b>12</b>		

### Graduation Requirements

Students are required to maintain a GPA of at least 3.0 on all work taken as a graduate student while enrolled in the pathologists' assistant program. A minimum 3.0 GPA is required to graduate from the program.

### Medicine

<http://www.hsc.wvu.edu/som/students>

#### Degrees Offered

##### *Doctor of Medicine*

##### *Joint Doctor of Medicine and Doctor of Philosophy*

##### *Joint Doctor of Medicine and Master's in Public Health*

The degree of doctor of medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

The M.D./Ph.D. program is available to students who show exceptional interest and scholarly promise. All admission requirements of the School of Medicine and the specific graduate program apply. An M.D./M.P.H. program is available for those interested in public health issues.

The following information applies only to students in the School of Medicine who are enrolled in the prescribed curriculum which culminates in the M.D. degree. All other students, undergraduates, or graduates enrolled in other programs in the School of Medicine are governed by the policies found elsewhere in this catalog.

## Accreditation

The West Virginia University School of Medicine is accredited by the Liaison Committee on Medical Education (LCME).

## Admission Requirements

The student preparing for any career in the health professions must have a keen interest in the sciences.

The following courses are required for consideration of an application to medical school:

English	6	semester hours
Biological sciences (with lab)	8	semester hours
Inorganic chemistry (with lab)	8	semester hours
Organic chemistry (with lab)	8	semester hours
Physics (with lab)	8	semester hours
Social or behavioral sciences	6	semester hours

*Biochemistry* and *Cellular and Molecular Biology* are strongly recommended. A total of 90 semester hours, exclusive of ROTC and general physical education, is required. Computer skills are required. All required courses must be passed with a grade of C or better. All required classes must be completed prior to January 1 of the year of admission.

An excess of credit hours or higher degrees does little to offset the disadvantage of low grades when being considered for admission to the School of Medicine. Repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from WVU or other medical schools can be admitted only in very exceptional cases and at the discretion of the Admissions Committee.

## Pre-Admission Tests

The score of the Medical College Admissions Test (MCAT) is one of the factors used by the Admissions Committee in considering an applicant for admission. It is recommended that students take the MCAT during the spring of their junior year in college. The MCAT must be taken by September of the year of application. MCATs taken in January of the year of admission will not be considered. The dates for beginning and closure of application acceptances are available through AMCAS and on our Web site.

Information concerning the time and place of the test can be obtained from your premedical advisor, Admissions Committee, or the Office of Admissions and Records.

## Application Procedure

The admission process is initiated by completing the online American Medical College Application Service (AMCAS) forms. They are online at <http://www.aamc.org>.

Application for admission in August should be made at the end of the previous school year. The last date for filing an application is November 1. The applicant should file as early as possible, making certain that recent MCAT scores, current transcripts, and letters of recommendation are available to the Admissions Committee.

Admission preference is given to West Virginia residents and those non-resident applicants who have strong ties to the state, or verifiable interests in rural and primary care. No one specific factor is used to determine admission. However, careful consideration is given to those personal qualifications which apply to the study and practice of medicine. The criteria for admission include academic performance, course load, letters of recommendation, MCAT scores, motivation, interpersonal skills, community service, health care experiences, and a personal interview. An early decision program is available for those residents and non-residents with strong grades and MCATs who wish only to apply and attend WVU.

No applicant is admitted before an interview by the Admissions Committee. Residency status is determined by the Board of Trustees Policy Bulletin #36. Interviews and consideration of applicants begin in September. Acceptances are made on a rolling basis.

If an applicant is denied admission or does not enroll after acceptance, he or she must reapply in the regular manner for consideration in a subsequent year.

## Advanced Standing

Advanced standing positions are considered only in very exceptional circumstances and only to students currently attending a medical school accredited by the Liaison Committee on Medical Education (LCME). A request for transfer is usually considered during the second year. The application must be received no later than April 1. The applicant must present certification of good academic and professional standing in the school from which he/she is transferring. An official transcript of all prior medical school work, and recommendations are required from all medical schools attended. In addition, successful results of Step I of the United States Medical Licensure Examination must be available before action on an application can be finalized.

## **Conditions Following Acceptance**

An applicant accepted into the first year or in advanced standing is expected to meet all entrance requirements and satisfactorily complete all undergraduate/medical school work in progress. Failure to do so may result in the withdrawal of the acceptance by the Admissions Committee.

The student must be aware that furnishing, or causing to be furnished, false or incorrect information for the purpose of the School of Medicine application constitutes grounds for disciplinary actions, including, but not limited to, expulsion or revocation of the acceptance.

A criminal background check is required and must be successfully passed prior to matriculation. Certain convictions negate an offer to attend medical school at WVU.

Students in the School of Medicine agree to abide by the provision of an integrity code, which requires ethical and moral standards of conduct in all situations. Each student is required to return a signed statement to the Office of Student Services, indicating the student has read and understands the Student Professional and Academic Integrity Code of the West Virginia University School of Medicine. The code and copies of the statement are available on the Student Services Web site.

Prior to entering medical school, all students must complete certain prescribed immunization and diagnostic procedures. Personal health insurance is required.

## **Promotion and Graduation Requirements**

### **Evaluation of Student Progress**

Promotion of a student in the M.D. degree program is evaluated in four major areas: 1) successful completion of all required work, 2) successful completion of Step 1 and Step 2 of the United States Medical Licensure Examination (USMLE), 3) successful completion of a clinical physical examination competency test, and 4) successful fulfillment of the professional standards of the School of Medicine, including 100 hours of community service.

The following information is only a brief outline of the School of Medicine policies and procedures. Detailed requirements and policies for evaluation of student progress and graduation may be found in the Policy on Academic and Professional Standards Governing the M.D. degree program at WVU School of Medicine on the Student Services Web site. The Committee on Academic and Professional Standards administers all promotion and dismissal rules.

### **Academic Coursework Review**

The Committee on Academic and Professional Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work of all or a portion of the curriculum. Exceptions may be made only upon recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of incomplete (I) grades or by the repetition of courses in other medical courses.

It is the policy of the School of Medicine that the departments conduct examinations to help in the overall evaluation of student progress. In addition to the departmental examinations, other examinations may be conducted for other purposes. At the end of each year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion.

A student may be subject to remedial work or dismissal on recommendation of the Committee on Academic and Professional Standards to the dean even though no unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the committee, the student's overall performance does not meet the academic/professional standards of the School of Medicine.

Readmission of a dismissed student is the prerogative of the Admissions Committee after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic and Professional Standards.

### **Grading Policy**

All courses required for the M.D. degree are graded as honors (H), satisfactory (S), or unsatisfactory (U) at the completion of the course in lieu of other letter grades. The H, S, and U designations are accompanied by a narrative report of the student's progress, noting any factors requiring remedial work or counseling. The narrative is submitted by each course and filed in the Office of Student Services. A grade of U shall be regarded as a failing grade.

The grade of incomplete (I) is given when the instructor believes that the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure (unsatisfactory) unless special permission to postpone the work is obtained from the Committee on Academic and Professional Standards (University rule). All students who have a health problem which they feel may be causing difficulty with their academic progress are strongly advised to notify an associate dean for student services. It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses.

No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

### **United States Medical Licensure Examination (USMLE)**

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the United States Medical Licensing Examination (USMLE) is the only mechanism by which this license may be obtained. The School of Medicine requires a passing grade on Step I and Step II for promotion and graduation. A failing grade will delay progress and require remediation. Students are limited to three attempts on each step.

Step I is required upon successful completion of all basic science coursework. A passing grade in Step I is required for promotion into the clinical rotations. Step II (clinical knowledge and clinical skills) is required after successful completion of third-year clinical rotations. A passing score on Step II is required before a recommendation can be made to grant the M.D. degree by the School of Medicine faculty and Committee on Academic and Professional Standards.

*Licensure examinations are administered using a computer-based testing format.*

### **Professional Standards Review**

All non-disciplinary matters are governed by the concept of academic due process.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the president of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession. For further information the reader is referred to the Policy on Academic and Professional Standards Governing the M.D. Degree Program at West Virginia University School of Medicine, which is available at the School of Medicine Office of Student Services, and on the Student Services Web site.

### **Departure from Scheduled Work**

Medical students are registered for all prescribed courses for each semester except by special permission from the Committee on Academic Standards and an associate dean for student services of the School of Medicine. This permission is not valid until it has been reported to the assistant director of admissions and records, Health Sciences Center, and for record, the Office of Student Services, School of Medicine.

Interruption of academic work must be approved by the Office of Student Services.

### **Curriculum**

The field of medicine is rapidly changing. The following curriculum outline is the plan that is presently in place. However, the medical school curriculum at WVU will change as needs dictate.

### **Community Service**

All students of the Health Sciences Center are required to perform community service as a component of their curriculum. Medical students must complete 100 hours of community service prior to graduation.

### **Medical Education Program of Study**

The medical education curriculum was restructured in 1998 and again in 2007. The most significant changes include: 1) students will begin clinical experiences early in their first year of medical school; 2) the basic science disciplines have been integrated; 3) incoming medical students will be required to lease a windows-based laptop to use in the new curriculum that will incorporate information and academic technologies in the delivery of instruction.

With these principles in mind, the old semester (college-like) schedule of the first year, for example, physiology, gross anatomy, biochemistry, neurobiology, microanatomy, epidemiology, and psychiatry have been replaced. Now there are three blocks of basic science including physical diagnosis and clinical integration running concurrently for the first year.

## Medicine III Clerkships

Weeks

8	Medicine
8	Surgery
8	Behavioral Medicine and Psychiatry with two weeks of Neurology
8	Obstetrics and Gynecology
8	Pediatrics
8	Family Medicine including one month Rural Rotation
48	Total

## Medicine IV Rotations

8	Two-Month Rural
4	Subinternship
4	Critical Care/Anesthesia
18	Electives
34	Total

## Medicine I (38 wks.)

	Fall (16 wks.)	Winter (15 wks.)	Spring (7 wks.)	
Hrs.				Hrs.
-wk.				-wk.
1	CCMD 730	NBAN 703	CCMD 775	1
2	<b>Human Function</b>	<b>Human Structure</b>	<b>Neurobiology</b>	2
3				3
4				4
5	Integrated:	Integrated:	Integrated:	5
6	Biochemistry,	Gross Anatomy,	Neuro-	6
7	Physiology,	Histology,	-Anatomy,	7
8	Genetics	Embryology	-Physiology	8
9				9
10				10
11				11
12				12
13				13
14				14
15	-----			15
16	<b>Problem-Based</b>			16
17	<b>Learning</b>			17
18	(1.5 hrs./wk.)			18
19				19
20	CCMD 712	CCMD 746		20
21	<b>Epidemiology/Biostatistics</b>	<b>Physical Diagnosis and</b>		21
22	<b>/Public Health</b>	<b>Clinical Integration 1</b>		22
23				23
24	CCMD 745			24
	<b>Physical Diagnosis and</b>			
	<b>Clinical Integration 1</b>			

## Medicine II (34 wks.)

	Fall	Winter	Spring	
Hrs.				Hrs.
-wk.				-wk.
1	MICB 701	PATH 751	PCOL 761	1
2	<b>Immunity,</b>	<b>Mechanisms</b>	<b>Medical</b>	2
3	<b>Infection, and</b>	<b>of Disease</b>	<b>Pharmacology</b>	3
4	<b>Disease</b>			4
5				5
6		Pathology	Pharmacology	6
7	Integrated:		and	7
8	Microbiology,	(18 hrs./wk.)	Toxicology	8
9	Immunology,			9
10			(18 hrs./wk.)	10
11				11
12				12
13	(18 hrs./wk.)			13
14				14
15				15
16				16
17				17
18				18
19				19
20				20
21	CCMD 740	CCMD 725		21
22	<b>Behavioral Science</b>	<b>Ethics (8 wks.)</b>		22
23	<b>&amp; Psychopathology (16 wks.)</b>			23
24				24
25	CCMD 721	CCMD 722		25
	<b>Physical Diagnosis</b>	<b>Physical Diagnosis and Clinical Integration 2</b>		
	<b>and Clinical</b>			
	<b>Integration 2</b>			

## First Year

Medical students' first year: 38-week academic year divided into three blocks (16 weeks, 15 weeks, and seven weeks). Approximately 24 scheduled hours per week. Each block contains three courses: a basic science multidisciplinary course, epidemiology, biostatistics and public health, and physical diagnosis and clinical integration (large group alternating every other week with small groups). While physical diagnosis and clinical integration runs throughout the year, the basic science component changes each block. The first block (16 weeks) contains a multidisciplinary run course: human function (physiology, biochemistry, and genetics.). Second block (15 weeks) consists of human structure (gross anatomy, embryology, and microanatomy: large group, and laboratory). Third block (seven weeks) consists of multidisciplinary neuroscience (ten hours large group, laboratory, and small group). A weekly problem-based learning group (PBL) is maintained throughout the first year.

## Second Year

Medical students' second year: 34-week academic year divided into three blocks (ten weeks, 16 weeks, eight weeks). Approximately 26 scheduled hours per week. Each block contains three courses: a basic science multidisciplinary course, physical diagnosis and clinical integration (four hours per week), and behavioral science and psychopathology, and ethics (2.5 hours per week). Physical diagnosis and clinical integration runs throughout the year; the basic science component changes each block. The first block (ten weeks) is a single course integrating microbiology and immunology (18 hours per week). The second block (16 weeks) consists of mechanisms of human disease (pathology: 18 hours per week), and the third block (eight weeks) consists of medical pharmacology (18 hours per week).

## Clinical Years

The last two years of study take place in the clinics, hospitals, and community settings where students have the opportunity to help diagnose and treat patients under supervision of the faculty and staff. All students will serve a significant portion of the clinical years training at an off-campus or rural site.

## Third Year

In the third year the student must spend a designated period of time in each of the major clinical disciplines: internal medicine, surgery, pediatrics, obstetrics and gynecology, psychiatry and neurology, and family medicine. This gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines. One month is spent in rural primary care.

Approximately one-third of each class is selected during their first year to spend the third and fourth year at the Charleston Division of the Robert C. Byrd Health Sciences Center of West Virginia University. A smaller number of students will also complete their clinical work on the Eastern Division Campus.

## Fourth Year

The fourth year is a partially structured and partially elective year. Each student works with an advisor to select the program best suited to the individual's abilities and goals. Courses selected are subject to approval of an associate dean in the Office of Student Services.

Four months of the senior year are committed to required clerkships at the home campus which include one month in internal medicine, family general medicine, surgery, or pediatric sub-internship; one month of acute care; and two months of rural primary care. The remaining 4.5 months of the senior year are elective at approved teaching sites.

A catalog is available online that lists the approved electives and selection guidelines at <http://education.hsc.wvu.edu/ms4catalog>.

Students interested in other extramural opportunities are advised to consult with the fourth-year curriculum coordinator in the Office of Student Services. Elective time must be spent in LCME (Liaison Committee on Medical Education) or JCAH (Joint Council of American Hospitals) accredited institutions. Foreign rotations, regardless of sponsorship, are limited to one month credit.

# School of Nursing

Georgia L. Narsavage, Ph.D., R.N., F.A.A.N., Dean  
Mary Jane Smith, Ph.D., R.N., Associate Dean for Graduate Academic Affairs  
Elisabeth Shelton, D.N.Sc., R.N., Associate Dean for Undergraduate Academic Affairs  
Cynthia Armstrong Persily, Ph.D., R.N., F.A.A.N., Associate Dean for Academic Affairs,  
Southern Region; Chair, Charleston Division  
June Lunney, Ph.D., R.N., Associate Dean for Research  
Stuart Wells, M.A., Assistant Dean for Student Services

<http://www.hsc.wvu.edu/son>

## Degrees Offered

*Bachelor of Science in Nursing*

*Master of Science in Nursing*

*Doctor of Nursing Practice*

*Doctor of Philosophy in Nursing*

## Introduction

The mission of the WVU School of Nursing is to serve the people of West Virginia and the larger society through education, research, and service, including faculty practice. This mission is responsive to changing health care needs and emerging national and state changes in technology and health care delivery, and is enhanced by a supportive and open environment. The faculty's educational effort is directed at providing high quality student-centered programs of instruction at all levels which prepare superb professional nurses to meet basic health care needs; advanced practice nurses to address complex health needs; and doctorally educated nurses to advance nursing knowledge through research; to assist in the formulation of policies to improve health care; and to serve as faculty in higher degree programs. Unique characteristics of the state mandate that the health care needs of rural populations and vulnerable groups be a major focus of education, research, and service, including faculty practice.

The School of Nursing offers undergraduate, graduate, and post-master's programs of study. The baccalaureate program (B.S.N.) is available for high school graduates who aspire to a career in nursing (basic students) and to registered nurses (R.N.) who are licensed graduates of associate degree or diploma nursing programs seeking to continue their career development. A B.S./B.A. to B.S.N. program is available for the college graduate seeking a B.S.N.

The master of science in nursing (M.S.N.) prepares graduates for advanced practice roles in rural primary health care. These roles include family nurse practitioner, pediatric nurse practitioner, and neonatal nurse practitioner. Additional advanced practice programs are under development.

Post-graduate nurse practitioner certification programs in these specialties are available for those who already have an M.S.N. The R.N. to M.S.N. program also has these specialties available.

The doctor of nursing practice (D.N.P.) prepares advanced practice nurses who will practice at the highest level of professional nursing and will advance the application of nursing knowledge for the purpose of improving health care for diverse populations.

The doctor of philosophy in nursing (Ph.D.) prepares nurse scholars/educators for roles in teaching, service, and research in nursing. The program prepares graduates who will continue unique nursing experience to the collaborative development of knowledge to improve health and quality of life.

## Accreditation

The baccalaureate program received initial accreditation with graduation of the first class in 1964. The master's program was initially accredited in 1981. Currently, these programs are fully accredited by the national accrediting agency, the Commission on Collegiate Nursing Education, and approved by the West Virginia Board of Examiners for Registered Professional Nurses.

## Fees, Expenses, Housing, Transportation, Immunization

Students enrolling at the Morgantown campus pay the fees shown in the *WVU Health Sciences Catalog* charts, plus special fees and deposits as required. Students enrolling at other sites pay the fees shown in the catalog for that site. Fees are subject to change without notice. Students' expenses vary according to the course of study and individual tastes. Information concerning financial assistance, application forms, and the Free Application for Federal Student Aid (FAFSA) form may be obtained from the financial aid Web site: <http://www.hsc.wvu.edu/fin/> or by contacting the HSC Financial Aid Office, Health Sciences North, P.O. Box 9810, Morgantown, WV 26506-9810, telephone (304) 293-3706.

The University Housing and Residence Life Office, telephone (304) 293-3621, provides information concerning University-owned housing. The Student Life Office, telephone (304) 293-5611, provides information for privately owned, off-campus housing.

Students are expected to provide their own transportation, equipment, and instruments for the clinical courses. Some clinical experiences require travel in a multi-county area.

Proof of specific immunizations is required for all health sciences students.

## **Scholarships**

The School of Nursing offers scholarships administered by the University's Financial Aid Office and require completion of the Free Application for Federal Student Aid (FAFSA) form in order to be considered for financial aid.

## **Additional Information**

Visit the School of Nursing Web site at <http://www.hsc.wvu.edu/son>. Call the WVU School of Nursing Office of Student Services at 1-866-WVUNURS or (304) 293-1386. Write to WVU School of Nursing at P.O. Box 9600, Morgantown, WV 26506-9600.

## **Undergraduate Program**

The School of Nursing undergraduate program in nursing is recognized by health care agencies as providing excellent preparation for the nursing profession. Our graduates are in great demand and enjoy a large number of career opportunities. The B.S.N. curriculum includes courses in the humanities, social sciences, basic sciences, and nursing science. These courses are taken in conjunction with nursing clinical courses that enable students to apply their learning to actual client, family, and community situations that warrant nursing intervention. The curriculum has been carefully designed to equip graduates to begin professional nursing practice with clients of all ages in any health care setting where there is a position for the professional nurse at the start of his or her career. The program also provides an excellent foundation for graduate study in nursing and in other fields.

The baccalaureate program (B.S.N.) is available for high school graduates who aspire to a career in nursing (basic students). It is also available to registered nurses (R.N.s) who are licensed graduates of associate degree or diploma nursing programs seeking to continue their career development, and to individuals with college degrees in other fields who wish to attain the bachelor of science in nursing. The basic B.S.N. program can be completed in four years at WVU's Morgantown campus or at WVU Institute of Technology. Programs with Glenville State College and WVU Potomac State College allow students to complete the first two years at those schools. Glenville students complete the program at WVU Tech; WVU Potomac State students complete the program in Morgantown.

The R.N. to B.S.N. program is completely Web based, with asynchronous course delivery. Registered nurses can apply for the program at WVU in Morgantown, at the Charleston division, at WVU Tech, at WVU Parkersburg, or at Glenville State College. Courses are delivered via the Web, and academic advising is based at the campus to which the student is admitted. Nursing courses for R.N. students are scheduled to provide opportunity for completion of degree requirements in three semesters if non-nursing courses are already completed. Credit may be earned by enrollment and by challenge through advanced placement and portfolio exams.

A B.S./B.A. to B.S.N. accelerated program is available for the college graduate with a degree in a field other than nursing. Following 18 months of continuous enrollment, students attain the B.S.N. degree and are eligible to take the R.N. licensing examination. The B.S./B.A. to B.S.N. program is offered at WVU in Morgantown.

In keeping with the University's commitment to the West Virginia Rural Health Education Partnerships (WVRHEP) program and to improving health care for all West Virginians, all health sciences students in state supported schools complete a rural clinical practice requirement of at least three months duration as part of degree requirements. Nursing students complete the rural clinical practice requirement during their senior year.

## **Direct Admission to Basic Program**

Applicants are eligible to enter the B.S.N. program as freshmen. Admission is based on a combination of high school grade point average and composite ACT or total SAT scores in a single testing session. Students admitted to the nursing major as freshmen have a total of three semesters to complete the required freshman coursework.

High school students eligible for admission to the University are admitted directly into nursing if they meet the following criteria.

<b>GPA</b>	<b>Composite ACT</b>	<b>Total SAT</b>
3.6 or higher	25 or higher	1140 or higher

In addition, students must have completed the high school credits required by the University:

Units (years)

- 4 English (including courses in grammar, composition, and literature)
- 3 Social studies (including U.S. history)
- 3 College preparatory mathematics (algebra I, algebra II, and plane geometry)
- 2 Laboratory science (biology, chemistry, physics, or other courses with a strong laboratory science orientation)

## Admission to Basic Program as Pre-Nursing or Other College Major

If a student does not meet the nursing admission criteria to be directly admitted to the B.S.N. program as a freshman, the student can apply for admission to the B.S.N. program as a sophomore after completion of one semester of college coursework with a cumulative GPA of 2.8.

Application to the basic B.S.N. program must be made by February 1 of the year the candidate wishes to be admitted. Acceptance and placement in the program are dependent upon space available in the program. There are limited spaces available and the best qualified applicants are accepted. Application forms are distributed after December 1 by the Health Sciences Center Office of Admissions and Records, or are available online from the Admissions and Records Web site. Qualified applicants will be invited for an interview as part of the admissions process.

Note: Admission criteria are subject to change. Please see the School of Nursing Web site for the most up-to-date criteria at: <http://www.hsc.wvu.edu/son/>.

## First Year Basic Student Curriculum

All freshman basic students admitted to the school complete a common curriculum designed to provide the foundation for success in subsequent nursing courses.

### First Year

First Semester	Hrs.	Second Semester	Hrs.
CHEM 111 .....	4	CHEM 112 .....	4
PSYC 101 .....	3	ENGL 101 .....	3
SOCA 101 or 105 .....	3	BIOL 102 and 104 .....	4
HN&F 171 .....	3	PSYC 241 .....	3
*MATH 124 or 126 .....	3	NSG 110 .....	3
UNIV 101 .....	1	<b>Total</b> .....	<b>17</b>
<b>Total</b> .....	<b>17</b>		

\* MATH 124 or 126 may be waived with an ACT math score of 24 or SAT math score of 560.

Students admitted to the School of Nursing as sophomores must have completed the freshman year courses prior to beginning the sophomore year. All freshman year courses must be completed with a grade of C or better.

## Transfer Students

Students with nursing credit from an accredited college or university are eligible for consideration for transfer admission by presenting a record of courses comparable to those required in this curriculum and meeting other School of Nursing admission requirements. Students must provide a statement of good standing from the nursing program in which they are currently enrolled. Acceptance and placement in the program is dependent on the individual's academic record and the number of spaces available. Transfer students must have a cumulative GPA of 2.8 for previous college coursework, and must have earned at least a C in all nursing and pre- and co-requisite non-nursing courses.

## B.S./B.A. to B.S.N. Admission

Applicants for the B.S./B.A. to B.S.N. program must have a baccalaureate degree from an accredited college or university with a cumulative GPA of at least 2.8 on a 4.0 scale.

The following prerequisite courses must be completed with a grade of C or better prior to enrollment:

	Hrs.
English 101 and 102.....	6
Chemistry .....	3-4
Biology.....	3
Human Anatomy.....	3-4
Human Physiology.....	3-4
Microbiology .....	3-4
Statistics.....	3
Introductory Psychology.....	3
Introductory Sociology.....	3
Lifespan Growth and Development.....	3
Human Nutrition.....	3

Note: Admission criteria are subject to change. Please see the School of Nursing Web site for the most up-to-date criteria at: <http://www.hsc.wvu.edu/son/>

## Criminal Background Checks

Students are required by clinical agencies to undergo a criminal background check prior to clinical experiences. Felony convictions and some serious misdemeanors may preclude participation in clinical rotations. This could, in turn, prevent the completion of clinical course requirements, and completion of the nursing program.

## Academic Standards and Graduation Requirements

To be in good academic standing, students must:

1. Maintain a cumulative GPA of 2.8 or better in all college work attempted.
2. Pass all nursing courses and pre- or co-requisite non-nursing courses with a grade of C or better.

A student who receives a grade of D, F, WU, or W in a required nursing course or pre- or co-requisite non-nursing course may repeat that course once and must earn a grade of C or better when the course is repeated. Nursing courses and pre- and co-requisite courses in which students earn a grade of D, F, W or WU must be repeated prior to the student's progression to the next course in the nursing sequence. Nursing courses must be repeated in the next spring or fall semester that the course is offered. Anatomy, physiology, and microbiology must be completed with a grade of C or better before progressing to junior-level nursing courses.

Students who repeat a nursing course or a pre- or co-requisite non-nursing course and earn a grade of D, F, WU, or W will be dismissed from the school. A student may repeat only one nursing course. Students who do not maintain a cumulative GPA of 2.8 or better will be placed on probation for one semester. Students on probation who do not raise their cumulative GPA to 2.8 or better after one semester will be dismissed from the School of Nursing. Any general education course that is not a pre- or co-requisite of nursing courses and in which a grade of D has been earned must be repeated prior to graduation if it is to be counted toward graduation requirements. The baccalaureate of science in nursing degree is conferred upon completion of 128 hours and all required courses.

## Curriculum for the Basic Student

B.S.N. Suggested Plan of Progression (Morgantown)

### First Year

See first year basic student curriculum on page 112.

### Second Year

First Semester	Hrs.	Second Semester	Hrs.
NSG 221 .....	3	NSG 241 .....	3
NSG 225 .....	3	NSG 245 .....	3
NSG 361 .....	3	PSIO 241 .....	4
NBAN 205 and 206.....	4	ENGL 102.....	3
MICB 200.....	3	GEC.....	3
<b>Total .....</b>	<b>16</b>	<b>Total .....</b>	<b>16</b>

### Third Year

First Semester	Hrs.	Second Semester	Hrs.
NSG 322 .....	2	NSG 334 .....	3
NSG 325 .....	2	NSG 335 .....	2
NSG 333W .....	3	NSG 345 .....	2
NSG 351 .....	2	NSG 356 .....	3
NSG 355 .....	2	NSG 376 .....	3
STAT 211 .....	3	GEC .....	3
<b>Total .....</b>	<b>14</b>	<b>Total .....</b>	<b>16</b>

### Fourth Year

First Semester	Hrs.	Second Semester	Hrs.
NSG 421 .....	3	NSG 441 .....	3
NSG 423 .....	2	NSG 442 .....	2
NSG 425 .....	6	NSG 445 .....	5
NSG 476 .....	3	NSG 455 .....	1
GEC .....	3	NSG 486 .....	1
<b>Total .....</b>	<b>17</b>	<b>GEC .....</b>	<b>3</b>
		<b>Total .....</b>	<b>15</b>

The sequence of courses may vary from campus to campus.

## Admission for R.N.-B.S.N. Program

An unrestricted license to practice nursing and a grade point average of 2.5 or better on all college work attempted are required to be eligible for admission consideration. Acceptance and placement in the program are dependent upon the individual's academic record and the number of spaces available.

Note: Admission criteria are subject to change. Please see the School of Nursing Web site for the most up-to-date criteria at: <http://www.hsc.wvu.edu/son/>.

## Curriculum for the Registered Nurse Student

Nursing courses in the R.N. to B.S.N. program are designed for completion in three semesters of full-time study after completion of the general education requirements for the University. All nursing courses are offered as Web courses. The associate's degree and diploma graduates will be receive 50 hours of lower-division undifferentiated nursing credit upon evidence of licensure.

A minimum of 30 hours of general education courses that meet the University General Education Curriculum and School of Nursing requirements should be completed before enrolling in the first nursing courses. All registered nurse students must establish credit by enrollment, challenge, or acceptable CLEP examinations in:

Curriculum Requirements	Hrs.
ENGL 101 and 102 .....	6
Statistics .....	3
GEC .....	32-35
<b>Total .....</b>	<b>41-44</b>

## R.N.-B.S.N. Full-time Progression Plan

Progression will vary depending on the amount of non-nursing courses that must be completed, whether the student wishes to be part-time or full-time, and when courses are offered. This full-time progression plan is projected on the basis that all non-nursing requirements have been completed.

Fall	Hrs.	Spring	Hrs.
First Semester		Second Semester	
NSG 333W .....	3	NSG 433 .....	3
NSG 340 .....	3	NSG 434 .....	4
NSG 361 .....	3	<b>Total .....</b>	<b>7</b>
NSG 476 .....	3		
<b>Total .....</b>	<b>12</b>		

Summer	
Third Semester	Hrs.
NSG 441*	3
NSG 445*	5
NSG 455*	1
<b>Total</b>	<b>9</b>

\*Note: Based on background and experience, the R.N. student may establish credit by examination for all courses marked with \*. A written examination is used for Nursing 441. A portfolio is used to establish credit for Nursing 445. Only those students who have adequate prior experience in the content areas covered by these courses are eligible to use the credit by examination or portfolio option.

R.N. to M.S.N. and B.S./B.A. to B.S.N. curriculum details are available on the School of Nursing Web page at <http://www.hsc.wvu.edu/son>.

## Graduate Programs

### Master of Science in Nursing

The School of Nursing offers a program of study leading to the master of science in nursing (M.S.N.) degree. The major areas of study available in advanced practice nursing are family nurse practitioner (FNP), pediatric nurse practitioner (PNP), and neonatal nurse practitioner (NNP). The school also offers post-master's programs in these three areas for those who already hold an M.S.N. The programs are offered at the University's main campus in Morgantown and at the Charleston Division. Courses are offered via Web-based modalities. Courses are scheduled in the late afternoon at times convenient for working students and may require that students attend special sessions in Morgantown or Charleston two or three times each semester. Dates of the special sessions are made available in advance so that students can plan their schedules in order to attend.

The master's program offers a curriculum that allows students to enroll on a part-time or full-time basis. Graduate students are strongly recommended to limit their credit load if they are also involved in full-time work. Students employed in full-time work should enroll for no more than six hours of master's-level coursework in any one term. Throughout the curriculum, students are guided in the process of self-development aimed at pursuing excellence in scholarly and professional endeavors. The program allows flexibility within the basic curricular structure through the individualization of learning experiences. The pattern and duration of the student's study plan is determined in consultation with a faculty advisor and is based upon the student's background and goals. The 44-credit program can be completed in five semesters (including a summer session) of full-time study. The average full-time load is nine to 12 credit hours per semester. Part-time options are also available.

Graduates meet all requirements to sit for the national certification examination in their major area of family nurse practitioner, pediatric nurse practitioner, or neonatal nurse practitioner. They are prepared to offer care at the advanced practice level to select populations, and are able to perform all activities encompassed in the traditional scope of practice.

### Goals of the Master's Program

1. Synthesize theories, research findings, and broad-based perspectives for application in the advanced practice of nursing.
2. Utilize systematic inquiry and refined analytical skills in the provision of health care services.
3. Create a relationship with clients that builds and maintains a supportive and caring partnership.
4. Articulate viewpoints and positions in order to improve the quality of health care delivery and outcomes of successful care.
5. Consult and collaborate in interdisciplinary and interagency endeavors to advance culturally sensitive health care to clients, groups, and communities.
6. Integrate prior and current learning as a basis for growth and accountability in enacting the role of the advanced practice nurse.

### Application Process

The application process should be completed by April 1. The beginning sequence of courses in the M.S.N. program starts in the fall semester only. Class size and plans of progress may be limited based on available faculty resources and space. Applicants for graduate study need to complete the following steps in order to be considered for admission:

1. Complete two application forms as indicated below and return to the appropriate offices by the deadline.
  - a. Application for Admission to Graduate Studies (available from Admissions and Records). To be returned with a non-refundable service fee to: Office of Admissions and Records, West Virginia University, P.O. Box 6009, Morgantown, WV 26506-6009.
  - b. Application for Admission to Graduate Study in the School of Nursing (available from Student Services Office in the School of Nursing or School of Nursing Charleston Division offices). Students should be certain that all materials are sent to the appropriate office. WVU School of Nursing, Student Services Office, P.O. Box 9600, Morgantown, WV 26506-9600 or WVU Charleston Division, Office of Student Affairs, 3110 MacCorkle Ave. SE, Charleston, WV 25304-1129.
2. Request an official transcript of records from each college or university attended. Send transcripts and records directly to: WVU Office of Admissions and Records, P.O. Box 6009, Morgantown, WV 26506-6009 or WVU Charleston Division, Office of Student Affairs, 3110 MacCorkle Ave. SE, Charleston, WV 25304-1129.
3. Send three letters of recommendation directly to the WVU School of Nursing, Student Services Office, P.O. Box 9600, Morgantown, WV 26506-9600 or WVU Charleston Division, Office of Student Affairs, 3110 MacCorkle Ave. SE, Charleston, WV 25301-1129.
4. Request a copy of Graduate Record Exam or Miller Analogies Test scores be sent to WVU Health Sciences Center Office of Admissions and Records P.O. Box 9815 Morgantown, WV 26506-9815.

The parameters used for review of applicants include: academic achievement, Graduate Record Exam or Miller Analogies Test scores, career goals, and recommendations.

For more information, write to the Assistant Dean for Student Services, WVU School of Nursing, P.O. Box 9600, Morgantown, WV 26506-9600; phone (304) 293-1386.

### Admission Criteria

1. Satisfy WVU requirements for admission to graduate study.
2. Have a cumulative GPA of 3.0 or higher on a 4.0 scale on all college work attempted.
3. Have a competitive score on the Graduate Record Exam or Miller Analogies Test.
4. Have a current, unrestricted R.N. license in at least one state.
5. Hold a bachelor of science degree in nursing from a nationally accredited school. A bachelor of science degree in nursing is mandatory.
6. Have completed three credits of undergraduate statistics acceptable for transfer with a grade of C or better.
7. Have completed a health assessment course, including physical examination skills, with a grade of B or better and acceptable for transfer.
8. Submit three letters of reference.
9. Submit a typewritten essay describing professional goals (limited to two type-written, double-spaced pages).

Applicants may be considered for provisional admission on an individual basis. The specific provisions which must be met for progression to regular status will be noted in the admission letter.

Note: Admission criteria are subject to change. Please see the School of Nursing Web site for the most up-to-date criteria at: <http://www.hsc.wvu.edu/son/>.

### Nursing Core Courses for all Master's Degree Nursing Students

	Hrs.
NSG 622 <i>Theory and Disciplined Reasoning</i> .....	3
NSG 623 <i>Concepts of Advanced Nursing</i> .....	2
NSG 624 <i>Advanced Pathophysiology</i> .....	4
NSG 626 <i>Lifespan Health Promotion</i> .....	2
NSG 627 <i>Research and Systematic Analysis</i> .....	5
NSG 629 <i>Advanced Practice/Families</i> .....	2
NSG 628 <i>Health Policy, Finance, and Ethics</i> .....	3
NSG 685 <i>Clinical Scholarship</i> .....	1

### FNP Courses

NSG 631 <i>Advanced Pharmacotherapeutics</i> .....	3
NSG 632 <i>Advanced Assessment</i> .....	2
NSG 633 <i>Primary Care Rural Families 1</i> .....	3
NSG 634 <i>Primary Care Rural Families 2</i> .....	4
NSG 635 <i>Rural Family Practicum 1</i> .....	5
NSG 636 <i>Rural Family Practicum 2</i> .....	5

**Pediatric NP Courses**

NSG 631 <i>Advanced Pharmacotherapeutics</i> .....	3
NSG 644 <i>Pediatric Primary Care 2</i> .....	4
NSG 645 <i>Pediatric Practicum 1</i> .....	5
NSG 646 <i>Pediatric Practicum 2</i> .....	5
NSG 647 <i>Pediatric Assessment/Care 1</i> .....	5

**Neonatal NP Courses**

NSG 654 <i>Neonatal Pathophysiology</i> .....	3
NSG 655 <i>Neonatal Health Promotion</i> .....	2
NSG 663 <i>Neonatal Assessment/Care 1</i> .....	5
NSG 664 <i>Neonatal Care 2</i> .....	4
NSG 655 <i>Neonatal Practicum 1</i> .....	5
NSG 666 <i>Neonatal Practicum 2</i> .....	5

\*In lieu of NSG 624 and NSG 626, NNP students will take NSG 654 *Neonatal Pathophysiology* and NSG 655 *Neonatal Health Promotion*.

**Full-Time Progression Plan for Family Nurse Practitioner Track\***

*First Year (full-time)*

Fall Semester	Hrs.	Spring Semester	Hrs.
NSG 622 <i>Theory</i> .....	3	NSG 626 <i>Health Promotion</i> .....	2
NSG 623 <i>Concepts</i> .....	2	NSG 631 <i>Pharmacotherapeutics</i> .....	3
NSG 624 <i>Adv. Pathophysiology</i> .....	4	NSG 627 <i>Research</i> .....	5
<b>Total</b> .....	<b>9</b>	NSG 632 <i>Adv. Assess.</i> .....	2
		<b>Total</b> .....	<b>12</b>

Summer	Hrs.
NSG 629 <i>Adv. Practice Families</i> .....	2
NSG 633 <i>Primary Care 1</i> .....	3
<b>Total</b> .....	<b>5</b>

*Second Year*

Fall Semester	Hrs.	Spring Semester	Hrs.
NSG 634 <i>Primary Care 2</i> .....	4	NSG 636 <i>Practicum 2</i> .....	5
NSG 635 <i>Practicum 1</i> .....	5	NSG 628 <i>Policy 3</i> .....	3
<b>Total</b> .....	<b>9</b>	NSG 685 <i>Clinical Scholarship</i> .....	1
		<b>Total</b> .....	<b>9</b>

**Full-Time Progression Plan for Pediatric Nurse Practitioner Track\***

*First Year (part-time)*

Fall Semester	Hrs.	Spring Semester	Hrs.
NSG 644 <i>Peds Primary Care 1</i> .....	3	NSG 646 <i>Peds Practicum 2</i> .....	5
NSG 645 <i>Peds Practicum 1</i> .....	5	NSG 628 <i>Policy 3</i> .....	3
<b>Total</b> .....	<b>8</b>	NSG 685 <i>Clinical Scholarship</i> .....	1
		<b>Total</b> .....	<b>9</b>

Summer	Hrs.
NSG 629 <i>Adv. Prac. Families</i> .....	2
NSG 631 <i>Pharmacotherapeutics</i> **.....	3
<b>Total</b> .....	<b>5</b>

*Second Year*

Fall Semester	Hrs.	Spring Semester	Hrs.
NSG 644 <i>Peds Primary Care 1</i> .....	4	NSG 646 <i>Peds Practicum 2</i> .....	3
NSG 645 <i>Peds Practicum 1</i> .....	5	NSG 628 <i>Policy 3</i> .....	3
<b>Total</b> .....	<b>9</b>	NSG 685 <i>Clinical Scholarship</i> .....	1
		<b>Total</b> .....	<b>7</b>

## Full-Time Progression Plan for Neonatal Track\*

### First Year (full-time)

Fall Semester	Hrs.	Spring Semester	Hrs.
NSG 622 <i>Theory</i> .....	3	NSG 655 <i>Neonatal Hlth Promo</i> .....	2
NSG 623 <i>Concepts</i> .....	2	NSG 627 <i>Research</i> .....	5
NSG 654 <i>Neonatal Pathophys</i> .....	4	NSG 663 <i>Neonatal Care and</i>	
<b>Total</b> .....	<b>9</b>	<i>Assessment</i> .....	5
		<b>Total</b> .....	<b>12</b>

Summer	Hrs.
NSG 629 <i>Adv. Practice Families</i> .....	2
NSG 631 <i>Pharmacotherapeutics</i> .....	3
<b>Total</b> .....	<b>5</b>

### Second Year

Fall Semester	Hrs.	Spring Semester	Hrs.
NSG 664 <i>Neonatal Care</i> .....	4	NSG 666 <i>Neonatal Practicum 2</i> .....	5
NSG 665 <i>Neonatal Practicum 1</i> .....	5	NSG 628 <i>Health Policy</i> .....	3
NSG 685 <i>Clinical Scholarship</i> .....	1	<b>Total</b> .....	<b>8</b>
<b>Total</b> .....	<b>10</b>		

\*Part-time progression plans are also available that allow the student to extend coursework over three or four years, and may be viewed at the School of Nursing Web site: <http://www.hsc.wvu.edu/son/>.

\*\*Only those in PNP and NNP tracks.

## Post-Graduate Nurse Practitioner Certificate Program

The post-master's nurse practitioner certificate program requires a minimum of 19 credit hours. The program prepares master's level nurses to sit for the national certification examination as a nurse practitioner in the selected area of focus (family, pediatric, neonatal). To be considered for admission, the applicant must have a master's degree in nursing from a nationally accredited program with a minimum cumulative GPA of 3.0 or better and an unrestricted R.N. license in at least one state. Students in the post-master's program must maintain a 3.0 GPA and receive satisfactory clinical ratings to progress. Each student's program will be individualized based on educational and experiential background. Prerequisites to registration for the required clinical courses in the program are evidence of competence in advanced pathophysiology and advanced pharmacotherapeutics.

The required courses for post-master's certification follow:

Required Courses for Post Master's Family Nurse Practitioner	Hrs.
NSG 632 <i>Advanced Assessment</i> .....	2
(Competency exam for exemption)	
NSG 633 <i>Primary Care: Rural Families 1</i> .....	3
(Competency exam for exemption)	
NSG 634 <i>Primary Care: Rural Families 2</i> .....	4
NSG 635 <i>Rural Family Practicum 1</i> .....	5
NSG 636 <i>Rural Family Practicum 2</i> .....	5
<b>Total</b> .....	<b>19</b>

Required Courses for Post Master's Pediatric Nurse Practitioner	Hrs.
NSG 647 <i>Pediatric Assessment/Care 1</i> .....	5
(Competency exam for exemption)	
NSG 644 <i>Pediatric Primary Care 2</i> .....	4
NSG 645 <i>Pediatric Practicum 1</i> .....	5
NSG 646 <i>Pediatric Practicum 2</i> .....	5
<b>Total</b> .....	<b>19</b>

Required Courses for Post Master's Neonatal Nurse Practitioner	Hrs.
NSG 654 <i>Neonatal Pathophysiology</i> .....	4
NSG 655 <i>Neonatal Health Promotion</i> .....	2
NSG 663 <i>Neonatal Assessment/Care I</i> .....	5
NSG 664 <i>Neonatal Care 2</i> .....	4
NSG 665 <i>Neonatal Practicum 1</i> .....	5
NSG 666 <i>Neonatal Practicum 2</i> .....	5
<b>Total</b> .....	<b>25</b>

All students in post-master's certificate program will complete a minimum of 600 supervised clinical hours.

## Doctor of Nursing Practice Online Program Program Description

The School of Nursing offers programs of study leading to the doctor of nursing practice (D.N.P.) degree. Courses are offered via Web-based modalities in real time. Courses are scheduled in the late afternoon at times convenient for working students and may require that students attend special sessions in Morgantown or Charleston 2–3 times each semester. Dates of the special sessions are made available in advance so that students can plan their schedules in order to attend.

The D.N.P. program offers a curriculum that allows students to enroll on a part-time or full-time basis. Graduate students are strongly recommended to limit their credit load if they are also involved in full-time work. Students employed in full-time work should enroll for no more than six hours of doctoral level coursework in any one term. Throughout the curriculum, students are guided in the processes of self-development aimed at pursuing excellence in scholarly and professional endeavors.

At the completion of the program, the Doctor of Nursing Practice (D.N.P.) graduate will be able to practice at the highest professional level to:

- Use science-based theories and concepts to:
  - Determine the nature and significance of health and health care delivery phenomena,
  - Describe actions and advance strategies to improve health care delivery, and
  - Develop, deliver, and evaluate theory-based health care.
- Demonstrate organizational and systems leadership that emphasizes the primacy of clinical work, continually improving health outcomes, and ensuring patient safety.
- Use analytical methods and research to develop best practices and practice guide lines and to facilitate the evaluation of systems of care that will improve patient outcomes.
- Use information systems and technology-based resources that support clinical and administrative decision making, care systems, nurse-sensitive outcomes, and quality improvement.
- Assume a leadership role in the development of health care policy.
- Establish, participate, and lead interprofessional teams.
- Utilize a strong conceptual foundation in clinical prevention and population health.
- Base practice on biophysical, psychosocial, sociopolitical, cultural, economic, and nursing science and ethics.
- Develop, implement, and evaluate practice and care delivery models, which are politically and culturally appropriate.

### Admissions Criteria

- Master's or doctoral degree in nursing,
- Unencumbered licensure as a registered professional nurse,
- National certification as an advanced practice nurse in a direct care specialty,
- Minimum GPA of 3.5 in prior program of study,
- Graduate level course in research and statistics,
- Scheduled interview, and
- Online writing exercise.

Note: Admission criteria are subject to change. Please see the School of Nursing Web site for the most up-to-date criteria at: <http://www.hsc.wvu.edu/son/>.

### Full-Time Progression Plan

#### First Year

Fall Semester	Hrs.
NSG 715 <i>Scientific Underpinnings</i> .....	3
NSG 716 <i>Analytic Methods</i> .....	4
NSG 761 <i>Clinical Project I</i> .....	1
<b>Total</b> .....	<b>8</b>

Spring Semester	Hrs.
NSG 717 <i>Orgs. and Leadership</i> .....	3
NSG 718 <i>Population Health</i> .....	3
NSG 762 <i>Clinical Project II</i> .....	1
NSG 741 <i>Clinical Focus</i> .....	2
<b>Total</b> .....	<b>9</b>

Summer	Hrs.
NSG 742 * <i>Clinical Application</i> .....	2–8
NSG 763 <i>Capstone I</i> .....	3
<b>Total</b> .....	<b>5–11</b>

Fall Semester	Hrs.
NSG 719 <i>Health Care Policy</i> .....	3
NSG 764 <i>Capstone II</i> .....	3
NSG 742 * <i>Clinical Application</i> .....	2–8
<b>Total</b> .....	<b>8–14</b>

Spring Semester	Hrs.
NSG 742 * <i>Clinical Application</i> .....	2–8
<b>Total</b> .....	<b>2–8</b>

## Part-Time Progression Plan

### First Year

Fall Semester	Hrs.
NSG 715 <i>Scientific Underpin</i> .....	3
NSG 716 <i>Analytic Methods</i> .....	4
<b>Total</b> .....	<b>7</b>

Spring Semester	Hrs.
NSG 717 <i>Orgs. and Leadership</i> .....	3
NSG 718 <i>Population Health</i> .....	3
<b>Total</b> .....	<b>6</b>

### Second Year

Fall Semester	Hrs.
NSG 719 <i>Health Care Policy</i> .....	3
NSG 761 <i>Clinical Project I</i> .....	1
<b>Total</b> .....	<b>4</b>

Spring Semester	Hrs.
NSG 762 <i>Clinical Project II</i> .....	1
NSG 741 <i>Clinical Focus</i> .....	2
<b>Total</b> .....	<b>3</b>

### Summer

	Hrs.
NSG 763 <i>Capstone I</i> .....	3
NSG 742 * <i>Clinical Application</i> .....	2-8
<b>Total</b> .....	<b>5-11</b>

### Third Year

Fall Semester	Hrs.
NSG 764 <i>Capstone II</i> .....	3
NSG 742 * <i>Clinical Application</i> .....	2-8
<b>Total</b> .....	<b>5-11</b>

Spring Semester	Hrs.
NSG 742 * <i>Clinical Application</i> .....	2-8
<b>Total</b> .....	<b>2-8</b>

\*NSG 742 can be taken any semester after NSG 741 is completed and must total a minimum of four credit hours.

## Doctor of Philosophy Summer Program

The purpose of the Ph.D. program is to prepare nurse scholars/educators for roles in research, teaching, and service. The program will prepare graduates who will contribute their unique nursing expertise to the collaborative development of knowledge to improve health and quality of life.

### Admission Criteria

- Cumulative GPA of 3.0 of 4 points in master's degree work.
- Competitive achievement on the GRE.
  - at least 1000 total in Verbal and Quaititative,
  - neither can be below 450, and
  - 3.0 analytic
- A grade of B or higher in graduate statistics and research courses.
- Congruence between the applicant's career goals and program objectives; and between the applicant's research interests and those of the faculty.

Note: Admission criteria are subject to change. Please see the School of Nursing Web site for the most up-to-date criteria at: <http://www.hsc.wvu.edu/son/>.

### Degree Requirements

The nursing component of the Ph.D. program is offered during six-week summer sessions. Students attend class two days a week, taking six credits of nursing courses for four summers. Three curricular components comprise the 55 credits of post-master's coursework. These are core, cognate/electives, and dissertation.

The goals of the program are to prepare graduates who will:

- Critically analyze phenomena using a variety of approaches to contribute to the development of nursing science.
- Synthesize, reorganize, and expand knowledge from nursing and related disciplines to inform nursing science and practice.
- Contribute to the development of the science of caring to improve quality of life.
- Disseminate advances in scientific knowledge to diverse audiences.
- Assume collaborative leadership roles in academia, health care organizations, research teams, and scholarly networks to promote and improve health.
- Demonstrate integrity in the design, conduct, analysis, interpretation, and dissemination of research.

<b>Core</b>	<b>Hrs.</b>
NSG 726 <i>Quantitative Research Methods</i> .....	3
NSG 727 <i>Contemporary Nursing Science</i> .....	3
NSG 728 <i>Theoretical Basis of Nursing</i> .....	3
NSG 729 <i>Qualitative Research Methods</i> .....	3
NSG 734 <i>Use of Data</i> .....	3
NSG 735 <i>Principles: Nursing Education</i> .....	3
NSG 735 <i>Leadership</i> .....	3
NSG <i>Principles of Measurement</i> .....	3
NSG <i>Issues in Nursing Scholarship and Role Development</i> .....	3
<b>Total</b> .....	<b>27</b>

<b>Cognate/Electives</b>	
PUBH 611 <i>Univariate Statistics</i> .....	3
PUBH 693 <i>Multivariate Statistics</i> .....	3
Additional Cognates .....	9
<b>Total</b> .....	<b>15</b>

<b>Dissertation</b>	
NSG 781 <i>Research Mentorship</i> .....	2
NSG 783 <i>Dissertation Seminar</i> .....	2
NSG 797 <i>Dissertation</i> .....	9
<b>Total</b> .....	<b>13</b>

### Part-Time Progression

#### First year

Summer	Hrs.
NSG 728 <i>Theoret. Basis of Nsg.</i> .....	3
NSG 727 <i>Contemporary Nsg.Sci.</i> .....	3
<b>Total</b> .....	<b>6</b>

Fall	Hrs.
PUBH 611 <i>Univariate Statistics</i> .....	3
<b>Total</b> .....	<b>3</b>

Spring	Hrs.
PUBH 693 <i>Multivariate Statistics</i> .....	3
<b>Total</b> .....	<b>3</b>

#### Second Year

Summer	Hrs.
NSG 726 <i>Quan. Rsch Methods</i> .....	3
NSG 734 <i>Use of Data</i> .....	3
<b>Total</b> .....	<b>6</b>

Fall	Hrs.
NSG <i>Prin. of Measurement</i> .....	3
<b>Total</b> .....	<b>3</b>

Spring	Hrs.
NSG 729 <i>Qualitative Rsch. Meth.</i> .....	3
<b>Total</b> .....	<b>3</b>

#### Third year

Summer	Hrs.
NSG 735 <i>Principles: Nursing Ed</i> .....	3
NSG 735 <i>Leadership</i> .....	3
<b>Total</b> .....	<b>6</b>

Fall	Hrs.
Cognate.....	3
<b>Total</b> .....	<b>3</b>

Spring	Hrs.
Cognate.....	3
<b>Total</b> .....	<b>3</b>

#### Fourth year

Summer	Hrs.
NSG <i>Issues in Nursing Scholarship and Role Development</i> .....	3
NSG 781 <i>Research Mentorship</i> .....	2
<b>Total</b> .....	<b>5</b>

Fall	Hrs.
Qualifying Exam .....	1
Cognate .....	3
<b>Total .....</b>	<b>4</b>

*Fifth year*

Summer	Hrs.
NSG 797 <i>Dissertation</i> .....	1-9
<b>Total .....</b>	<b>1-9</b>

Fall	Hrs.
NSG 797 <i>Dissertation</i> .....	1-9
<b>Total .....</b>	<b>1-9</b>

Spring	Hrs.
NSG 783 <i>Dissertation Seminar</i> .....	2
<b>Total .....</b>	<b>2</b>

Spring	Hrs.
NSG 797 <i>Dissertation</i> .....	1-9
<b>Total .....</b>	<b>1-9</b>

**Full-Time Progression**

*First year*

Summer	Hrs.
NSG 728 <i>Theoret. Basis of Nursing</i> .....	3
NSG 727 <i>Contem. Nursing Sci.</i> .....	3
<b>Total .....</b>	<b>6</b>

Fall	Hrs.
<i>Research Design and Methods</i> .....	3
PUBH 611 <i>Univariate Statistics</i> .....	3
Cognate .....	3
<b>Total .....</b>	<b>9</b>

*Second year*

Summer	Hrs.
NSG 735 <i>Principles: Nursing Ed</i> .....	3
NSG 735 <i>Leadership</i> .....	3
<b>Total .....</b>	<b>6</b>

Fall	Hrs.
<i>Secondary Data Analysis</i> .....	3
NSG <i>Principles of Measurement</i> .....	3
NSG 729 <i>Qualitative Rsch. Meth.</i> .....	3
<b>Total .....</b>	<b>9</b>

*Third year*

Summer	Hrs.
NSG 783 <i>Dissertation Seminar</i> .....	2
<b>Total .....</b>	<b>2</b>

Fall	Hrs.
NSG 797 <i>Dissertation</i> .....	1-9
<b>Total .....</b>	<b>1-9</b>

Spring	Hrs.
PUBH 693 <i>Multivariate Statistics</i> .....	3
<i>Survey Research Methods</i> .....	3
Cognate .....	3
<b>Total .....</b>	<b>9</b>

Spring	Hrs.
NSG <i>Issues in Nrsng. Scholarship and Role Development</i> .....	3
Cognate .....	3
NSG 781 <i>Research Mentorship</i> .....	2
Qualifying Exam .....	1
<b>Total .....</b>	<b>9</b>

Spring	Hrs.
NSG 797 <i>Dissertation</i> .....	1-9
<b>Total .....</b>	<b>1-9</b>

# School of Pharmacy

Patricia A. Chase, Ph.D., Dean

Mary K. Stamatakis, Pharm.D., Associate Dean for Academic Affairs and Educational Innovation

W. Clarke Ridgway, B.S., Assistant Dean for Student Services

Rae R. Matsumoto, Ph.D., Associate Dean for Research and Graduate Programs

<http://www.hsc.wvu.edu/sop>

## Degrees Offered

*Doctor of Pharmacy*

*M.S., Ph.D. in Pharmaceutical and Pharmacological Sciences*

## Introduction

Pharmacy was first offered at West Virginia University as a department in the School of Medicine in 1914. It became the College of Pharmacy in 1936 and the School of Pharmacy in 1958. In 1960 the School of Pharmacy changed from a four-year to a five-year program and in 1998 to a six-year program. The Doctor of Pharmacy (Pharm.D.) program comprises four years of professional study preceded by a minimum of two years of pre-pharmacy study in an accredited college of arts and sciences.

A primary objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy. To meet this objective, the curriculum provides the student with scientific and technical knowledge and communication skills required to practice the profession and imbues in the student a concept of the pharmacist's professional responsibilities as a provider of pharmaceutical care and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, positions are also available in various government agencies, the pharmaceutical industry, long-term care, nuclear pharmacy, and home health-care organizations. Pharmacists are eligible for commissions in the armed forces and for positions with the U.S. Public Health Service. Pharmacists also may prepare for careers in teaching and research through graduate study.

The WVU School of Pharmacy offers M.S. and Ph.D. programs in the pharmaceutical and pharmacological sciences and health outcomes research.

## Accreditation

The School of Pharmacy is accredited by the Accreditation Council for Pharmacy Education. The council is composed of members from the American Pharmacists Association, the National Association of Boards of Pharmacy, the American Association of Colleges of Pharmacy, and the American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy, whose objective is to promote the interests of pharmaceutical education.

## Legal Requirements and Reciprocity

To qualify for examination for licensure by the West Virginia Board of Pharmacy, the applicant must be 18 years of age or older and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy and must meet the internship requirements set by the West Virginia Board of Pharmacy.

Interns must be registered with the West Virginia Board of Pharmacy and must be enrolled in or a graduate of an accredited school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate with 49 other states, the District of Columbia, and Puerto Rico provided they meet the licensure requirements of these states.

## Pharm.D. Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this catalog and the *WVU Undergraduate Catalog*. Students preparing for the study of pharmacy may satisfy the coursework requirements for entrance into the School of Pharmacy Pharm.D. program by successfully completing the following course selections or their equivalents:

<b>Pre-Pharmacy Requirements</b>	<b>WVU Courses Meeting Requirements</b>	<b>Sem. Hr. Credit</b>
<i>English Composition</i>	ENGL 101 and 102	6
<i>Introduction to Calculus</i>	MATH 150 (MATH 155)	3 (4)
<i>Principles of Microeconomics</i>	ECON 201	3
<i>General Biology</i>	BIOL 115 and 117	8
<i>General Chemistry</i>	CHEM 115 and 116	8
<i>Organic Chemistry</i>	CHEM 233/235 and 234/236	8
<i>Physics</i>	PHYS 101 and 102	8
<i>Introduction to Statistics</i>	STAT 211 or ECON 225	3
<i>Microbiology</i>	MICB 200 (ENVM 241)	3 (4)
<i>Public Speaking</i>	SPA 270	3
<i>Electives*</i>		12
<b>Total</b>		<b>65–67</b>

\*Electives must be designed to satisfy the University General Education Curriculum (GEC) requirements. (See "General Education Curriculum" for a listing of specific courses.)

Admissions are competitive. It should be noted that in recent years applicants with GPAs below 3.3 have rarely been admitted. Criteria used to evaluate candidates include academic performance, as measured by the GPA for all the above-noted pre-requisite courses, the cumulative grade point average achieved in all prior college-level coursework, Pharmacy College Admissions Test (PCAT) scores, a personal interview, a written essay, and letters of recommendation. PCAT tests have been required since June 2005. All pre-requisite courses must be at an M.S. accredited institution of higher education and completed with a grade of C or better. Priority is given to qualified West Virginia residents and applicants who have performed the majority of their pre-requisite coursework in a WV college or university. Careful consideration is given to those personal qualifications which bear upon the fitness of applicants for the study and practice of the profession of pharmacy.

All applicants must first file an initial electronic application with the Pharmacy College Application Service (PharmCAS). Instructions for completing the application are found on the PharmCAS Web site, <http://www.pharmacas.org>. Supplemental applications specific to the WVU School of Pharmacy will then be sent to selected candidates deemed qualified by the Committee on Admissions. Application deadlines are subject to change; check PharmCAS, the School of Pharmacy Web page at <http://www.hsc.wvu.edu/sop>, or contact the school to verify current deadlines. A \$50 application fee must accompany the supplemental application.

Each applicant who is recommended for acceptance is required to deposit \$200 in-state or \$400 non-WV resident before his or her name is added to the official list of those accepted by the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is forfeited.

With enrollment in the School of Pharmacy, all students must comply with the immunization and diagnostic procedures required by the WVU Board of Governors, WVU, the WVU Robert C. Byrd Health Sciences Center, and/or the School of Pharmacy.

Complete information may be obtained from the Dean, School of Pharmacy, Robert C. Byrd Health Sciences Center, P.O. Box 9500, Morgantown, WV 26506-9500 or from the Office of Admissions and Records, Robert C. Byrd Health Sciences Center, P.O. Box 9815, Morgantown, WV 26506-9815.

## **Pharmacy College Admission Test**

Completion of the Pharmacy College Admission Test is a requirement for admission to the school. It is recommended that the student take this test in the summer or fall before making application for admission. Information concerning time and place of the test can be obtained from a pre-pharmacy advisor, the School of Pharmacy, or by writing: PsychCorp, PSE Customer Relations-PCAT, 19500 Bulverde Road, San Antonio, TX 78259; 1-800-622-3231 or (210) 339-8710; Fax 1-888-211-8276 or 210-339-8711 or <http://www.PCATweb.info>.

## **Personal Interview**

The Committee on Admissions requires a personal interview with selected candidates who qualify for a supplemental application. The Committee on Admissions will determine which applicants are to receive the supplemental application. Interviews are held during the spring semester at the Robert C. Byrd Health Sciences Center in Morgantown.

## Recommendations on Academic Performance

Two academic recommendations are required, and must be provided by course instructors in any two of the pre-pharmacy science areas: biology, chemistry, math, and physics. The third recommendation may be provided by a course instructor of the student's choice, an advisor, pharmacist, or health professional.

## Admission to Advanced Standing

If space is available, students from other accredited schools of pharmacy may be admitted, provided they meet the prerequisite course requirements of the WVU School of Pharmacy, have at least a 2.5 professional grade point average, are in good academic standing at the school of origin, and are eligible for continuation toward a degree in pharmacy at the school initially attended. Grades of D in professional courses cannot be transferred.

## Conditions Following Acceptance of Admission

An applicant accepted into the first year or with advanced standing is expected to have met all entrance requirements and satisfactorily completed all prepharmacy work in progress by the end of the spring semester prior to matriculation or, if a transfer student, prior to transfer. A satisfactory performance in the completion of such work is defined as one that is consistent with the student's previous academic record and must include no grades of D or lower in prerequisite courses. Failure to do so will result in revocation of the acceptance by the Admissions Committee.

Furnishing or causing to furnish false or incorrect information for the purpose of gaining admission to the School of Pharmacy constitutes grounds for disciplinary action including, but not limited to, expulsion or revocation of acceptance.

Students in the School of Pharmacy agree to abide by the provisions of the Student Code of Academic and Professional Integrity. Upon admission each student is required to return a signed statement to the Office of Student Services indicating the student has read and understands the Policy on Academic and Professional Standards and the Student Code of Academic and Professional Integrity of the West Virginia University School of Pharmacy. The code and copies of the statement are available in the Office of Student Services in the School of Pharmacy, and on the School of Pharmacy Web site.

## Academic and Technical Standards

In accordance with section 504 of the Rehabilitative Act of 1973 (PL 93-112 and incorporating the guidelines of the Americans with Disabilities Act (ADA PL 101-336) enacted by Congress in 1990, the West Virginia University School of Pharmacy has adopted minimal technical standards for the assessment of admission, scholastic advancement, and graduation for its professional degree (doctor of pharmacy) program.

Because the doctor of pharmacy (Pharm.D.) degree signifies that the holder is a pharmacist prepared for entry into the practice of pharmacy, it follows that graduates must have the knowledge, skills, and demeanor to function in a broad variety of clinical situations and to conduct a wide spectrum of pharmaceutical care activities.

Candidates for admission, progression, and graduation in the Pharm.D. program must have the functional use of the senses of vision and hearing. Candidates' pharmaceutical skills will also be lessened without the functional use of the senses of equilibrium, smell, and taste. Additionally, they must have sufficient motor function to permit them to carry out the activities described in the sections that follow. They must be able to consistently, quickly, and accurately integrate all information received by whatever sense(s) employed, and they must have the intellectual ability to learn, integrate, analyze, and synthesize data.

A candidate for the Pharm.D. degree must have abilities and skills of five varieties including observation; communication; motor; conceptual, integrative and quantitative; and behavioral and social. Technological compensation can be made for some handicaps in certain of these areas, but a candidate should be able to perform in a reasonably independent manner. The use of a trained intermediary means that a candidate's judgment must be mediated by someone else's power of selection and observation. For details, see the *Technical Standards* document published online at [http://www.hsc.wvu.edu/sop/students/SOP\\_Technical\\_Standards.pdf](http://www.hsc.wvu.edu/sop/students/SOP_Technical_Standards.pdf)

## Student Course Load

Students in the doctor of pharmacy program are expected to register for all required classes in a semester unless directed not to do so by the Committee on Academic and Professional Standards or the Office of Student Services. Full-time students in the School of Pharmacy may not register for less than nine credit hours nor more than 20 credit hours during any semester without written approval of the Committee on Academic and Professional Standards or the Office of Student Services. For an exception, a letter of petition must be submitted to the Committee on Academic and Professional Standards through the School of Pharmacy's Office of Student Services.

## **Promotion and Graduation Requirements**

### **Evaluation of Student Progress**

Promotion of a student in the doctor of pharmacy program is evaluated in two major areas: successful completion of all required work and appropriate adherence to the professional standards of the School of Pharmacy.

The following information is only a brief outline of the School of Pharmacy policies and procedures. Detailed requirements and policies for evaluation of student progress and graduation can be found in the Policy on Academic and Professional Standards Governing the Doctor of Pharmacy Degree Program at West Virginia University School of Pharmacy and may be viewed on the School of Pharmacy Web site. Copies are available at the Office of Student Services. The Committee on Academic and Professional Standards administers all promotion and academic penalty rules.

### **Academic Coursework Review**

The Committee on Academic and Professional Standards of the School of Pharmacy reviews the performance of each student in every course at the end of each academic period and makes recommendations to the dean.

If a student has been found to have a marginal performance in any course as indicated by a grade less than a C or a semester GPA less than 2.5, probation will be recommended. Students on probation are not eligible to hold office in student organizations. Students on probation are expected to be present for all of their classes and laboratories. If a student fails to complete any required remedial actions or meet the specified performance requirements during the probationary period, academic suspension or dismissal may be recommended.

If a student has been found to have an unsatisfactory performance as indicated by a grade of F in any course, two or more grades less than a C in a semester, three or more grades less than C in a year, or an accumulation of narrative evaluations that indicate an academic deficiency or inadequate integration of curricular content, suspension or dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum. Exceptions may be made only on recommendation of the committee.

After academic dismissal, a student may apply for readmission to the School of Pharmacy. Readmission of a student is the prerogative of the dean following a recommendation by the Committee on Academic and Professional Standards.

### **Grading Policy**

Courses in the doctor of pharmacy degree program are graded either as A (excellent), B (good), C (fair), D (marginal), F (failing), I (incomplete), or on a (S) satisfactory/(U) unsatisfactory basis. Grades may be accompanied by a narrative report on the student's progress, noting any factors requiring remedial work or counseling. It is customary that all experiential courses are accompanied by a narrative evaluation. Narrative evaluations are kept in the student's file in the Office of Student Services.

The grade of incomplete (I) is given when the instructor believes that the work is unavoidably incomplete. If the grade of I is not removed by the satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure (F) unless special permission to postpone the work is obtained from the Committee on Academic and Professional Standards. It is the responsibility of the student to consult the instructor about the means and schedule for completing incomplete courses.

### **Professional Standards Review**

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the president of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession. Further information is provided in The Policy on Academic and Professional Standards Governing the Doctor of Pharmacy Degree at West Virginia University School of Pharmacy, which is available at the School of Pharmacy Office of Student Services.

### **Requirements for Degree**

The awarding of a doctor of pharmacy degree to a student is approved by the dean of the School of Pharmacy after receipt of recommendations from the Academic and Professional Standards Committee. Candidates must meet the following criteria: (1) meet the academic and professional standards, criteria, and requirements outlined in The Policy on Academic and Professional Standards Governing the Doctor of Pharmacy Degree at West Virginia University

School of Pharmacy, which is available at the School of Pharmacy Office of Student Services and on the school's Web site; (2) satisfactorily complete all of the required coursework in a timely fashion, which normally will not exceed five years from the date of initial enrollment into the professional program; (3) pay all fees; (4) complete the last year's work in residence in this school; (5) be present at the commencement exercises unless excused by the dean of the School of Pharmacy in writing; (6) satisfactorily complete the required number of experiential rotations and demonstrate the attainment of minimum competencies; and (7) complete 100 hours of volunteer community service.

## Special Requirements

The Board of Pharmacy requires 1,500 clock hours of internship experience for licensure in West Virginia. Students are required to obtain an Intern Certificate from the West Virginia Board of Pharmacy in order to accrue intern hours. Any hours worked before becoming a registered intern will not apply toward meeting the board requirements. Students must have a valid Intern Certificate throughout their entire experiential years of the Pharm.D. program. The certificate must be maintained until completion of the entire internship. The Board of Pharmacy holds final authority over internship rules and regulations. Up to 800 hours of the total of 1,500 required by the WV Board of Pharmacy may be obtained via the experiential program.

Students in the Pharm.D. program will perform one two-week block of experiential rotations at the conclusion of both the first and second years of the professional curriculum and nine one-month rotations during the final year of the program. Three of the nine blocks performed in the fourth year of the curriculum must be performed in designated rural sites. Site placement and sequencing will occur in the semesters prior to the experiential activities. Students may incur additional housing and/or travel costs when taking part in the experiential rotations. Opportunity will be provided for students to prioritize their site selection; however, ultimate authority for site selection will be maintained by the School of Pharmacy. All didactic coursework (required and elective) must be successfully completed prior to beginning the fourth-year experiential rotations.

## Course Changes

A student who seeks exemption from one or more professional courses based upon previous academic experience must submit a written petition to the Committee on Academic and Professional Standards.

### Entry-Level Pharm.D. Professional Curriculum

#### First Year

Fall Semester	Hrs.	Spring Semester	Hrs.
NBAN 301.....	3	BIOC 531.....	4
PSIO 743.....	5	PHAR 708.....	3
PHAR 700.....	1	PHAR 709.....	2
PHAR 701.....	2	PHAR 710.....	1
PHAR 702.....	3	PHAR 711.....	2
PHAR 703.....	1	PHAR 712.....	2
PHAR 720.....	2	PHAR 737.....	2
<b>Total</b> .....	<b>17</b>	Elective*.....	2-3
		<b>Total</b> .....	<b>18-19</b>

#### First Year

Summer Semester	Hrs.
PHAR 714.....	2

#### Second Year

Fall Semester	Hrs.	Spring Semester	Hrs.
PHAR 715.....	4	PHAR 719.....	1
PHAR 716.....	3	PHAR 724.....	2
PHAR 717.....	1	PHAR 725.....	4
PHAR 723.....	1	PHAR 726.....	2
PHAR 727.....	2	PHAR 728.....	2
PCOL 743.....	3	PCOL 744.....	3
Elective*.....	2-3	Elective*.....	2-3
<b>Total</b> .....	<b>16-17</b>	<b>Total</b> .....	<b>16-17</b>

<i>Second Year</i>	
Summer Semester	Hrs.
PHAR 729.....	2

<i>Third Year</i>			
Fall Semester	Hrs.	Spring Semester	Hrs.
PHAR 730.....	4	PHAR 734.....	3
PHAR 731.....	3	PHAR 736.....	1
PHAR 732.....	3	PHAR 738.....	2
PHAR 733.....	2	PHAR 739.....	3
PHAR 735.....	1	PHAR 740.....	4
PHAR 742.....	1	PHAR 741.....	3
Elective*.....	2-3	PHAR 746.....	1
<b>Total .....</b>	<b>16-17</b>	Elective*.....	0-2
		<b>Total .....</b>	<b>17-19</b>

*Fourth Year*  
*Advanced Experiential Components (Students rotate through one-month experiences)*

Community Practice	1 rotation
Institutional Practice	1 rotation
Acute Care	2 rotations
Ambulatory Care	2 rotations
Electives	3 rotations
<b>Total advanced experiential **</b>	<b>9 rotations</b>

\*Prior to beginning the experiential rotations, each student enrolled in the School of Pharmacy professional program must complete a minimum of ten credit hours of professionally-related electives as part of the pharmacy curriculum. Electives must be completed during the first three years of the four-year professional program. Beyond the required ten credit hours, the student may take any other electives. No course taken prior to admission into the School of Pharmacy may be used nor repeated to meet the elective requirements of the professional curriculum, and no reduction in elective requirements will be allowed for courses completed or degrees earned prior to enrollment in the program.

\*\*Fourth-year students will be required to complete one rotation in the summer session, four in the fall semester, and four in the spring semester.

The University pass-fail policy will be followed. Only selected professionally-related courses or additional free electives (in excess of the ten hours of required electives) may be taken on a satisfactory/unsatisfactory basis. No more than three credit hours of *Pharmaceutical Investigations* will be permitted to count toward fulfillment of the pharmacy elective requirements.

## **Graduate Programs**

### **Pharmaceutical and Pharmacological Sciences**

The School of Pharmacy offers a doctor of philosophy degree in pharmaceutical and pharmacological sciences with two tracks: health outcomes research and pharmaceutical and pharmacological sciences aimed at educating competent researchers and educators. Programs for the degree of master of science (M.S.) and doctor of philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

### **Admission Requirements**

Applicants for admission into the graduate program must satisfy the WVU and Health Sciences Center general requirements for admission as graduate students. The applicant must possess a baccalaureate degree with background in a suitable area of study, an overall grade point average of at least 3.0, and the aptitude and interest for graduate work in the pharmacological sciences and health outcomes research to be admitted. Applicants not meeting the admission criteria may be considered for admission under alternate admission classifications as explained in the *WVU Graduate Catalog*. In addition, Graduate Record Examination (GRE) scores in the verbal, quantitative, and analytical essay portions are required from all students planning on entering the pharmaceutical and pharmacological sciences graduate program. TOEFL, or similar scores are required of all international students from countries where English is not the primary language.

### **Academic Standards**

No credits are acceptable toward a graduate degree with a grade lower than a C. A graduate student must have a cumulative grade point average of at least 3.0 in all graduate courses to continue in the program and to qualify for a M.S. or Ph.D. degree.

## **Doctor of Philosophy (Ph.D.)**

The School of Pharmacy offers programs of study leading to the doctor of philosophy (Ph. D.) degree in the pharmaceutical and pharmacological sciences via two tracks: health outcomes research and pharmaceutical and pharmacological sciences. Specialty areas of study include medicinal chemistry, pharmaceuticals, drug metabolism, and health outcomes and policy research.

### **Requirements for Ph.D. Degree**

To obtain specific application and admission information about the Ph.D. program track in health outcomes and policy research and availability of fellowships or graduate assistantships please visit [http://www.hsc.wvu.edu/sop/psp/programs/phd\\_graduate.html](http://www.hsc.wvu.edu/sop/psp/programs/phd_graduate.html) or e-mail [smadhavan@hsc.wvu.edu](mailto:smadhavan@hsc.wvu.edu). The program is housed in the Department of Pharmaceutical Systems and Policy.

Students planning on enrolling in the pharmaceutical and pharmacological sciences program track are enrolled in the health sciences center undifferentiated graduate program during the first year of study. During the first semester, students take a required set of courses and rotate through the laboratories of potential research mentors. This is continued in the second semester though some coursework in the Health Sciences Center thematic areas including the pharmaceutical and pharmacological sciences can be taken. At the end of the first year, students may formally enroll in the pharmaceutical and pharmacological sciences graduate program, a research advisor is selected, and the student's Ph.D. committee established. While students may obtain an M.S. degree, it is not necessary for entry into the Ph.D. program.

Upon completion of the second year of graduate study, students in the pharmaceutical and pharmacological sciences program must submit a formal plan of study and a research plan that has been approved by their Ph.D. committee to the Health Sciences Center graduate program. Progress will continue with guidance from the student's Research Committee. Final admission to candidacy requires satisfactory performance on oral and written qualifying examinations. Subsequent to admission to candidacy, a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for a Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

## **Master of Science**

The same program requirements for the first year of graduate study are required of the M.S. degree student as those described for the Ph.D. student. The School of Pharmacy offers programs of graduate study leading to the degree of master of science in two program tracks: health outcomes research and pharmaceutical and pharmacological sciences. Students may specialize in health outcomes and policy research, pharmacology and toxicology, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceuticals, biopharmaceuticals, and pharmacokinetics.

### **Requirements for M.S. Degree**

To be eligible for the M.S. degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than six hours may be for research and thesis. Upon completion of the coursework and research requirements and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

For more specific information, contact the Associate Dean for Research and Graduate Programs, School of Pharmacy, P.O. Box 9500, Morgantown, WV 26506-9500. Graduate Council policy requires that any student in a master of science program has a minimum of 24 hours of regular coursework. A minimum of 24 hours of coursework other than thesis credit is standard and a minimum of 30 total hours is also standard.

# Courses

## Plan for Numbering Courses

For convenience, each course of study is designated by the name of the department in which it is given and by the number of that course. The plan for numbering courses is as follows:

**Courses 1–99** Developmental and community college certificate courses (does not require WVU Faculty Senate approval) and undergraduate professional development courses (courses that are designed for professional development and require students to possess a high school diploma but the course would not count toward graduation).

**Courses 100** Freshman/Lower Division: Intended primarily for freshmen although they may be taken by upper-division students if needed to complete degree requirements.

**Courses 200** Sophomore/Lower Division: Intended primarily for sophomores. These courses may have 100 or 200-level prerequisites.

**Courses 300** Juniors/Upper Division: Intended primarily for juniors. These courses may have extensive prerequisites or be limited to specific majors.

**Courses 400** Seniors/Upper Division: Intended primarily for seniors and selected graduate students. These courses are typically limited to advance undergraduates within a particular major or degree program and selected graduate students. No more than 40 percent of the credits counted for meeting requirements for a graduate degree can be at the 400 level.

**Courses 500** Undergraduate Seniors and Master's Level: Courses intended for advanced undergraduate and graduate students. Seniors may enter via petition/special permission. Undergraduates in any class carrying a 500-level course number must have a 3.0 cumulative grade-point average and written approval on special forms from the course instructor and the student's advisor(s).

**Courses 600** Master's Level: Courses intended for master's degree students (no undergraduate enrollment permitted).

**Courses 700** Master's and Doctoral Degree Level: Courses intended for doctoral students, and advanced master's students (no undergraduate enrollment permitted).

**Courses 900** Professional Development: Courses intended for professional development and require students to possess a bachelor's degree, but the courses do not count toward graduation and are not applicable towards a graduate degree. Grading is S/U only.

## Abbreviations Used in Course Listings

I	a course given in the first (fall) semester
II	a course given in the second (spring) semester
I, II	a course given each semester
I and II	a course given throughout the year
Yr	a course continued through two semesters
S	a course given in the summer
Hr	credit hours per course
lec	lecture period
rec	recitation period
lab	laboratory period
Conc	concurrent registration required
PR	prerequisite
Coreq	corequisite
consent	consent of instructor required
CR	credit but no grade

An asterisk (\*) following credit hours listed as variable indicates that the course normally carries three credit hours. Exceptions are made only in emergencies and must be approved by the departmental chair and by the professor teaching the course.

## Undergraduate Common Course Numbers

199. *Orientation to [subject/field]*. 1Hr. Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities, and opportunities.

293. *Special Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

490. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience*. I, II, S. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

492. *Directed Study*. I, II, S. 1-3 Hr. Directed study, reading, and/or research.

493. *Special Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494. *Seminar*. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

495. *Independent Study*. I, II, S. 1-6 Hr. Faculty-supervised study of topics not available through regular course offerings.

496. *Senior Thesis*. I, II, S. 1-3 Hr. PR: Consent.

497. *Research*. I, II, S. 1-6 Hr. Independent research projects.

498. *Honors*. I, II, S. 1-3 Hr. PR: Students in honors program and consent by the honors director. Independent reading, study, or research.

## Course Descriptions

### School of Dentistry

#### Professional, Graduate, and Undergraduate Courses

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 700–724; second year, 725–749; third year, 750–774; and fourth year, 775–799. Other University courses may be taken with the approval of the student's advisor and the associate dean for academic affairs. Courses included in the curriculum but offered by other colleges, schools, or departments may be located elsewhere in this catalog or in the *WVU Graduate Catalog*.

#### Dental Hygiene (DTHY)

100. *Health Care Terminology*. 1 Hr. This course provides the foundation for understanding common terminology used in health care. The components, pronunciation, proper use, and abbreviations of medical terminology will be discussed. Emphasis will be placed on dental terminology.

101. *Introduction to Dental Hygiene*. 1 Hr. PR: Permission from the director of dental hygiene. Historical evolution of the profession, the professional association, and its code of ethics will be emphasized. Professionalism, the various roles of a dental hygienist, legal scope of practice, and specialties of dentistry will also be included.

185. *Oral Anatomy*. 2 Hr. PR: Acceptance into dental hygiene. The human neck bones, muscles, nerves, blood supply, lymphatics, glandular tissue, fascia/spaces, TMJ, and spread of dental infection are the focus of this course.

186. *Dental Anatomy*. 2 Hr. PR: 100 and 185 and NBAN 301. Classroom and laboratory study of normal human dental morphology, tooth anomalies, pulp function, eruption patterns and occlusal relationships.

205. *Theory and Practice of Prevention*. 2 Hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.

210. *Dental Radiology*. 2 Hr. PR: Enrollment in dental hygiene. Basic principles and procedure in oral radiology techniques and interpretation.

211. *Dental Radiology*. 1 Hr. PR: 210. The application of radiology principles and techniques. Clinical integration and case presentations will be emphasized.

220. *Dental Nursing Techniques*. 2 Hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.

225. *Dental Hygiene Techniques*. 4 Hr. PR: Enrollment in dental hygiene. Fundamental principles and techniques of dental hygiene are presented through lectures, laboratory, and clinical participation.

293. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

300. *Anesthesia for Dental Hygiene*. I. 1 Hr. Application of neuroanatomy, physiology, and pharmacology to the administration of regional anesthesia using local anesthetic agents. Management of complications encountered and the techniques of administering these agents will be presented.

301. *Public Health*. 1 Hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community.

302. *Dental Health Education*. 3 Hr. PR: Enrollment in dental hygiene. Methods, materials, and resources used in teaching dental health to various population groups.

320. *Dental Radiology*. 2 Hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology techniques and interpretation.

322. *Dental Radiology*. 1 Hr. PR: 320. The application of radiology principles and techniques. Clinical integration and case presentations will be emphasized.

350. *Public Health*. 2 Hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community. Methods and techniques utilized in dental hygiene research.

351. *Dental Health Education*. 3 Hr. PR: Enrollment in dental hygiene. Methods, materials, and resources used in teaching dental health to various population groups.

360. *Dental Materials*. 3 Hr. PR: Enrollment in dental hygiene. Lecture and laboratory covering the science and manipulation of dental materials.

361. *Expanded Functions*. 2 Hr. PR: 360. Lecture and laboratory covering specialty topics in dentistry and four-handed dental assisting. Assisting, and the placing and carving of amalgam and resin restorations in dentiform teeth. (1 hr. lec., 4 hr. lab.)

363. *Periodontics 1*. 1 Hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, assessment, diagnosis, treatment, and prevention within the scope of dental hygiene.

364. *Periodontics 2*. 2 Hr. PR: 363. A sequential course to 363.
366. *Technical Expression and Dental Literature*. 1 Hr. PR: Dental hygiene major. Preparation and analysis of professional communications.
370. *Dental Hygiene Clinical Methods*. 2 Hr. PR: 225. Principles of oral debridement, instruction in the care of special patients, use of diagnostic aids, and nutritional counseling.
372. *Clinical Dental Hygiene 1*. 2 Hr. PR: 225. Clinical application of dental hygiene principles and techniques.
374. *Clinical Dental Hygiene 2*. 3 Hr. PR: 370, Coreq: 372. Clinical application of dental hygiene principles and techniques.
378. *Dental Hygiene Teaching Methods*. 2 Hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
380. *Interdisciplinary Approach to Rural Health*. 1 Hr. Fundamental principles of and background information on Appalachian history, poverty, and cultural diversity for the assessment of rural health needs. Assess the delivery of health care services and community development in rural settings.
402. *Dental Hygiene Practice*. 2 Hr. PR: Enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.
405. *Advanced Clinical Dental Hygiene 1*. 4 Hr. PR: Fourth year in dental hygiene. Principles of advanced clinical dental hygiene and practice in non-traditional settings. Clinical experience in traditional and expanded duties; pre- and post-operative care of surgical patients, and radiology.
406. *Advanced Clinical Dental Hygiene 2*. 3-4 Hr. PR: Fourth year in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures.
407. *Advanced Dental Hygiene Methods 2*. 2 Hr. PR: Fourth year in dental hygiene. Principles of advanced clinical dental hygiene and practice in non-traditional settings.
409. *Clinical Dental Hygiene*. 1 Hr. PR: 374. This course enables senior dental hygiene student to gain proficiency in the treatment of patients.
440. *Senior Integration Seminar*. 1 Hr. PR: Consent. A thorough analysis and integration of didactic, laboratory and clinical content via lectures, discussions and cases in preparation for licensure.
450. *Dental Health Education 2*. 2 Hr. PR: 302. Advanced dental health education with a research component. A problem based learning experience.
451. *Dental Health Education 3*. 2 Hr. PR: 450. Advanced dental health education with field experiences in three settings. Case histories developed and research study completed.
478. *Clinical Evaluation. I*. 1 Hr. PR: 378. Preparation for clinical instruction and evaluation. Emphasis is placed on clinical evaluation procedures, proper instrumentation and the skills/strategies utilized to promote affective and psychomotor skill development in students.
490. *Teaching Practicum*. 1-3 Hr. Teaching practice as a tutor or assistant.
491. *Professional Field Experience*. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
- 493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
494. *Seminar*. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
495. *Independent Study, I, II, S*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
496. *Senior Thesis*. 1-3 Hr. PR: Consent.
498. *Honors*. 1-3 Hr. PR: Students in honors program and consent by the honors director. Independent reading, study or research.
678. *Dental Hygiene Teaching Methods. II*. 2 Hr. PR: Consent. Concepts and principles of administration, curriculum, and classroom teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
679. *Clinical Evaluation. I*. 2 Hr. PR: 678. Preparation for clinical instruction and evaluation. Emphasis is placed in clinical evaluation procedures, proper instrumentation and the skills/strategies utilized to promote affective and psychomotor skill development in students.
680. *Dental Hygiene Seminar and Practice 1*. 3 Hr. PR: Graduate standing and consent. Examination of the critical environmental issues affecting the future of health care; particular impact on oral health care trends will form major focus. Dental hygiene clinical practice is also included.
681. *Dental Hygiene Seminar and Practice 2*. 3 Hr. Expanded services for the dental hygienist with emphasis on restorative and periodontal functions.

682. *Enhancing Class Administration*. 2 Hr. The use of "office productivity" software to enhance classroom and clinic administration. Course targeted toward students destined for careers in dental hygiene or dental education.

685. *Research Methods for the Dental Hygienist*. 3 Hr. PR: EDP 613. Methods and techniques of research in dental hygiene. Major emphasis on planning and evaluating health programs, conducting oral health surveys, designing experiments and critically analyzing research results.

690. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of dental hygiene. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

691 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

695: *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

697. *Research*. 1-15 Hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

698. *Thesis*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during that writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

## **Dentistry (DENT )**

600. *Advanced Oral Surgery*. I, II, S. 1-12 Hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications. (Grading will be S/U.)

690. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of dentistry. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

697. *Master's Degree Research or Thesis*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project.

700. *Anesthesiology*. 1 Hr. Lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.

701. *Arts and Sciences of Preventive Dentistry*. 2 Hr. Lectures dealing with the philosophy and techniques of preventive dentistry.

703. *Introduction to Patient Care*. 3 Hr. Lectures, laboratory, and clinical experiences designed to develop skill in performing through clinical assessments, defining ethical/legal issues in patient care, and performing procedures to prevent and control disease.

704. *Operative Dentistry*. II. 4 Hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Characteristics and treatment of caries emphasized.

707. *Introduction to Clinical Dentistry*. 2 Hr. Enrollment in dental curriculum observing, assisting and actively participating in the provision of care to patients assigned to the student clinics in the School of Dentistry.

710. *Dental Anatomy and Occlusion*. 4 Hr. Anatomy of individual teeth, both permanent and primary, in regard to form and function.

711. *Periodontics*. S. 2 Hr. Introduction to periodontal diseases, their diagnosis and treatment. Laboratory instruction is included.

712. *Dental Materials*. 3 Hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.

715. *Introduction to Community Dentistry*. 2 Hr. PR: DENT 701. Preparation to conduct needs assessment of individuals and groups, and perform program planning, implementation and evaluation. Field experiences are included.

719. *Pedodontics*. 1 Hr. PR: Consent. Normal growth and development presented from physical, intellectual, psychological, and oral perspectives. Behavior of children in dental environment reviewed and strategies for management examined.

721. *Endodontics*. 2 Hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.

722. *Tooth-Colored Restorations*. 4 Hr. PR: DENT 710 and DENT 704. Preclinical course to include a variety of esthetic dental procedures. Teeth will be prepared for insertion of tooth colored restorations.

723. *Clinic Orientation*. 1 Hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.

725. *Practice Management*. II. 1 Hr. A lecture course designed to prepare dental students in the concepts of four-handed dentistry.

726. *Removable Partial Dentures*. 7 Hr. A didactic and laboratory course that provides the fundamental knowledge and psychomotor skills necessary for the treatment of partially edentulous patient with a removable partial denture by the general dentist.

727. *Oral Radiology*. 1 Hr. The physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
729. *Gold Direct and Indirect Restorations*. 3 Hr. Lectures related to standard clinical procedures and laboratory instruction in direct and indirect cast gold restorations.
730. *Community Dentistry*. II. 2 Hr. Lectures provide the student with a basic knowledge of the principles of dental public health practice. Emphasis is placed on preparing students for their rural site rotation(s)
731. *Occlusion*. 2 Hr. PR: Consent. Didactic and clinic/laboratory instruction in the basic techniques and procedures associated with the treatment of conditions related to faulty occlusion.
732. *Periodontics*. II. 1 Hr. Lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition.
734. *Complete Dentures*. 6 Hr. Didactic and laboratory course which identifies, discusses and develops the fundamental knowledge and psychomotor skills necessary for the treatment of the edentulous patient by the general dentist.
735. *Pediatric Dentistry*. 1 Hr. PR: Consent. Didactic instruction foundational to the dental care to children presented in the following modules of instruction: oral diagnosis/treatment, planning/case presentation, prevention, restorative dentistry, pulpal therapy, management of the developing occlusion and trauma to the dentition and oral structures.
736. *Fixed Prosthodontics*. 8 Hr. PR: DENT 704 and DENT 722 and DENT 731. Lecture and laboratory course on principles and techniques of diagnosing, preparing, and restoring teeth with artificial crowns and fixed partial dentures by the general dentist.
737. *Treatment Planning*. 1 Hr. Introduction to the universal principles of professional treatment planning for adult patients.
739. *Oral Surgery*. 1 Hr. Didactic instruction in basic surgical principles as applied to the extraction of teeth dento-alveolar surgery.
740. *Periodontics*. 1 Hr. Intermediate didactic instruction in periodontal therapy including basic surgery and post-operative care.
744. *Diagnosis and Treatment Planning*. 1 Hr. Analysis of orthodontic diagnostic records, diagnostic skills for various malocclusions, and formulation of a treatment plan to orthodontic cases.
745. *Principles of Orthodontics*. 1 Hr. Facial growth and development, the development of occlusion, and etiology and classification of malocclusions.
746. *Orthodontic Techniques*. 1 Hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
747. *Management of Medical and Dental Emergencies*. 1 Hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.
751. *Occlusion*. 1 Hr. PR: Consent. Advanced study of the science of occlusion with particular attention to its impact on the clinical diagnosis and treatment of occlusal disorders.
752. *Community Dentistry*. 2 Hr. Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.
754. *Introduction to Dental Implantology*. 2 Hr. PR: Consent. Implant diagnosis, treatment planning, selection, placement, restoration, and maintenance are discussed utilizing a multidisciplinary team approach. Surgical and prosthetic experiences are gained during the laboratory sessions.
758. *Senior Seminar*. 2 Hr. More complex and advanced techniques for clinical practice in all disciplines in dentistry with emphasis on new developments in oral surgery and endodontics.
759. *Oral Surgery*. 2 Hr. PR: Consent. Didactic instruction in patient evaluation, complicated exodontia, preprosthetic surgery, diagnosis, surgical and adjunctive treatment of disease, injuries, and defects of human jaws and associated structures.
761. *Pediatric Dentistry*. 1 Hr. PR: Consent. Continued didactic instruction in dentistry for the child patient with the following learning packages programmed: abnormal dental development, oral habits, and adolescent dentistry.
763. *Periodontics*. 2 Hr. Advanced didactic instruction in periodontal therapy including special surgical procedures.
765. *Orthodontics*. 1 Hr. Introduction to clinical orthodontics; lectures on case analysis, treatment planning, and clinical procedures involved in interceptive, preventive, and adjunctive treatment of malocclusions.
766. *Applied Pediatric Dentistry*. 2 Hr. PR: DENT 719 and DENT 735. Didactic and pre-clinical instruction in the treatment of children's oral health. Includes treatment planning/case presentations, general restorative procedures, management of developing occlusion, and trauma to dentition and oral structures.
767. *Community Dentistry*. 1-15 Hr. Field experience in various aspects of community health.
768. *Hospital Dentistry Practicum*. 1-15 Hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient.
769. *Practice Management (Ethics and Law in Dentistry)*. 1 Hr. PR: Junior standing in dentistry. Core knowledge of the ethical and legal issues in dentistry; ethical and legal decision making process.

770. *Clinical Oral Radiology*. 0-6 Hr. Clinical application of principles presented in DENT 703 and DENT 727 with additional instruction in techniques and interpretation of radiographs with special emphasis to role played in oral diagnosis.

771. *Practice Management*. 2 Hr. PR: DENT 725. A lecture series on the fundamentals of practice management, including the organization and development of the practice, personnel and financial management, and the introduction to TEAM dentistry.

772. *Case Based Treatment Planning*. 1 Hr. This course will involve the comprehensive analysis of complex cases in order to formulate an appropriate ideal treatment plan with suitable alternatives. The student must assimilate patient information into the S.O.A.P format and present the case before faculty and peers.

773. *Composite Restorations*. 1 Hr. This course will provide theory and preclinical instruction in the selection and fabrication of optimal composite restorations that satisfy biologic, mechanical and esthetic requirements.

774. *Principles of Medicine*. 2 Hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.

775. *Practice Management*. 0-6 Hr. PR: Consent. Clinical practice using auxiliaries, including those trained in expanded functions.

776. *Removable Prosthodontics*. 0-6 Hr. Continued application of the theory and practice of removable prosthodontics.

777. *Periodontics*. 0-6 Hr. Clinical experience in the diagnosis and treatment of periodontal diseases.

778. *Law and Ethics in Dentistry*. 2 Hr. Select legal concepts and the process of ethical decision making as related to the practice of dentistry. Case analysis is the primary method of instruction.

780. *Endodontics*. 0-6 Hr. Clinical endodontic instruction in order to develop the skills and judgement necessary to treat diseases of the dental pulp and their sequelae.

781. *Patient Management*. 1 Hr. (Repeated four times.) This course develops professional responsibility and time management through monitoring of patient care activity, which includes treatment, case presentations, diagnostic reviews and clinic service assignments. (Grading will be S/U.)

783. *Operative Dentistry*. 0-6 Hr. Instruction in the clinic setting includes comprehensive diagnosis and treatment planning, computer assisted records, plaque control, caries control, and single tooth restorations. Sufficient variety and depth of experience occurs to obtain competence for independent practice of operative dentistry.

784. *Oral Surgery*. 0-6 Hr. Clinical instruction in outpatient and inpatient oral surgery necessary to provide comprehensive care for the dental patient.

785. *Orthodontics*. 0-6 Hr. Clinical management of selected malocclusion problems.

786. *Pediatric Dentistry*. 0-6 Hr. Instruction in the clinical setting with the goal of developing the psychomotor skills and judgment necessary to provide comprehensive care for the child patient.

787. *Clinical Oral Diagnosis*. 0-6 Hr. Clinical application of principles presented in DENT 303 and DENT 337, providing opportunities for observation and analysis of clinical problems.

788. *Clinic Completion Practicum*. 1-15 Hr. Supervised patient care in selected clinical areas specified for each individual student according to their clinical competency requirements. (Grading will be S/U.)

789. *Fixed Prosthodontics*. 0-6 Hr. PR: Consent. Clinical application of the theory and practice of crown and bridge dentistry.

790. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of dentistry. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

791 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

792. *Directed Study*. 1-6 Hr. Directed study, reading, and/or research.

793. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

794. *Special Seminars*. 1-6 Hr. Seminars arranged for advanced graduate students.

795. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

## **Endodontics (ENDO)**

688. *Clinical Endodontics*. I, II, S. 1-5 Hr. (May be repeated for credit.) PR: Graduate of an accredited dental school and admission to the advanced education program in endodontics or consent. Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.

689. *Endodontic Theory*. I, II, S. 2 Hr. (May be repeated for credit.) PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review case presentation, and advanced endodontic theory.

690. *Teaching Practicum*. I, II. 1-3 Hr. PR: Consent. Supervised practice in college teaching of dentistry.

691. *Advanced Topics*. I, II. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

697. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis (697), problem report (697), research paper or equivalent scholarly project (697), or a dissertation (797). (Grading will be S/U.)

## **Orthodontics (ORTH)**

616. *Biomechanics*. I, II, S. 2 Hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.

617. *Orthodontic Technique*. I, II, S. 2 Hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.

618. *Orthodontic Materials*. I, II, S. 1 Hr. PR: Consent. Physical properties of materials used in orthodontic appliances.

619. *Orthodontic Diagnosis*. I, II, S. 1-3 Hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.

620. *Cephalometrics*. S. 1-3 Hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.

621. *Orthodontic Mechanics*. I, II, S. 1-4 Hr. Seminar and laboratory course on basic orthodontic mechanical properties.

622. *Advanced Orthodontic Mechanics*. I, II, S. 1 Hr. Continuation of ORTH 621 involving more difficult type cases and introducing more sophisticated appliance therapy.

623. *Growth and Development*. I, II, S. 1-5 Hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.

625 A-Z. *Orthodontic Seminar*. I, II, S. 1-8 Hr. PR: Consent. Discussions including all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.

626. *Orthodontic Clinic*. I, II, S. 1-12 Hr. PR: ORTH 616 and ORTH 617. Clinical treatment of selected patients.

690. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of dentistry.

691. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

692. *Directed Study*. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

693. *Special Topics*. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

694. *Seminar*. I, II, S. 1-6 Hr. Seminars arranged for advanced graduate students.

695. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

696. *Graduate Seminar*. I, II, S. 1 Hr. PR: Consent. It is anticipated that each graduate will present at least one seminar to the assembled faculty and graduate student body of his/her program.

697. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis (697), problem report (697), research paper or equivalent scholarly project (697), or a dissertation (797). (Grading will be S/U.)

716. *Craniofacial Growth and Maturation*. 1 Hr. PR: Consent. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

## **Occupational Therapy (OTH)**

300. *Essentials of Clinical Anatomy*. 4 Hr. PR: OTH student status. A study of human gross anatomy, micro anatomy and embryology with major emphasis on the musculoskeletal system.

301. *Professional Foundations*. 3 Hr. PR: OTH student status. Introduction to fundamentals of professional behavior for the occupational therapist. Includes units on history, paradigms, communication, documentation, ethics, interdisciplinary teamwork, licensure requirements, and medical terminology.

302. 2 Hr. PR: OTH student status. An introduction to analysis of clinical and research problems, including strategies for problem analysis and outcome.

303. *Functional Movement Across the Lifespan*. 2 Hr. PR: OTH student status. Including acquisition of developmental patterns, motor control, motor skill acquisition. This course also provides an overview of the effects of normative processes of aging on neuromotor patterns in occupational performance.

304. *Occupational Science*. 4 Hr. PR: OTH student status. An introduction to signs and symptoms and medical management of orthopedic and physical dysfunction/disabilities encountered by the occupational therapist. Emphasis is upon the effects of physical dysfunction/disabilities on human occupation.

306. *Kinesiological Foundations*. 4 Hr. PR: OTH student status. Functional anatomical correlations and human movement. Statics, biomechanics, dynamics and functional movement analysis.

307. *Neurobiologic Foundations*. 4 Hr. PR: OTH student status. Basic and clinical applications or neuroanatomy and neuro-

ogy. Includes lectures on neurophysiological basis of physical and occupational therapy practice.

308. *Evaluation Procedures*. 3 Hr. PR: OTH student status. Theory and practice in evaluation procedures used by therapists. Includes Manual Muscle Test, isokinetic muscle testing, and assessment of components of movement, posture, balance, and hand function.

321. *Development Life Tasks*. 3 Hr. PR: OTH student status. Life-span human development across cognitive, psychosocial and neuromotor domains with particular emphasis on applications to physical or occupational therapy interventions. Includes focus on cultural influences in health and illness.

360. *Research Methods in Occupational Therapy*. 3 Hr. PR: OTH student status. An introduction to principles of research methodology and data analysis in the realm of occupational science/occupational therapy. Includes a focus on scientific methodology, research design, data collection, data analysis, and ethical considerations.

384. *Level I Fieldwork 1*. 2 Hr. CPR training and clinical instruction in the occupational therapy process. OT documentation, basic measurement skills, experiences with people with disabilities, and participation in professional activities. (Grading will be P/F.)

385. *Level I Fieldwork 2*. 2 Hr. PR: OTH student status. Students will be provided with fieldwork experience in the occupational therapy process, and ADL preceptual, and mental health assessments. Students will be placed in a variety of settings where mental health issues may be observed. (Grading will be P/F.)

386. *Level I Fieldwork 3*. 2 Hr. PR: OTH student status. Students will be provided with fieldwork experiences in occupational therapy processes. (Grading will be P/F.)

401. *Occupational Science 2*. 4 Hr. PR: OTH student status. An introduction to signs and symptoms and management and effect of neurological dysfunction and disabilities on human occupation encountered by the occupational therapist. Includes theories of treatment and basic treatment technologies.

402. *Clinical Decision Making 1*. 2 Hr. PR: OTH student status. Continuation of preparation for critical thinking and decision making in the field using appropriate information and technology in a case study format. An emphasis on autonomous practice and referral decisions.

406. *Cardio-Pulmonary Rehabilitation*. 3 Hr. PR: OTH student status. Lectures on cardiovascular and pulmonary conditions including medical interventions. Discipline-specific laboratory sessions include stress testing, physical capacity assessment, ecological analysis, use of monitoring equipment, and evaluation and planning rehabilitation protocols.

408. *Tests and Measures in Occupational Therapy*. 1. 3 Hr. PR: OTH student status. Presentation of tests and measures used by occupational therapists in the assessment of various conditions. Emphasis will be placed on the clinical and functional evaluation of clients within the domain of occupational therapy practice.

414. *Developmental Disabilities*. 2 Hr. PR: OTH Student Status. Overview of occupational therapy approaches toward developmental disabilities, including focus on etiology, pathology, and progression of conditions specific to various developmental disabilities.

416. *Professional Decision-Making*. 2 Hr. PR: OTH student status. Students are provided with opportunities to develop critical thinking, clinical reasoning, and decision-making skills in occupational therapy. Emphasis is on autonomous practice and referral decisions.

417. *Occupational Therapy in Geriatrics*. 3 Hr. PR: OTH student status. Overview of normative aging using an occupational therapy frame of reference. Common problems of seniors are discussed.

419. *Professional Values*. 3 Hr. PR: OTH student status. An introduction to ethics and how it specifically applies to rural health and life in West Virginia. Students will be given an opportunity to explore their own conceptions of ethics in health care.

430. *Occupational Therapy in Mental Health*. 3 Hr. PR: OTH student status. Clinical and functional science lectures pertaining to OT practice in mental health environments. Course includes introduction to occupational therapy clinical and functional assessment, and management protocols.

432. *Occupational Therapy Interventions in Mental Health II*. 4 Hr. PR: OTH student status. Interventions commonly used by occupational therapists in the field of mental health. Emphasis on group processes, life skills, reintegration strategies.

435. *Therapeutic Activity*. 3 Hr. PR: OTH student status. Students will develop skills in performance component analysis, performance context analysis, and occupational performance analysis.

480. *Current Topics in Occupational Therapy*. 1-3 Hr. PR: OTH student status. (Not to exceed 18 hr.) A seminar course designed to provide a forum for discussing the frontiers of the occupational therapy profession. Topics may include: research in progress, new developments, and salient professional issues.

493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

497. *Research*. I, II, S. 1-6 Hr. Independent research projects.

500. *Health Care Issues in Occupational Therapy*. 3 Hr. PR: OTH student status. Occupational therapy practice models in diverse health care delivery systems are discussed, including hospital based, home health, outpatient/private practice, long term care settings, and public schools. (2 hr. lec, 2 hr. other.)

501. *Management for OT Practice*. 4 Hr. PR: OTH student status. This course reviews the structure and recent changes in the United States health care system with attention to those aspects of managed care of importance to the entry level occupational therapist. (3 hr. lec., 2 hr. lab.)

503. *Occupational Therapy in Pediatrics*. 3 Hr. PR: OTH student status. This course reviews the medical and developmental conditions of pediatric populations commonly encountered by occupational therapists. Emphasis is placed on OT assessment and interventions. (2 hr. lec., 2 hr. lab.)

505. *Prosthetics and Orthotics*. 3 Hr. PR: OTH student status. Principles of practice applications of upper and lower limb prosthetics and orthotics commonly encountered and/or manufactured by the occupational therapist. (1 hr. lec., 4 hr. lab.)

520. *Occupational Therapy in the Work Environment*. 3 Hr. PR: OTH student status. A holistic approach to evaluation and intervention commonly practiced by occupational therapists in work settings. This course will focus on task analysis in various work settings using an occupational performance frame of reference. (1 hr. lec., 4 hr. lab.)

540. *Level 2 Fieldwork 1*. 1-6 Hr. PR: OTH student status. Students are placed full-time for six weeks in a facility under the supervision of a licensed occupational therapist. Students are required to register for OTH 540 during Summer 1 and again during Summer 2 for a full 12-week six-credit fieldwork experience. (Course will be graded S/U.)

550. *Education in Occupational Therapy*. 3 Hr. PR: OTH student status. Principles of community and adult education are provided. Students are taught to prepare instructional materials, workshops/seminars, and how to assess instructional outcomes. Use of various media are used and reviewed.

551. *Occupational Therapy in Prevention and Wellness*. 3 Hr. PR: OTH student status. Students are taught occupational therapy principles and strategies to develop community health promotion and wellness programs in a variety of settings.

593. *Special Topics*. 1-6 Hr. A Study of contemporary topics selected from recent developments in the field.

640. *Level II Fieldwork 2*. 6 Hr. PR: OTH student status. Students are placed in one 12-week, or two six-week placement(s) depending on the facility and the needs of the student. Students will be placed in facilities where individualized instruction can occur. (Grading will be S/U.)

697. *Research*. 1-5 Hr. PR: OTH student status. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

## **Prosthodontics (PROS)**

688. *Advanced Clinical Prosthodontics*. I, II, S. 1-6 Hr. Advanced prosthodontic practice in the areas of fixed and removable partial dentures, complete dentures, temporomandibular dysfunction, maxillofacial prosthetics and implant prosthodontics.

689. *Advanced Prosthodontic Theory*. I, II, S. 1-6 Hr. Advanced theories and techniques in fixed and removable partial dentures, complete dentures, maxillofacial prosthetics, implantology and geriatric prosthodontics to include case presentations, literature surveys and articulator analysis seminars.

## **School of Medicine Professional, Graduate, and Undergraduate Courses**

### **Anesthesiology (ANES)**

691. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

697. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

701. *Basic Sciences Applied to Anesthesiology*. I, II. 1-6 Hr. PR: Consent. (Not offered during summer.) Examination and evaluation of date, decision-making, discussion of special procedures. (Max. enrollment: 10.)

731. *Clinical Clerkship in Anesthesiology and Acute Medicine*. 0 Hr. (Third year.) CR. Preanesthetic evaluation, local and systemic anesthesia, airway management, cardiopulmonary resuscitation, respiratory care, clinical pharmacology, toxicology, fluid and blood therapy, and pain management. Seminars and practical exercises in emergency cardiac life support clinical experience in ICU or OR. (Duration: 2 weeks.)

780. *Surgical Critical Care Medicine*. 0 Hr. Clinical rotation course. (See conjoined courses.)

790. *Teaching Practicum*. 1-3 Hr. PR: Consent. Supervised practice in the college teaching anesthesiology. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

791. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

792. *Directed Study*. 1-6 Hr. Directed study, reading, and/or research.

793. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

794. *Seminar*. 1-6 Hr. Seminars arranged for advanced graduate students.

795. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

797. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through his/her department's graduate Colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U.; colloquium credit may not be counted against credit requirements for master's programs.)

## **Behavioral Medicine and Psychiatry (BMP)**

691. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

697. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

741. *Clinical Clerkship in Psychiatry*. 3 Hr. This is a clinical rotation course required for all third year medical students. Students will be assigned to work with both in- and out-patient psychiatric care. Focus will be on making psychiatric diagnoses and implementing appropriate treatments. Students will become familiar with various types of psychiatric disorders as well as their treatment. Students will learn about psychopharmacology, psychotherapy, and other biological treatments. Students will also be on call for and involved in the treatment of emergency department psychiatric patients.

790. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of behavior medicine and psychiatry. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

791. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

792. *Directed Study*. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

793. *Special Topics*. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

794. *Seminar*. I, II, S. 1-6 Hr. Seminars arranged for advanced graduate students.

795. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. I, II, S. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

798. *Dissertation*. 2-4 Hr. PR: Consent. Note: this is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. I, II, S. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U.; colloquium credit may not be counted against credit requirements for master's programs.)

930. *Professional Development*. 1-6 Hr. Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g., education, community health, geology). These tuition waived continuing education courses are graded on a satisfactory or unsatisfactory grading scale and do not apply as graduate credit toward a degree program.

## **Biochemistry (BIOC)**

339. *Introduction to Biochemistry*. I. 3-5 Hr. PR: General chemistry, organic chemistry. (For medical technology, undergraduate biochemistry majors, and other students.) A general introduction to biochemistry with emphasis on human biochemistry. (Lec., 4 hr.; Lab., 1 hr.)

492. *Directed Study*. I, II, S. 1-6 Hr. (May be repeated for a maximum of 12 Hr.) PR: Consent.

493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

494 A-Z. *Seminar*. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

496. *Senior Thesis*. 1-3 Hr. PR: Consent.

497. *Research*. 1-6 Hr. Independent research projects.
498. *Honors*. 1-3 Hr. PR: Students in honors program and consent by the honors director. Independent reading, study or research.
531. *General Biochemistry*. II. 4 Hr. PR: General chemistry, organic chemistry. (For pharmacy students; others by consent.) Consisting of the lecture portion of BIOC 705, this course is designed to be a general introduction to biochemical compounds, processes and concepts for students in the pharmacy program. Master's program students and others by consent. Four lectures per week.
551. *Cell and Molecular Biochemistry 1*. I. 4 Hr. PR: General chemistry and organic chemistry. Part I of a two-semester graduate-level course that instills comprehension of biochemistry, molecular biology and cell biology necessary for biomedical research. This course covers biochemical principles, proteins, and molecular biology.
552. *Cell and Molecular Biochemistry 2*. II. 4 Hr. PR: BIOC 351. Part II of a two-semester graduate-level course that instills comprehension of biochemistry, molecular biology and cell biology necessary for bio-medical research. This course covers metabolism, metabolic regulation, cell structure and cellular communication.
595. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
650. *Supervised Teaching*. 1-6 Hr. PR: Consent. Supervised college teaching of biochemistry.
652. *Journal Club*. 1-6 Hr. Discussions of recent important topics in scientific literature.
690. *Teaching Practicum*. I, II. 1-3 Hr. Consent of chairperson. Supervised practice in college teaching of biochemistry. (Graded as S/U.)
- 693 A-Z. *Special Topics*. I, II. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.
697. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper, or equivalent scholarly project, or a dissertation. (Grading will be S/U.)
698. *Thesis*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)
705. *General Biochemistry*. II. 5 Hr. PR: General chemistry, organic chemistry. (For dental students.) General introduction to biochemical compounds, processes and concepts as part of the training for the practice of dentistry, including passage of the Dental Board Exam. Four lectures and one clinical correlation or small group discussion per week.
750. *Protein Chemistry/Enzymology*. 4 Hr. PR: Consent. Advanced topics in protein structure function relationships and enzymology. Emphasis is placed on emerging topics in the literature.
751. *Advanced Molecular Biology*. 4 Hr. PR: Consent. A study of contemporary topics in molecular biology. This is an advanced seminar-style class using material from the current literature.
790. *Teaching Practicum*. 1-3 Hr. PR: Consent. Supervised practice in college teaching of biochemistry. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)
- 791A-Z. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses. Through specially scheduled lectures.
- 792 A-Z. *Directed Study*. I, II, S. 1-6 Hr. Directed study, reading, and/or research.
793. *Special Topics*. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.
794. *Seminar*. I, II, S. 1-6 Hr. Seminars arranged for advanced graduate students.
796. *Graduate Seminar*. I, II, S. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.
797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)
798. *Dissertation*. I, II, S. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)
799. *Graduate Colloquium*. I, II, S. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her departments graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **Community Health Promotion (CHPR)**

170. *Health of the Individual*. 3 Hr. Examines personal health-related problems in terms of information, services, and actions as they relate to attainment and maintenance of individual health.

172. *First Aid and Emergency Care*. 2 Hr. Emergency aid for the sick and injured. Emergency services aimed at reducing the potential of permanent disability or threats to life, as well as pain, damage, or suffering of a less serious nature.
210. *First-Aid Teaching Practicum*. 3 Hr. This class prepares students to conduct a first-aid course. Students work with the instructor in all aspects of course management. Students who complete this course are eligible to apply for instructor candidate training with the American Red Cross.
250. *History and Philosophy of Health Education*. 3 Hr. Provides the student with a historical perspective of health education's development, its present status, and its current philosophical foundations.
260. *Introduction to Peer Health Education*. 3 Hr. Prepares students to become peer health educators through the study of health concerns of students in higher education and examination of effective teaching strategies that result in positive health outcomes.
261. *Advanced Peer Health Education*. 3 Hr. Students apply a variety to teaching strategies based on the peer concept to health concerns of college students and other young adults.
265. *HIV/STD Prevention: Global Challenge*. 3 Hr. Addresses personal, social, legal, medical, and cultural aspects of HIV and sexually transmitted diseases and the health education efforts to stem the pandemic.
270. *Alcohol/Drug Education for Athletes*. 3 Hr. Chemical use and dependency has a significant impact on people in all walks of life. An overview of chemical dependency and current prevention and intervention is presented.
271. *Health in the Community*. 3 Hr. Develops an understanding of the organization, structure, and function of official, voluntary, and professional community health components in terms of their protecting and maintaining the health of the community.
275. *Substance Abuse: Student Leaders*. 3 Hr. Provides individuals, particularly those in organizational leadership roles, with an understanding of substance abuse, leadership roles, and decision-making skills for organizations.
- 293 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
301. *Elementary School Health Program*. 2 Hr. PR: Junior standing. The organization, educational aspects, and personnel relationships involved in elementary school health services, healthful school living, and health education.
302. *Secondary School Health Program*. 3 Hr. PR: CHPR 170 and CHPR 301. Overview of coordinated school health: organizational structure, community and national partnerships, and instructional modalities/evaluation of secondary school methods.
305. *Disease Across the Life Span*. 3 Hr. PR: CHPR 170. Students will identify causative factors, treatment, prevention, and educational implications for disease across the life span.
320. *Drug and Alcohol Abuse Prevention*. 3 Hr. Experiences designed to prevent the development of abusive drug-taking relationships by focusing on psychological variables such as self-esteem, coping skills, and development of support networks.
331. *Accident Prevention and Control Principles*. 3 Hr. Basic course which structures principles, concepts, and methodology of the safety movement into introductory experiences dealing with accident prevention and control efforts recommended for various social institutions and agencies.
332. *Safety Education Principles and Content*. 3 Hr. PR: CHPR 331 or consent. Study and analysis of content areas usually recommended for instructional programs within the field of safety, with emphasis on structured learning experiences.
333. *Foundations of Wellness*. 3 Hr. Provide students with physical, mental, emotional, and environmental health concepts and experiences that will expand their knowledge and skills. These relate to the processes and techniques for promoting and maintaining individual and community health changes.
365. *Men's Health*. 3 Hr. Optimal health is a theme for men across the lifespan. This course will address men's health specific to race, ethnicity and orientation, to provide skills to be an informed consumer of health information.
375. *Physical Lifestyle Management*. 3 Hr. This course will provide an experience conducive to the understanding, exploration, experience, and development of scientifically sound physical health behaviors within the framework of the Transtheoretical Model of Health Behavior.
376. *Mental Lifestyle Management*. 3 Hr. This course will provide experience conducive to the understanding, exploration, and development of mental, emotional, and spiritual health processes that comprise and support personal holistic health.
380. *Women and Health*. 3 Hr. Examination of theories, myths, and practices surrounding women's physical and mental health from both historical and present-day perspectives. Exploration of specific health issues and controversies and the rise of the women's health movement.
400. *School Health Teaching Seminar*. 2 Hr. PR: CHPR 250 and CHPR 301 and CHPR 302. This course is designed for students who plan to complete their student teaching requirement in health education. Format of the course will include lecture, discussion, and student teaching in a public school.
436. *Introduction to Worksite Wellness*. 3 Hr. An Introduction to the field of health promotion in a worksite setting. Persons with interest in exploring the possibility of employment in health promotion in a worksite setting will find this course helpful.
490. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.

491. *Professional Field Experience*. I, II, S. 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
- 493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Consideration of persistent issues and changing problems in the health promotion field. Emphasis will be placed upon health promotion interests of participating class members.
494. *Seminar*. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
495. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
496. *Senior Thesis*. 1-3 Hr. PR: Consent.
498. *Honors*. 1-3 Hr. PR: Students in honors program and consent by the honors director. Independent reading, study or research.
507. *Community Health: Human Sexuality*. 3 Hr. PR: Consent. Analysis of sex-related issues including parenting, sex education, sexual sanctions, pornography, sexual dysfunction, and sexual variance. Designed for teachers, health professionals, and interested lay people.
509. *Community Health: Drug Education*. 3 Hr. PR: Consent. Designed to help students learn appropriate components of a drug education program, gain an understanding of drug taking in this society, and acquire insights into dependent behaviors.
604. *Advanced School Health*. 3 Hr. PR: Admission to the school health master's program. Courses addresses the teacher's role in organizing and implementing comprehensive school health programs at the elementary and secondary levels. Additional attention is paid to providing instruction specific to the health educator skills and standards.
612. *Social and Behavioral Theory*. 3 Hr. The focus of this course is on the role of individual behavior in attaining health. Integration of the concepts of health education and behavioral science to facilitate changes in health behavior is addressed.
613. *Certified Health Education Specialist*. 1 Hr. This course addresses competencies of a Certified Health Education Specialist (CHES), and prepares students for the national credentialing exam.
614. *Injury Prevention and Control*. 3 Hr. The injury control problem is examined as a public health concern. Strategies and programs for injury prevention are studied for implementation with target groups who are overrepresented within the injury problem.
633. *Foundations of Wellness*. 3 Hr. Wellness is examined as a component of health promotion. A wellness lifestyle is fundamental to promoting a holistic wellness concept. Quality-of-life issues and programs are explored for a variety of audiences.
634. *Health Promotion Research Methods*. 3 Hr. PR: CHPR 612. This course is designed to introduce students to the basic elements of conducting effective evaluation of health promotion programs.
635. *Management for Community/Public Health*. 3 Hr. PR: CHPR 612 and PUBH 601. The course provides students with the essential skills to be effective managers in the community and public health environment.
638. *Community Health Assessment/Evaluation*. 3 Hr. PR: CHPR 612 and PUBH 601. This course is designed to convey theory and practice for developing health promotion programs. The course addresses assessment and evaluation principles appropriate to a wide range of health promotion programs.
640. *School Health Program Design*. 3 Hr. PR: Admission to school health master's program. Course provides a practical application experience for students to design a health education course curriculum, demonstrate classroom teaching, and self-evaluate their own teaching.
642. *Grant Writing for Public Health Research*. 3 Hr. PR: CHPR 612. This course addresses various components of the grant writing process, including collaboration, funding sources, proposal preparation, and grants management for the health professional.
648. *Intervention Design*. 3 Hr. PR: CHPR 638. Students will apply information learned in CHPR 638 and other foundation courses in designing a health promotion intervention for a health agency or enterprise. Students will defend their intervention before their faculty committee.
650. *Practicum*. 1-12 Hr. PR: Consent. Students are assigned to a field placement based on prior health promotion work experience. Under the supervision of faculty, students assume major responsibility for a program with a community health promotion organization. (Grading will be S/U.)
655. *Intro to Health Promotion*. 3 Hr. The course provides an overview of the health promotion/health education profession. Course material will assist health education/health promotion professionals-in-training to identify and pursue career goals.
671. *Community Health*. 3 Hr. This course provides health educators with an introduction to community health focusing on organization, resources, programming, and special populations.
680. *School Health Concepts*. 3 Hr. Addresses content areas for health education, the National Health Education Standards, the CDC Adolescent Risk Factors, and Healthy People 2010 Objectives as applicable to: emotional health, injury prevention, disease and nutrition and physical activity

690. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of community health promotion. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

691 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

693. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

695. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised topics not available through regular course offerings.

697. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or dissertation. (Grading will be S/U.)

782. *Supervised Applied Health Education Project*. 1 Hr. PR: Advanced graduate standing or consent. Doctoral students only. Plan and conduct a health education intervention in other than a classroom setting, i.e., a defined community.

783. *Supervised Health Education Research Report*. 1 Hr. PR: Advanced graduate standing and consent. Doctoral students only. A written report of empirical research of either a survey or an experiment.

790. *Teaching Practicum*. 1-3 Hr. PR: Consent. Supervised practice in college teaching of health-related learning experiences. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

791 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.

792. *Directed Study*. 1-6 Hr. Directed study, reading, and/or research.

793. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

794. *Seminars*. 1-6 Hr. Seminars arranged for advanced graduate students.

795. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis (697), problem report (697), research paper or equivalent scholarly project (697), or a dissertation (797). (Grading will be S/U.)

798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in the department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

900. *Professional Development*. 1-6 Hr. Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g., education, community health, geology.) These continuing education courses are graded on a satisfactory or unsatisfactory grading scale and do not apply as graduate credit toward a degree program.

930. *Professional Development*. 1-6 Hr. Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g., education, community health, geology.) These tuition-waived continuing education courses are graded on a satisfactory or unsatisfactory grading scale and do not apply as graduate credit toward a degree program.

## **Community Medicine (CMED)**

612. *Community Medicine*. 3 Hr. PR: Consent. Medical students only. The role of the physician in the prevention of disease and in the examination of health status in a community, with reference to demographic, economic, sociologic, environmental, and occupational factors. The organization of public health and medical care.

691 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

695. *Independent Study*. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

697. *Research*. 1-15 Hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project.

698. *Thesis*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

701. *Law and the Workplace*. 1 Hr. PR: MD degree, graduate standing, or consent. Philosophy, content, and procedures of current judicial bodies relevant to the practice of medicine in the industrial society, developed through a series of lectures followed by extensive discussion involving students from different curricular backgrounds. (1 hr. sem.)

712. *Medical Aspects of Environmental Health*. 1 Hr. PR: MD degree or consent. A review of issues illustrating the responsibilities and professional interaction of physicians in identifying, managing, and preventing casualties from environmental causes in air, water, soil, food, pesticides, and related subjects. (1 hr. lec.)

722. *Epidemiology and Biostatistics*. 2 Hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomena as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.

750. *Statistics Biomedical Sciences*. 1 Hr. This introductory biostatistics course for biomedical graduate students covers variables and descriptive statistics as well as parametric and non-parametric statistics.

788. *Critical Review of Literature*. 1 Hr. PR: MD or Consent. A review of current literature in occupational and environmental medicine, focused on analysis of validity and procedures followed; scrutiny of research reports, their design, methodology, data handling, documentation, and discussion of the data base.

790. *Teaching Practicum*. 1-3 Hr. PR: Consent. Supervised practice in college teaching of anatomy. (Grading will be S/U.)

791 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

792. *Directed Study*. 1-6 Hr. PR: Consent. Directed study, reading, and/or research.

793. *Special Topics*. 1-6 Hr. PR: Consent. A study of contemporary topics selected from recent developments in the field.

794. *Seminar*. 1-6 Hr. PR: Consent. Seminars arranged for advanced graduate students.

795. *Independent Study*. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. 1 Hr. PR: Consent. A one-credit hour seminar is designed to assist students in identifying their career objectives and exploring opportunities to achieve their career objectives.

797. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project or a dissertation. (Grading will be S/U.)

798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. 1-6 Hr. PR: Consent. For graduate students not seeking course work but who wish to meet residence requirements, use University facilities, and participate in academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's Graduate Colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **Conjoined Basic Sciences (CCMD)**

712. *Epidemiology and Biostatistics*. 3 Hr. PR: Medical students or consent of instructor. An introduction to epidemiology and biostatistics including casual inference, study design, use of common statistical tests, and interpretation of epidemiology studies with attention to chance, bias, and confounding. (Grading will be S/U.)

713. *Health of the Public*. 2 Hr. PR: Medical Student or consent. An introduction to public health with an emphasis on West Virginia's. Topics include occupational and environmental health, preventive medicine, social and behavioral aspects of health, and health services administration and management.

721. *Physical Diagnosis/Clinical Integration 2*. 6 Hr. PR: Medical students only. This course will introduce clinical medicine topics, organized by organ system, as well as emphasize history and physical exam skills. Students will begin to use clinical reasoning techniques, integrating basic science and clinical knowledge. (Grading will be S/U.)

722. *Physical Diagnosis/Clinical Integration 2*. 4 Hr. PR: CCMD 721. Continuation of CCMD 721. Students will build on skills and techniques learned in CCMD 721.

725. *Health Care Ethics*. 2 Hr. For medical students only. Integrated approach to medical-ethical, legal, and spiritual aspects of health care. Includes lectures about basic principles and concepts, small-group discussion of cases, and large-group interactive case discussions.

730. *Human Function*. 16 Hr. PR: For medical students and selected graduate students with instructor consent. Integrated approach combining biochemistry, genetics and physiology of the human body. Includes molecular, subcellular, and cellular components of the body, organ systems and whole body functions. Application of basic sciences to human health and disease. (Lec. 14 hr., other 2 hr., contact 16 hr.)

740. *Behavioral Science and Psychopathology 1*. 5 Hr. This course will introduce students to the biological, psychological, social, and spiritual dimensions of health care will be explored in the context of health care decision making.

741. *Behavioral Science and Psychopathology*. 5 Hr. PR: CCMD 741. Continuation of CCMD 740. Students will build on skills and techniques learned in CCMD 740.

745. *Physical Diagnosis/Clinical Integration 1*. 7 Hr. This course will introduce the student to persons with health concerns. Students will begin development of skills of medical communication, data gathering, and physical examination techniques. (Lec. 5 hr., other 2 hr., contact 7 hr.)

746. *Physical Diagnosis/Clinical Integration 1*. 3 Hr. PR: CCMD 745. Continuation of CCMD 745. Students will build on skills and techniques learned in CCMD 745.

750. *Radiation Safety and Radionuclide Usage*. 1-2 Hr. PR: PHYS 101 and PHYS 102, CHEM 115 and CHEM 116, or Consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; NRC and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.

770. *Medical Genetics*. 2-4 Hr. PR: Second-year medical student standing; graduate student in genetics and developmental biology; others by consent. Introduction to clinical genetics including molecular, biochemical, and cytogenetic aspects of human biology. Application of genetic principles to human health and disease. (Also listed as GEN 570.)

775. *Neurobiology*. 6 Hr. PR: CCMD 730 and ANAT 703 or consent. Introduction to structure and function of the human nervous system with a focus on clinical application of basic science. Emphasis is on normal neurobiology (at cells/ systems levels) essential to understanding human manifestations of neural pathology.

776. *Step-1 Board Prep*. 2 Hr. Student prepares for USMLE Step 1, requirement for medical licensure, advancement to 3rd year, and graduation. Passing course requires USMLE Step 1 passing score. National Board of Medical Examiners requires students to be enrolled to take USMLE.

777. *Step-2 Board Prep*. 2 Hr. Student prepares for USMLE Step 3, requirement for medical licensure and graduation. Passing course requires USMLE Step 2 passing score. National Board of Medical Examiners requires to be enrolled to take USMLE.

778. *Professional Development*. 2 Hr. Medical students explore clinical and research applications in variety of disciplines to enhance knowledge and skills related to future medical career paths. Assessment based on satisfactory completion of project as determined by supervising faculty member.

788. *Selective Experiences in Medicine*. I, II, S. 6 Hr. PR: Satisfactory completion of the first three years of medical curriculum. The fourth year offers a wide range of opportunities. A one-month rotation in critical care, surgical subspecialty either a medicine, family medicine, or a pediatric subinternship and two months of a rural primary care rotation are all required in the fourth year. The student works with an adviser to select the remainder of the individual program. This program must also be approved by the associate dean in the Office of Student and Curricular Affairs. The year is composed of ten one-month blocks, four months of which must be spent in programs in West Virginia. Selections are available in all departments within the School of Medicine. A catalog is available that list the specific guidelines for the fourth year curriculum.

790. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of conjoined courses. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

791 A-Z. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

792. *Directed Study*. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

793 A-Z. *Special Topics*. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

794. *Seminar*. I, II, S. 1-6 Hr. Seminars arranged for advanced graduate students.

795. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. I, II, S. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

796. *Graduate Seminar*. I, II, S. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

798. *Dissertation*. I, II, S. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. I, II, S. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **Exercise Physiology (EXPH)**

101. *Introduction to Exercise Physiology*. 1 Hr. A broad and foundational look at the function and adaptation of the systems of the human body in response to exercise.

230. *Exercise in American Culture*. 3 Hr. Covers issues of exercise in America, specifically themes integral to American culture such as age, class, race, gender, and beauty.
240. *Medical Terminology*. 1 Hr. PR: Sophomore standing. The study of medical language with special emphasis given to terms used in the field of exercise physiology.
- 293 A-Z. *Special Topics*. I, II, S. 1-6 Hr. Investigation of topics not covered in regularly scheduled courses.
364. *Kinesiology*. I, II, 3 Hr. PR: Junior standing; consent. Anatomical, mechanical, and musculoskeletal study of the human body as the instrument for efficient performance of motor activities. (Laboratory work included.)
365. *Exercise Physiology 1*. I, II, S. 3 Hr. PR: Junior standing; consent. The study of the functioning of body systems during exercise and the acute and chronic adaptations that occur from exercise stress.
368. *Lab Techniques and Methods*. I, II, 3 Hr. PR: Junior standing; EXPH 364 and EXPH 365; consent. Techniques and methods for designing and conducting exercise programs for asymptomatic, healthy individuals.
369. *Strength/Conditioning Methods*. 4 Hr. PR: EXPH 364 and EXPH 365. Scientific foundations of strength and conditioning with skills and methods to apply that knowledge in clinical exercise training.
370. *Writing for Exercise Science*. 3 Hr. PR: (ENGL 101 and ENGL 102) or ENGL 103. Writing for medical scientific fields. Students will develop a book review, analyze discipline-specific texts, and write scientific literature reviews. Includes a review of style and language use.
450. *Theory of Aquatic Therapy*. 3 Hr. PR: Junior standing or consent. An introduction to aquatic therapy. It covers the historical perspective, biophysiological response to water immersion, and application of aquatic therapy to specific physical diagnoses.
451. *Application of Aquatic Therapy*. 3 Hr. PR: Junior standing and consent. Design and implementation of aquatic exercise prescriptions to meet rehabilitation goals. Aquatic therapy techniques will be demonstrated and practiced.
452. *Aquatic Therapy Facility Management*. 3 Hr. PR: Junior standing and EXPH 451 and consent. Facility design, water chemistry, water safety, and aquatic programming for special populations including rehabilitation, community re-entry, and wellness programs in a comprehensive continuum of care.
460. *Pathophysiology*. 3 Hr. PR: EXPH 365 and junior standing. CoReq: PHYS 241. The study of disease etiology and the physiological changes that occur from disease, with special emphasis given to the use of exercise in disease prevention and therapy.
470. *Research Methods*. 3 Hr. PR: Senior standing. CoReq: EXPH 496. The study of the scientific method and research design as it relates to the field of exercise physiology and preventive medicine.
475. *Industry Organization in Exercise Physiology*. 3 Hr. Prepares exercise physiology students to work in health care/fitness related fields and promotes knowledge on how to build a business plan for entrepreneurship.
490. *Teaching Practicum*. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.
491. *Professional Field Experience*. I, II, S. Variable credit 1-18 Hr. PR: Consent (May be repeated up to a maximum of 18 hours.) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Internship.)
- 493 A-Z. *Special Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
494. *Seminar*. I, II, S. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
495. *Independent Study*. I, II, S. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.
496. *Senior Thesis*. I, II, S. 1-3 Hr. PR: Consent.
497. *Research*. I, II, S. 1-6 Hr. Independent research projects.
498. *Honors*. I, II, S. 1-3 Hr. PR: Students in honors program and consent by the honors director. Independent reading, study or research.
567. *Exercise Physiology 2*. I, 3 Hr. PR: Consent. Thorough and workable knowledge of the functioning of body systems during exercise, the acute and chronic adaptations that occur, and the practical application of work physiology.
660. *Biomechanical Analysis of Sport and Physical Activity*. 3 Hr. PR: EXPH 364 and EXPH 365 or equivalent; and SS 615. Advanced principles of body mechanics and analysis of muscle and joint actions in coordinated movement and neuromuscular physiology.
668. *Diabetes and Exercise*. II, 3 Hr. PR: Graduate standing, consent. In-depth study of topics related to the comprehensive management of patients with diabetes mellitus, with special emphasis on the use of exercise in diabetes care.
670. *Lab Techniques and Methods 2*. I, S. 3 Hr. PR: Graduate standing, Consent. This course teaches the techniques and methods used to monitor physiologic systems in humans during rest and exercise. It includes methods used to assess the health status of individuals desirous of exercise testing or prescription.
671. *Stress Testing*. II, 3 Hr. PR: EXPH 670, consent. In-depth study of graded exercise testing in laboratory or field situations. The course includes protocols for athletes, asymptomatic individuals, and special populations.

672. *Professional Field Placement*. I, II, S. 1-18 Hr. PR: EXPH 370, and EXPH 371, Consent. Prearranged program to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development. (Internship).

673. *Exercise Prescription*. 3 Hr. This course will provide graduate students an understanding of the exercise prescription process and the exercise management of patients with chronic diseases.

691 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

693. *Special Topics*. I, II, S. 1-6 Hr. PR: Consent. A study of contemporary topics selected from recent developments in the field.

697. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or dissertation. (Grading will be S/U.)

786. *Musculoskeletal Biology*. 3 Hr. Introduction to current research approaches in musculoskeletal biology of exercise physiology. This course will stress critical thinking, and refine skills related to research design and evaluation of research methods used in exercise physiology.

790. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in teaching exercise physiology.

791 A-Z. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.

792 A-Z. *Directed Study*. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

794. *Seminar*. I, II, S. 1-6 Hr. Special seminars arranged for advanced graduate students.

795. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program. (Graded S/U.)

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. 1-6 Hr. PR: Consent. For graduate students not seeking course work but who wish to meet residence requirements, use University facilities, and participate in academic and cultural programs.

## **Family Medicine (FMED)**

731. *Clerkship*. 8 Hr. PR: Successful completion of first two years of medical school. An eight week rotation in the office setting; rotations of four weeks to clinics within the university system and four weeks to private practitioner offices throughout the state. Lecture, laboratory, conference, and patient care.

## **Gerontology (GERO)**

212. *Intro to Gerontology*. 3 Hr. Survey of biological, psychological and sociological issues and problems associated with human aging. Selected social policies impacting quality of life for the elderly are presented.

293 A-Z. *Special Topics*. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

310. *The Aging Women*. 3 Hr. Does gender make a difference in the aging process? This course examines the female experience of growing older. Lecture, discussion, review of literature, with focus on selected works of literature and the creative arts.

312. *Issues in Gerontology*. 3 Hr. This course introduces students to a broad spectrum of topics and issues related to aging by focusing on current issues and controversies associated with a rapidly aging world and the implications that follow.

410. *Rural Gerontology*. 3 Hr. Overview of health, social, and policy issues that impact the quality of life of older adults living in rural environments, contrasted with those in urban areas. (Equiv. GERO 681.)

412. *Public Policy of Aging*. 3 Hr. Policy analysis of major public programs for senior citizens—Older American Act, Medicare-Medicaid and Social Security. Discussion of future of these programs and societal response. Emphasis on senior programs in West Virginia. (Equivalent to GERO 512)

418. *Aging, Women and Culture*. 3 Hr. This course will use a multidisciplinary approach to examine the impact of gender, race/ethnicity, and culture on aging, the aging population and individual experiences of aging.

491. *Professional Field Experience*. I, II, S. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours) Prearranged experimental learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

493 A-Z. *Special Topics*. I, II. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
512. *Public Policy of Aging*. 3 Hr. Policy analysis of public programs for senior citizens—Older Americans Act, Medicare-Medicaid and Social Security. Discussion of future of these programs and societal response. Emphasis on senior programs in West Virginia. (Equivalent to GERO 412)
628. *Aging Women and Cultural Issues*. 3 Hr. This course will use a multi-disciplinary approach to examine the impact of gender, race/ethnicity, and culture on aging, and the aging population.
629. *Survey Methods*. 3 Hr. Students are provided the scientific knowledge and practical skills used in survey research. Focus is on question construction and development, questionnaire design, sampling and survey modes, interviewing techniques and survey data analysis.
645. *Fundamentals of Gerontology*. 3 Hr. This course introduces students to a broad spectrum of topics and issues related to aging by drawing upon several core disciplines and their contributions to the corpus of gerontological knowledge and research.
681. *Rural Gerontology*. 3 Hr. Overview of health, social, and policy issues that impact the quality of life of older adults living in rural environments, contrasted with those in urban areas.
- 691 A-Z. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
- 693 A-Z. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.
695. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
697. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

## Medical Technology (METC)

100. *Medical Technology*. 1 Hr. Introduction to the profession of medical technology and the clinical laboratory specialties. (Pass/Fail grading only.)
101. *Medical Technology 2*. II. 1 Hr. Continuation of MTEC 100.
200. *Medical Technology Terminology*. 1 Hr. General medical and basic medical technology terminology.
201. *Basic Medical Technology*. 1 Hr. Basic medical technology laboratory techniques and professional issues related to medical technology. (Course will be graded pass/fail only.)
302. *Laboratory Math, Quality Control, Computers*. 2 Hr. Lectures and practice sessions in laboratory mathematics, techniques, and calculations in quality control, quality assurance. Computer acquisition and evaluation.
310. *Clinical Laboratory Mycology*. 1 Hr. How to isolate and identify the more commonly encountered pathogenic fungi as well as those fungi frequently seen as laboratory contaminants. The course will include basic taxonomy, isolation procedures, and identifying characteristics.
329. *Basic Clinical Chemistry*. 1 Hr. PR: Students in medical technology program. Basic clinical chemistry procedures and theory. (1 hr. lec.)
381. *Research and Educational Methodology*. 2 Hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.
391. *Research, Educational Methodology*. 2 Hr. Lectures in ethics, techniques of research, and techniques of educational methodology for medical technology students.
400. *Orientation*. No credit. (For senior students). Principles and practices of medical technology in relation to the hospital and clinics. (pass/fail grading only).
401. *Phlebotomy*. 1 Hr. PR: Enrollment in medical technology program, MTEC 300 and MTEC 301. Clinical laboratory practice, including venipuncture, finger sticks, and heel sticks; isolation, universal precaution and other safety techniques are included.
402. *Rural Health Practicum*. 1 Hr. PR: Senior year MT program. Enrichment rotations in rural settings in West Virginia. (Grading will be pass/fail.)
403. *Community Service Practicum*. 1 Hr. PR: Senior year MT program. Students will spend time performing community service projects. (Grading will be Pass/fail.)
404. *Forensic Quality Assurance*. 1 Hr. PR: Student currently enrolled in FIDP. Quality assurance in a laboratory setting to include quality control. Quality assurance, and management techniques necessary to have an accredited laboratory.
420. *Immunohematology and Blood Banking*. 3 Hr. Lectures on immunohematology and blood banking theory and practice.
421. *Immunohematology and Blood Banking Laboratory*. Arranged. 3 Hr. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.

430. *Clinical Chemistry*. 3 Hr. Lectures in clinical chemistry analysis, clinical significance, and implications of diagnosis with laboratory practice in methods of measurement.
431. *Clinical Chemistry Laboratory*. 3 Hr. PR: MTEC 329 and MTEC 420. Application of clinical chemistry principles to laboratory medicine, to include routine and specialized procedures, specimen and result evaluation, and problem-solving.
440. *Clinical Hematology*. 3 Hr. Lectures in hematologic theory and practice, including coagulation and body fluids laboratory.
441. *Clinical Hematology Laboratory*. 3 Hr. PR: MTEC 440. Application of hematological principles to laboratory medicine, including coagulation, urinalysis, and body fluids. Emphasis on routine and specialized procedures, evaluation, and problem solving.
450. *Clinical Microbiology*. 3 Hr. Presentation and discussion of methodologies employed in the processing of clinical microbiology specimens, isolation, and identification of clinically significant microorganisms, and determination of antimicrobial susceptibilities with laboratory.
451. *Clinical Microbiology Laboratory*. 3 Hr. PR: MTEC 450. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms, processing of specimens and antibiograms.
460. *Clinical Laboratory Instrumentation*. 2 Hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.
465. *Clinical Laboratory Management*. 2 Hr. Laboratory organization and principles of laboratory management.
466. *Laboratory Management Practicum*. 1 Hr. PR: MTEC 465. Problem based learning and clinical laboratory management rotation. Application of management learned in MTEC 465. (Course will be graded pass/fail.)
470. *Clinical Microscopy*. 1 Hr. PR: Senior standing in medical technology or consent. The analysis of body fluids (urine, fluids, etc.) for abnormalities.
475. *Medical Relevance*. 2 Hr. Case studies of pathologic entities encountered in the clinical laboratory and a review of clinical laboratory science. Students will complete and give an oral presentation of the capstone experience and pass a comprehensive examination.
480. *Clinical Immunology*. 2 Hr. Open only to MTEC students. Lectures in principles of immunological and serological procedures, immunological diseases, and significance of laboratory methods for diagnosis.
481. *Clinical Immunology Laboratory*. 1 Hr. PR: Senior year MT program. Clinical laboratory practice in immunological procedures. Emphasis on basic serological techniques, protein analysis, molecular methods, and tissue typing.
490. *Teaching Practicum*. 1-3 Hr. PR: Consent. Teaching practice as a tutor or assistant.
491. *Professional Field Experience*. 1-18 Hr. PR: Consent (may be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.
- 493 A-Z. *Special Topics*. 1-6 Hr.
494. *Seminar*. 1-3 Hr. PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.
495. *Independent Study*. 1-6 Hr.
496. *Senior Thesis*. 1-3 Hr. PR: Consent.
498. *Honors*. 1-3 Hr. PR: Students in honors program and consent by the honors director. Independent reading, study, or research.
600. *Seminar*. 1 Hr. Seminars include topics in laboratory management and education in medical technology, and timely topics. Minimum of three semester hours to include all three topics is required of all graduate students in the medical technology program.
691. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses.
697. *Research*. 1-15 Hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project.

## **Medicine (MED)**

731. *Clinical Clerkship in Medicine*. 8 Hr. (Third year.) Cr. Required of third year medical students. The individual student is assigned responsibility for specific patients from the inpatient and outpatient services at West Virginia University Health Sciences Center or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or outpatient clinics. The student attends such conferences, as directed. Clerkship in medicine occupies 8 weeks. (Grading will be S/U.)

791. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

## **Microbiology, Immunology, and Cell Biology (MICB)**

126. *Microbiology II*. (For students in nursing and dental hygiene programs.); All students must have consent of instructor. I. 3 Hr. PR: CHEM 11, and CHEM 12 or equiv.

190. *Teaching Practicum*. 1-3 Hr.

191. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

194. *Professional Field Experience*. 1-18 Hr.

195. *Seminar*. 1-3 Hr.

196. *Thesis*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

197. *Directed Study*. 1-6 Hr. Directed study, reading, and/or research.

200. *Medical Microbiology*. 3 Hr. PR: CHEM 111 and CHEM 112.

220. *Pathogenic Microbiology*. (For pharmacy students.) 4 Hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.

223. *Microbiology*. (For medical technology students; other students with consent.) II. 5 Hr. PR or Conc.: Biochemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.

224. *Parasitology*. (For medical technology students; other students with consent.) II. 4 Hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology and laboratory diagnosis.

301. *Immunity, Infection and Disease*. 12 Hr. PR: For second-year medical students. An integrated approach to the study of infectious disease in humans. With focus on innate and acquired immunity, mechanisms of pathogenesis of infectious microorganisms, transmission, and treatment.

302. *Microbiology*. (For dental students only.) I. 5 Hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.

310. *Structure and Activities of Microorganisms*. II. 2-7 Hr. PR or Conc.; biochemistry, consent. Molecular biology of *e. coli* and other selected organisms.

311. *Prin. Infection and Resist*. 1-5 Hr.

317. *Special Problems in Microbiology*. I, II, S. 1-7 Hr. Graduate immunology and virology. I. 3 hr. PR: Consent. Parasitology laboratory. II. 1 Hr. PR: Consent. B. *Graduate Pathogenic Microbiology*. II. 3 Hr. PR: Consent. C. *Special Problems in Post Graduate Dental Microbiology*. II. 4 Hr. PR: Consent.

317A. *Special Problems in Microbiology*. I, II, S. 1-6 Hr. PR: Consent. Parasitology laboratory. II. 1 Hr. PR: Consent.

317B. *Special Problems in Microbiology*. I, II, S. 1-6 Hr. per semester. YA. Graduate Immunology and Virology. I. 3 Hr. PR: Consent. Parasitology laboratory. II. 1 Hr. PR: Consent. B. Graduate Pathogenic Microbiology. II. 3 Hr. PR: Consent. C. Special Problems in Post Graduate Dental Microbiology. II. 4 Hr. PR: Consent.

317 C-Z. *Special Problems in Microbiology*. I, II, S. 1-6 Hr. per semester. YA. Graduate Immunology and Virology. I. 3 Hr. PR: Consent. Parasitology laboratory. II. 1 Hr. PR: Consent. B. Graduate Pathogenic Microbiology. II. 3 Hr. PR: Consent. C. Special Problems in Post Graduate Dental Microbiology. II. 4 Hr. PR: Consent.

323. *Medical Parasitology*. 5 Hr. (For medical technology students; other students with consent.) Biochemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.

325. *Medical Mycology*. 4 Hr.

327. *Parasitology*. 2 Hr. (For medical technology students; other students with consent.) Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.

391 A-Z. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

397. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to a thesis, problem report, research paper, or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

399. *Special Topics in Microbiology, Cell Biology*. II. 3 Hr. PR: Biochemistry; 1 yr. undergraduate biology; consent. Lectures in selected areas of cell biology.

490. *Teaching Practicum*. I, II. 1-3 Hr. PR: Consent. Supervised practice in college teaching of microbiology. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

491 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

492. *Directed Study*. I, II, S. 1-6 hr. Directed study, readings, and/or research.
- 493 A-Z. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.
- 494 A-Z. *Seminar*. 1-6 Hr. PR: Consent. Seminars arranged for advanced graduate students.
495. *Graduate Seminar*. I, II, S. 1 hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.
496. *Independent Study*. I, II. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
497. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)
498. *Thesis*. 2-4 hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)
499. *Graduate Colloquium*. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)
511. *Pathogenic Microbiology*. 4 Hr. PR or CONC: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
592. *Directed Study*. 1-6 Hr. Directed study, reading, and/or research.
593. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.
- 691 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
697. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)
698. *Thesis*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)
701. *Immunity, Infection and Disease*. 12 Hr. PR: For Second-year medical students. An integrated approach to the study of infectious disease in humans, with focus on innate and acquired immunity, mechanisms of pathogenesis of infectious microorganisms, transmission, and treatment.
702. *Microbiology*. I. 5 Hr. (For dental students only.) PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
711. *Principles of Pathogenic Bacteriology*. 1-5 Hr.
714. *Structure and Activities of Selected Microorganisms*. 2-7 Hr. PR or CONC: Biochemistry and consent. Molecular biology of E-coli and other selected organisms.
- 784 A-Z. *Special Problems in Microbiology*. 1-6 Hr. PR: Consent.
790. *Teaching Practicum*. 1-3 Hr. PR: Consent. Supervised practice in college teaching of microbiology. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)
- 791 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
792. *Directed Study*. I, II, S. 1-6 Hr. Directed study, reading, and/or research.
793. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.
794. *Seminar*. 1-6 Hr. PR: Consent. Seminars arranged for advanced graduate students.
795. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
796. *Graduate Seminar*. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.
797. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)
798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **Neurobiology and Anatomy (NBAN)**

101. *Principles of Human Anatomy*. 3 Hr. PR: BIOL 2 or equiv.; consent of instructor or chairperson. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development. (Section 01 for pharmacy students; 02 for nursing and dental hygiene students.)

102. *Gross Anatomy*. II. 3 Hr. PR: NBAN 101 and/or consent of instructor or chairperson. Functional gross anatomy of the back, extremities, head, and neck. (For physical therapy students.)

109. *Oral Histology*. II. 2 Hr. PR: NBAN 101. Histological structure and embryological development of the teeth, tissues and organs of the oral cavity (electronic delivery).

152. *Introduction Physical Anthropology*. 3 Hr.

190. *Teaching Practicum*. 1-3 Hr.

191. *Special Topics*. 1-3 Hr.

194. *Professional Field Experience*. 1-18 Hr.

195. *Seminar*. 1-3 Hr.

196. *Senior Thesis*. 1-3 Hr.

197. *Honors*. 1-3 Hr.

205. *Introduction to Human Anatomy*. 3 Hr. Introductory human anatomy course that uses a combined regional and systemic approach to examine the relationships and organization of the major structures within the thorax, abdomen, head/neck, and back/limbs regions of the body.

206. *Human Anatomy Laboratory*. 1-3 Hr. PR: NBAN 205 or NBAN 301 or consent. Introductory human anatomy laboratory using a combined regional and systemic approach to examine the relationships and organization of the major structures with the thorax, abdomen, head/neck, and back/limb regions of the body.

293. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

301. *Principles of Human Anatomy*. 3 Hr. PR: Admission to WVU's dental hygiene, nursing, or pharmacy program or consent. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

302. *Gross Anatomy*. 3 Hr. PR: NBAN 301 and Consent. Functional gross anatomy of the back, extremities, head, and neck. (For physical therapy students.)

303. *Human Structure*. 1-17 Hr. PR: For medical and selected graduate students in the medical basic sciences with instructor consent. Integrated approach combining human gross anatomy, microanatomy and embryology. Includes human cadaver dissection, microscopic anatomy of cells, tissues and organs with application to human health and disease.

305. *Microanatomy*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 Hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.

308. *Neuroanatomy*. (For students in physical therapy and a limited number of regular full-time graduate students in other health sciences.) II. 2 Hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system.

309. *Oral Histology*. 2 Hr. PR: NBAN 301. Histological structure and embryological development of the teeth, tissues and organs of the oral cavity. (Electronic delivery)

312. *Special Topics in Anatomy*. I, II. 2-4 Hr. per sem. PR: Consent of chairperson or instructor. Different topics of current interest in anatomy that are not included in the regular graduate courses.

314. *Applied Anatomy*. I, II. 2-6 Hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.

316. *Craniofacial Growth and Maturation*. I. 1 Hr. PR: Consent of instructor. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

318. *Oral Histology and Embryology*. (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 2 Hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.

319. *Advanced Head and Neck Anatomy*. 1 Hr. PR: Dental, medical, or graduate student in basic sciences, or consent. Head and neck craniofacial anatomy as it applies to specialties in dental or medical practice.

320. *Electron Microscopy*. II. 4 Hr. PR: Consent. (For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
324. *Human Gross Anatomy*. (For dental students and a limited number of regular, full-time graduate students in medical basic sciences.) 7 Hr. PR: Dental student standing or consent of chairperson. Human anatomy including cadaver dissection for dental students. (4 hr. lec., 3 hr. lab.)
391. *Advanced Topics*. 1-6 Hr.
397. *Research*. I, II, S. PR: Consent of instructor or chairperson. (May be repeated as needed with permission). 1-15 hr.
401. *Advanced Gross Anatomy*. I, II. 2-6 Hr. per sem. PR: NBAN 303 or 324 and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.
402. *Advanced Developmental Anatomy*. II. 2-6 Hr. per sem. PR: NBAN 303 or 324 and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.
403. *Seminar*. I, II. 1-6 Hr. (1 hr. per sem.)(Course may be repeated.) PR: Consent of Graduate Committee. Special topics of historical interest.
405. *Experimental Embryology*. II. (Alternate years.) 3 Hr. PR: Embryology and cellular physiology and biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.
406. *Advanced Neuroanatomy*. I. 2-4 Hr. per sem. (Course may be repeated.) PR: CCMD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.
408. *Histochemistry*. II. (odd numbered years.) 3 Hr. PR: NBAN 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques.
451. *Advanced Microanatomy and Organology*. I, II, or S. 2-4 Hr. PR: NBAN 305 or 309, or BIOL 263 and consent of instructor or chairperson. An extension of the major topics included in NBAN 305 or 309. Special emphasis on recent contributions.
490. Teaching Practicum. I and II. 1-3 Hr. PR: Consent of chairperson. Supervised practice in college teaching of anatomy. (Graded S/U.)
491. *Advanced Topics*. I, II. 1-6 Hr. PR: Consent of chair person.
492. *Directed Study*. I, II, S. 1-6 hr. Directed study, readings, and research.
493. *Special Topics*. I, II, S. 1-6 hr. A study of contemporary topics selected from recent developments in the field.
495. *Independent Study*. I, II, S. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.
496. *Graduate Seminar*. 1 hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program. (Graded S/U.)
497. *Research*. I, II, S. 1-15 Hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Studies Committee.)
498. *Thesis*. 2-4 Hr.
499. *Graduate Colloquium*. 1-6 Hr.
701. *Advanced Gross Anatomy*. 2-6 Hr. PR: NBAN 703 or NBAN 724 and Consent. Morphological and functional analysis of a selected region, with dissection.
702. *Advanced Developmental Anatomy*. 2-6 Hr. PR: NBAN 703 or NBAN 724 and consent. Detailed developmental anatomy of the fetal period and infancy. With dissection and analysis of variations and malformations.
703. *Human Structure*. 1-17 Hr. PR: Admission to medical school or medical basic science graduate program or consent. Integrated approach combining human gross anatomy, microanatomy and embryology. Includes human cadaver dissection, microscopic anatomy of cells, tissues and organs with application to human health and disease.
704. *Experimental Embryology*. 3 Hr. PR: Embryology and cellular physiology and biochemistry and consent. Development, differentiation, and regeneration.
705. *Microanatomy*. 5 Hr. PR: Admission to medical basic science graduate program or consent. Study of cells, tissues, and organs.
706. *Advanced Neuroanatomy*. 2-4 Hr. PR: CCMD 775 and consent. (Course may be repeated.) Detailed study of selected areas of the nervous system.
707. *Histochemistry*. 3 Hr. PR: Histology, biochemistry, and consent. Histochemical theory and techniques.
708. *Neuroanatomy*. 2 Hr. PR: Admission to physical therapy or other Health Sciences graduate programs or consent. Gross and microscopic structure of the central nervous system.
712. *Special Topics in Anatomy*. 2-4 Hr. PR: Consent. Different topics of current interest in anatomy that are not included in the regular graduate courses.

714. *Applied Anatomy*. 2-6 Hr. PR: Consent. Detailed study of anatomy adapted to the needs of the individual student.
716. *Craniofacial Growth and Maturation*. 1 Hr. PR: Consent. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.
718. *Dental Histology*. 6 Hr. PR: Dental student standing or consent of instructor or chairperson. Cells, tissues, organs. Structure, function, and development of oral tissue tissues.
719. *Advanced Head and Neck Anatomy*. 1 Hr. PR: Admission to medical, dental or basic science graduate programs, or consent. Head and neck craniofacial anatomy as it applies to specialties in dental or medical practice.
720. *Electron Microscopy*. 4 Hr. PR: Consent. (For graduate students and medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
724. *Human Gross Anatomy*. 7 Hr. PR: Admission to dental school or medical basic science graduate program or consent. Human anatomy including cadaver dissection for dental students. (4 hr. lec., 3 hr. lab.)
751. *Advanced Microanatomy and Organology*. 2-4 Hr. PR: NBAN 705 or NBAN 709 and Consent. An extension of the major topics included in NBAN 705 or 709. Special emphasis on recent contributions.
790. *Teaching Practicum*. 1-3 Hr. PR: Consent. Supervised practice in college teaching of anatomy. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)
791. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
792. *Directed Study*. 1-6 Hr. PR: Consent. Directed study, readings, and/or research.
793. *Special Topics*. 1-6 Hr. PR: Consent. A study of contemporary topics selected from recent developments in the field.
795. *Independent Study*. 1-6 Hr. PR: Consent. Faculty supervised study of topics not available through regular course offerings.
796. *Graduate Seminar*. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program. (Grading will be S/U.)
797. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)
798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)
799. *Graduate Colloquium*. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **Neurology (NEUR)**

741. *Clinical Clerkship in Neurology*. (Third year.) 2 Hr. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients and patients seen at the physician office center. All evaluations are performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.
791. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
797. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

## **Obstetrics and Gynecology (OBST)**

741. *Clinical Clerkship in Obstetrics and Gynecology*. 8 Hr. (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students participate in the care of all inpatients and attend all departmental clinics.
791. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
797. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

## **Occupational Therapy (OTH)**

300. *Essentials of Clinical Anatomy*. 4 Hr. PR: OTH student status. A study of human gross anatomy, micro anatomy and embryology with major emphasis on the musculoskeletal system.

301. *Professional Foundations*. 3 Hr. PR: OTH student status. Introduction to fundamentals of professional behavior for the occupational therapist. Includes units on history, paradigms, communication, documentation, ethics, interdisciplinary teamwork, licensure requirements, and medical terminology.
302. *Survey of Clinical Problem-Solving and Scientific Inquiry*. 2 Hr. PR: OTH student status. An introduction to analysis of clinical and research problems, including strategies for problem analysis and outcome.
303. *Functional Movement Across the Lifespan*. 2 Hr. PR: OTH student status. Including acquisition of developmental patterns, motor control, motor skill acquisition. This course also provides an overview of the effects of normative processes of aging on neuromotor patterns in occupational performance.
304. *Occupational Science*. 4 Hr. PR: OTH student status. An introduction to signs and symptoms and medical management of orthopedic and physical dysfunction/disabilities encountered by the occupational therapist. Emphasis is upon the effects of physical dysfunction/disabilities on human occupation.
306. *Kinesiologic Foundations*. 4 Hr. PR: OTH student status. Functional anatomical correlations and human movement. Statics, biomechanics, dynamics and functional movement analysis.
307. *Neurobiologic Foundations*. 4 Hr. PR: OTH student status. Basic and clinical applications of neuroanatomy and neurology. Includes lectures on neurophysiological basis of physical and occupational therapy practice.
308. *Evaluation Procedures*. 3 Hr. PR: OTH student status. Theory and practice in evaluation procedures used by therapists. Includes Manual Muscle Test, isokinetic muscle testing, and assessment of components of movement, posture, balance, and hand function.
321. *Development Life Tasks*. 3 Hr. PR: OTH student status. Life-span human development across cognitive, psychosocial and neuromotor domains with particular emphasis on applications to physical or occupational therapy interventions. Includes focus on cultural influences in health and illness.
360. *Research Methods in Occupational Therapy*. 3 Hr. PR: OTH student status. An introduction to principles of research methodology and data analysis in the realm of occupational science/occupational therapy. Includes a focus on scientific methodology, research design, data collection, data analysis, and ethical considerations.
384. *Level I Fieldwork 1*. 2 Hr. CPR training and clinical instruction in the occupational therapy process. OT documentation, basic measurement skills, experiences with people with disabilities, and participation in professional activities. (Grading will be P/F.)
385. *Level I Fieldwork 2*. 2 Hr. PR: OTH student status. Students will be provided with fieldwork experience in the occupational therapy process, and ADL preceptual, and mental health assessments. Students will be placed in a variety of settings where mental health issues may be observed. (Grading will be P/F.)
386. *Level I Fieldwork 3*. 2 Hr. PR: OTH student status. Students will be provided with fieldwork experiences in occupational therapy processes. (Grading will be P/F.)
401. *Occupational Science 2*. 4 Hr. PR: OTH student status. An introduction to signs and symptoms and management and effect of neurological dysfunction and disabilities on human occupation encountered by the occupational therapist. Includes theories of treatment and basic treatment technologies.
402. *Clinical Decision Making 1*. 2 Hr. PR: OTH student status. Continuation of preparation for critical thinking and decision making in the field using appropriate information and technology in a case study format. An emphasis on autonomous practice and referral decisions.
406. *Cardio-Pulmonary Rehabilitation*. 3 Hr. PR: OTH student status. Lectures on cardiovascular and pulmonary conditions including medical interventions. Discipline-specific laboratory sessions include stress testing, physical capacity assessment, ecological analysis, use of monitoring equipment, and evaluation and planning rehabilitation protocols.
408. *Tests and Measures in Occupational Therapy I*. 3 Hr. PR: OTH student status. Presentation of tests and measures used by occupational therapists in the assessment of various conditions. Emphasis will be placed on the clinical and functional evaluation of clients within the domain of occupational therapy practice.
414. *Developmental Disabilities*. 2 Hr. PR: OTH student status. Overview of occupational therapy approaches toward developmental disabilities, including focus on etiology, pathology, and progression of conditions specific to various developmental disabilities.
416. *Professional Decision-Making*. 2 Hr. PR: OTH student status. Students are provided with opportunities to develop critical thinking, clinical reasoning, and decision-making skills in occupational therapy. Emphasis is on autonomous practice and referral decisions.
417. *Occupational Therapy in Geriatrics*. 3 Hr. PR: OTH student status. Overview of normative aging using an occupational therapy frame of reference. Common problems of seniors are discussed.
419. *Professional Values*. 3 Hr. PR: OTH student status. An introduction to ethics and how it specifically applies to rural health and life in West Virginia. Students will be given an opportunity to explore their own conceptions of ethics in health care.
430. *Occupational Therapy in Mental Health*. 3 Hr. PR: OTH student status. Clinical and functional science lectures pertaining to OT practice in mental health environments. Course includes introduction to occupational therapy clinical and functional assessment, and management protocols.
432. *Occupational Therapy Interventions in Mental Health II*. 4 Hr. PR: OTH student status. Interventions commonly used by occupational therapists in the field of mental health. Emphasis on group processes, life skills, reintegration strategies.

435. *Therapeutic Activity*. 3 Hr. PR: OTH student status. Students will develop skills in performance component analysis, performance context analysis, and occupational performance analysis.

480. *Current Topics in Occupational Therapy*. 1-3 Hr. PR: OTH student status. (Not to exceed 18 hr.) A seminar course designed to provide a forum for discussing the frontiers of the occupational therapy profession. Topics may include: research in progress, new developments, and salient professional issues.

493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

495. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

497. *Research*. I, II, S. 1-6 Hr. Independent research projects.

500. *Health Care Issues in Occupational Therapy*. 3 Hr. PR: OTH student status. Occupational therapy practice models in diverse health care delivery systems are discussed, including hospital based, home health, outpatient/private practice, long term care settings, and public schools. (2 hr. lec, 2 hr. other.)

501. *Management for OT Practice*. 4 Hr. PR: OTH student status. This course reviews the structure and recent changes in the United States health care system with attention to those aspects of managed care of importance to the entry level occupational therapist. (3 hr. lec., 2 hr. lab.)

503. *Occupational Therapy in Pediatrics*. 3 Hr. PR: OTH student status. This course reviews the medical and developmental conditions of pediatric populations commonly encountered by occupational therapists. Emphasis is placed on OT assessment and interventions. (2 hr. lec., 2 hr. lab.)

505. *Prosthetics and Orthodontics*. 3 Hr. PR: OTH student status. Principles of practice applications of upper and lower limb prosthetics and orthodontics commonly encountered and/or manufactured by the occupational therapist. (1 hr. lec., 4 hr. lab.)

520. *Occupational Therapy in the Work Environment*. 3 Hr. PR: OTH student status. A holistic approach to evaluation and intervention commonly practiced by occupational therapists in work settings. This course will focus on task analysis in various work settings using an occupational performance frame of reference. (1 hr. lec., 4 hr. lab.)

540. *Level 2 Fieldwork 1*. 1-6 Hr. PR: OTH student status. Students are placed full-time for six-weeks in a facility under the supervision of a licensed occupational therapist. Students are required to register for OTH 540 during Summer 1 and again during Summer 2 for a full 12-week six credit fieldwork experience. (Course will be graded S/U.)

550. *Education in Occupational Therapy*. 3 Hr. PR: OTH student status. Principles of community and adult education are provided. Students are taught to prepare instructional materials, workshops/seminars, and how to assess instructional outcomes. Use of various media are used and reviewed.

551. *Occupational Therapy in Prevention and Wellness*. 3 Hr. PR: OTH student status. Students are taught occupational therapy principles and strategies to develop community health promotion and wellness programs in a variety of settings.

593. *Special Topics*. 1-6 Hr. A Study of contemporary topics selected from recent developments in the field.

640. *Level II Fieldwork 2*. 6 Hr. PR: OTH student status. Students are placed in one 12-week, or two six-week placement(s) depending on the facility and the needs of the student. Students will be placed in facilities where individualized instruction can occur. (Grading will be S/U.)

697. *Research*. 1-5 Hr. PR: OTH student status. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

## **Pathology (PATH)**

300. *Introduction to Pathology*. 3 Hr. A study of principles and processes of pathology from cellular to system, including etiology, pathogenesis, and clinical features of representative or commonly occurring disorders and diseases.

301. *Basic Pathology*. I. 2 Hr. PR: Enrollment in dental hygiene or physical therapy, or consent. A study of the basic pathologic processes in man.

302. *Oral Pathology*. II. 3 Hr. PR: PATH 301, dental hygiene major, or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.

303. *Clinical Lab Applications*. 2 Hr. Lectures and laboratory experience on laboratory safety, measurement, use and maintenance of laboratory equipment, preparation, and storage of reagents and solutions, and basic laboratory techniques.

320. *Basic Clinical Biochemistry*. 3 Hr. Introduction to basic biochemistry and human metabolism of amino acids, proteins, enzymes, carbohydrates, liquids, and nucleotides. Molecular biology and applications to the clinical laboratory are included.

340. *Introduction to Hematology*. 3 Hr. Lectures and laboratory sessions to cover structure, morphology, and function of the cells of the blood, bone marrow and body fluids, with an overview of hematologic abnormalities.

380. *Introduction to Immunology*. 1 Hr. Lectures in basic immunology, with emphasis on its structure and function. Antigens, antibodies, and complement will be discussed and related to immune disorders and simple immunological tests.

520. *Seminars in Molecular Diagnostics*. 1 Hr. This course provides an overview of molecular diagnostic theory and procedures.

601. *Special Studies in Oral Pathology*. (For dental and graduate students, residents, and interns.) I. 1-3 Hr. PR: PATH

738 and PATH 753. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.

603. *Haman Anatomy for Pathologist's Assistant*. 5 Hr. This course will cover gross and microscopic human anatomy including embryology and microanatomy.

610. *Pathology Assistant Education Methods*. 1 Hr. Techniques in educational methodology for pathologist's assistants.

620. *Clinical Pathology Seminar*. 1 Hr. this course presents a review of clinical pathology, including pertinent forensic toxicology and diagnostic radiology.

625. *Anatomical Pathology Techniques*. 4 Hr. This course will cover standard techniques in surgical and autopsy dissection, preparation of reports, basic forensic, investigation techniques, basic histological and immunological staining techniques.

627. *Pathology Assistant Practicum 1*. 9 Hr. Rotations in surgical and autopsy pathology to include forensics and pediatrics.

628. *Pathology Assistant Practicum 2*. 9 Hr. Rotations in surgical and autopsy pathology to include forensics and pediatrics.

629. *Pathologists' Assistant Practicum 3*. 7 Hr. PR: PATH 628. This course is a continuation of PATH 628 and advanced procedures and application of advanced techniques in surgical and autopsy pathology.

630. *Pathology Review 1*. 2 Hr. This course includes an intense review of clinical and anatomical pathology theory and techniques, and presentation of scientific journal articles and clinical cases.

631. *Pathology Review 2*. 2 Hr. PR: PATH 630. This course is a continuation of PATH 630 and includes an intense review of clinical and anatomical pathology theory and techniques, and presentation of journal articles and clinical cases.

728. *General Pathology*. II. 5 Hr. PR: Consent. A study of the pathophysiological changes associated with human disease and a study of disease of major organ systems.

738. *Oral Pathology 1*. 3 Hr.

751. *Mechanisms of Human Disease*. 12 Hr. (For medical and selected graduate students in the medical sciences, with instructor consent.) Integrated study of disease using structure-function relationships. Includes participation in pathology departmental activities (postmortem exams and other diagnostic procedures), student presentations of clinical materials, case study discussions, and lectures.

753. *Oral Pathology 2*. (For dental students.) I. 2 Hr. PR: PATH 738 or Consent. Continuation of PATH 738.

755. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 Hr. PR: PATH 738 and PATH 753 or consent. Histopathologic correlation with clinical case histories and presenting signs and symptoms presented in a case-based learning format.

782. *Advanced Oral Histopathology*. (For dental and graduate students, residents and interns.) I, II. 1-2 Hr. PR: PATH 738 and PATH 753 or consent. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.

790. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: (PATH 301 and PATH 302) or (PATH 728 and PATH 738 and PATH 753.) Supervised practice in college teaching of pathology. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

791. *Advanced Study*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

792. *Directed Study*. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

793. *Special Topics*. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

794. *Seminar*. I, II, S. 1-6 Hr. Seminars arranged for advanced graduate students.

795. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. I, II, S. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. I, II, S. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **Pediatrics (PEDI)**

731. *Clinical Clerkship in Pediatrics*. (Third year.) 8 Hr. CR. Required of third-year medical students. See description of clinical clerkship under MED 731. Clerkship in pediatrics occupies six weeks.

791. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

## **Pharmacology and Toxicology (PCOL)**

260. *Pharmacology*. II. 3 Hr. Interactions of clinically useful therapeutic agents with the mammalian systems.

562. *Occupational Toxicology*. 3 Hr. PR: Consent. General principles of toxicology with special emphasis on occupational health. Classes of chemicals which pose problems in the workplace will be emphasized.

743. *Pharmacology 1*. 3 Hr. PR: Second year professional standing or consent. Cellular and biochemical effects that explain the therapeutic or adverse effects of drugs. These will be integrated into considerations of drug effects, toxicities and interactions between drugs.

744. *Pharmacology 2*. 3 Hr. PR: Second year professional standing or consent. Continuation of *Pharmacology 1*. Cellular and biochemical effects that explain the therapeutic or adverse effects of drugs. These will be integrated into considerations of drug effects, toxicities and interactions between drugs.

760. *Pharmacology and Therapeutics*. (For dental and graduate students.) I. 5 Hr. PR: Second year dental students or graduate students with consent. Lecture and demonstrations relevant to explaining how drugs function in the human body. Team teaching by basic science faculty and clinical dental faculty.

761. *Medical Pharmacology*. 7 Hr. (For medical and selected graduate students in the medical sciences with instructor's consent.) PR: Basic principles of drug action, mechanisms of therapeutic effects and undesirable effects. Emphasis on the classes of drugs currently used in medical practice.

762. *Literature Survey*. 1 Hr. per semester. PR: Graduate status in pharmacology and toxicology or consent. Current literature pertinent to pharmacology and toxicology including journals of allied biological sciences.

764. *Advanced Pharmacology*. 1-6 Hr. PR: PCOL 761 or consent. Advanced lectures and discussion of general principles of pharmacology and toxicology and advanced lectures in biochemical, endocrine, pulmonary, and cardiovascular pharmacology. (1-6 hr. lec.) (Alt. yrs.)

767. *Advanced Neuropharmacology*. 1-6 Hr. PR: PCOL 761 or consent. Advanced lectures and discussion on drug receptor theory, neurophysiological aspects of pharmacology, supersensitivity, and the actions of drugs on the central and peripheral nervous system. (1-6 hr. lec.) (Alt. yrs.)

770. *Summer Medical Pharmacology*. 7 Hr. Online course covering basic principles of drug action, mechanisms of therapeutic effects and undesirable effects. Emphasis on the classes of drugs currently used in medical practice.

790. *Teaching Practicum*. 1-3 Hr. PR: Consent. Supervised practice in college teaching of pharmacology. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience.

791 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

792. *Directed Study*. 1-6 Hr. Directed study, reading, and/or research.

793. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

795. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

797. *Research*. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **Physical Therapy (PT)**

Course information for the doctor of physical therapy degree can be found on the following Web site: <http://www.hsc.wvu.edu/som/pt>.

## Physiology (PSIO)

241. *Elementary Physiology*. II. 4 Hr. PR: College biology and chemistry, or consent. (For undergraduate students in para-medical sciences and nursing students on regional campuses.) Systematic presentation of basic concepts.

441. *Mechanisms of Body Function*. I. 4 Hr. PR: College chemistry, biology, physics, and algebra or graduate status and Consent. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relation to normal physiology. (4 hr. lec.)

495. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

741. *Physiological Methods 1*. II. 1-5 Hr. PR: Consent. Research techniques and strategies for physiology.

742. *Physiological Methods 2*. II. 1-4 Hr. PR: Consent. Research techniques and strategies for physiology.

743. *Fundamentals of Physiology*. 4 Hr. PR: College physics, algebra, chemistry, and consent. (For dental students and HSC graduate students.) Analysis of facts and concepts relating to cellular processes, organ systems, and their control.

744. *Graduate Seminar*. I, II. 1-3 Hr. PR: Graduate standing and consent. (Grading will be S/U.)

746. *Neurophysiology*. II. 1-4 Hr. PR: (MATH 126 or MATH 341) and (PHYS 101 and PHYS 102) or consent. (For graduate students in the Health Sciences Center's basic sciences departments and a limited number of regular full-time graduate students.) Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. (1-3 lec., 1 conf.)

750. *Graduate Physiology/Pharmacology 1*. 5 Hr. (For graduate students in HSC graduate programs and a limited number of other full-time graduate students.) PR: MATH 155 and PHYS 101 and PHYS 102 and CHEM 233 and CHEM 234 and BIOL 101 and BIOL 102 and consent of course coordinator. Survey at a quantitative level of basic concepts and experimental approaches to cellular, endocrine, and neural mechanisms controlling physiological processes and the pharmacological manipulation of these processes.

751. *Graduate Physiology/Pharmacology 2*. 5 Hr. PR: PSIO 750 and/or consent of course coordinator. Survey at a quantitative level of basic concepts and experimental approaches to the physiology and pharmacology of cardiovascular, renal, pulmonary, and gastrointestinal function, including the mechanisms controlling these systems and their pharmacological manipulation.

790. *Teaching Practicum*. I, II, S. 1-3 Hr. PR: Consent. Supervised practice in college teaching of physiology. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

791. *Advanced Topics*. I, II, S. 1-15 Hr. PR: Consent. Lecture-conference in: cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. (3 lec., 3 conf.)

792. *Directed Study*. I, II, S. 1-6 Hr. Directed study, reading, and/or research.

793. *Special Topics*. I, II, S. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

794. *Seminar*. 1-6 Hr. Seminars arranged for advanced graduate students.

795. *Independent Study*. I, II, S. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar*. I, II, S. 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

798. *Dissertation*. 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium*. I, II. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## Public Health (PUBH)

501. *Advanced Professional Writing*. 3 Hr. A review of English syntax and usage in professional writing; constructing and developing ideas; research and writing based on careful reading of author's instructions, using the *APA Style Manual*, using library resources, and academic honesty.

536. *Worksite Wellness*. 3 Hr. Overviews the field of health promotion in a worksite setting, offering a comprehensive introduction. Persons with interest in exploring the possibility of employment in health promotion in a worksite setting will find this course helpful.

580. *Prevention through Resilience*. 3 Hr. The principles of resilience, resiliency theories and current research, resilience and stress and the mind-body implications, recognizing and eliciting resilience and resilient outlooks and behaviors in ourselves and clients, professional and public health implication.

581. *Rural Gerontology*. 3 Hr. This course is designed to provide students with a broad understanding of current research information regarding health and social aspects of rural elderly in the United States. The course consists of lecture and class discussions.
586. *Public Mental Health*. 3 Hr. This course will teach the students the principles, concepts, and methods of general epidemiology, and how to apply them to the study of the distribution and causes of mental disorders in populations.
595. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
601. *Introduction to Community/Public Health*. 3 Hr. An introduction to the field of community/public health with an emphasis on the relationship and role of public health to other disciplines in resolving public health problems.
605. *International Public Health*. 4 Hr. This course identifies and explores major global issues in public health including infectious diseases, malnutrition, famine, and water sanitation. Approaches for devising solutions to these problems in developing countries will be explored.
611. *Applied Biostatistics for Health*. 3 Hr. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. For students in the MPH and CHPR programs.
615. *Nutrition/Chronic Disease Prevention*. 3 Hr. This course addresses the role of nutrition and food components in primary, secondary, and tertiary disease prevention. Through cooperative learning, students will practice critical thinking skills in the study of nutrition in chronic disease prevention.
617. *Ethical/Legal Issues in Public Health*. 3 Hr. This course provides an opportunity for sustained reflection on the many ethical and legal issues involved in public health. Ethical and legal frameworks will be identified and applied to the analysis of critical issues.
618. *Health Services/Outcomes Research Methods*. 3 Hr. This course covers the key issues facing the health care system today and teaches the basic skills needed to evaluate health care programs addressing these issues.
619. *Issues in Men's Health*. 3 Hr. Men are markedly at risk for specific health problems and complications. This course will provide skills for students to research and develop educational programs to improve health and well-being of men.
620. *Women and Violence*. 3 Hr. this course examines the issue of violence in the lives across the lifespan and from a socio-cultural perspective. Implications for health concerns and educational interventions will be addressed.
621. *Issues in Women's Health*. 3 Hr. This course examines a broad array of health issues and causes of illness that shape and define women's access and understanding of health concerns across the lifespan, which includes examination of cultural diversity.
623. *Public Health Disaster Response*. 3 Hr. This course addresses the basics of how public health practitioners respond to disasters, develop response protocols and reform as skillful leaders in the 21st century.
625. *Biology Society and Human Health*. 3 Hr. This course will cover fundamental biological knowledge about disease developments in individuals and populations. The interaction of social and physical environments with physiological, psychological, and emotional characteristics is emphasized.
628. *Aging Women and Culture Issues*. 3 Hr. This course will use a multi-disciplinary approach to examine the impact of gender, race/ethnicity, and culture on aging and the aging population.
629. *Survey Methods*. 3 Hr. This course presents scientific knowledge and practical skills used in survey research. Focus is on question construction and development, questionnaire design, sampling and survey modes, interviewing techniques, and survey data analysis.
630. *Policy and The Health System*. 3 Hr. Overview and analysis of the development of health-related public policy in the United States, with particular emphasis on aging populations, policy development, process, and implementation on the state and national levels.
645. *Fundamentals of Gerontology*. 3 Hr. This course introduces students to a broad spectrum of topics and issues related to aging by drawing upon several core disciplines and their contributions to the corpus of gerontological knowledge and research.
646. *Public Policy of Aging*. 3 Hr. Analysis of major policy and public programs for older adults, including Medicaid, Medicare, Social Security and the Older Americans Act. A major emphasis is placed on programs in West Virginia.
650. *Environmental Health*. 3 Hr. A review of issues illustrating the responsibilities and roles of the public health work force in identifying, managing, and preventing casualties from environmental causes in air, water, soil, food, pesticides, and related subjects. Problems are illustrated using policy dilemmas facing West Virginia.
660. *Public Health Epidemiology*. 3 Hr. Examines mortality and morbidity trends, disease and injury models, data sources classification, measures of frequency and association, research design, casual assessment, data interpretation, and screening from an epidemiological perspective.
661. *Advanced Epidemiology*. 3 Hr. PR: PUBH 611 and PUBH 660 CON. Causality and threats to validity in epidemiologic research are presented, focusing on assessment and control of bias, including selection bias, information bias and confounding. Assessment and control of effect modification (interaction) are included.
665. *Work Site Evaluation*. 2 Hr. Students are introduced to health and safety hazards associated with industrial operations through in-plan inspections, interaction with plant medicinal and safety staff and in class discussions.

678. *Adolescent Health*. 3 Hr. An introduction to adolescent health, medicine, and risk behavior intervention. Topics include epidemiology of risk and health outcomes, theories of risk and methods for intervention, assessment and research on risk behavior change in adolescence.

679. *Public Health Seminar*. 1 Hr. Students are given opportunities to synthesize information about latest developments within the field of public health through dialogue.

680. *Health-Based Leadership*. 3 Hr. PR: CHPR 635 or equivalent. Gain personal understanding, knowledge, and growth in the human dimensions of leadership: developing rapport, trust, teamwork, and mentoring; managing tone and facilitating "problem" situations; evaluating systems and leading system change; articulating vision, mission and strategy.

687. MPH Practicum Proposal. 2 Hr. PR: PUBH 611 and PUBH 630 and PUBH 650 and PUBH 660 and CHPR 612 and (PUBH 691E or CHPR 634). A structured, faculty-supported process for developing a proposal for the 300-hour practice-and-theory-based practicum.

688. *MPH Practicum Report*. 3 Hr. PR: PUBH 611 and PUBH 630 and PUBH 650 and PUBH 660 and PUBH 687 and PUBH 689 and (PUBH 691E or CHPR 634). Provides students with the opportunity to report the results of their practicum projects to others via a professional paper and presentation.

689. *Practicum*. 3 Hr. PR: PUBH 611 and PUBH 630 and PUBH 650 and PUBH 660 and PUBH 687 and CHPR 612 and (PUBH 691E or CHPR 634). Implementation of the practicum proposal; a planned, supervised, and evaluated public health-oriented experience encompassing 300 hours of activity reflecting public health practice and theory. Students are required to take 3 credit hours of the practicum but may spread credits among semesters.

691 A-Z. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

693 A-Z. *Special Topics*. 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

695. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

701. *Qualitative Research Methods*. 3 Hr. Application of qualitative research methods to public health issues. Students will learn about theory of public health qualities research methodology, hypothesis generation, data collection, preparation, analysis, reporting and conclusion.

702. *Public Health Program Evaluation*. 3 Hr. Application of scientific public health program evaluation methods. Students will learn about theory and methods of program evaluation, identification of stakeholders, data collection, preparation, analysis, reporting and conclusion.

703. *Social and Behavioral Measurement*. 3 Hr. Theory and development of effective tools for measuring social and behavioral public health phenomena. Students will learn how to find, construct and analyze effective social and behavioral measurement instruments.

704. *Mortality and Survival*. 3 Hr. PR: PUBH 660 or equivalent, and basic proficiency in Excel. Life table and other population-based techniques and approaches to studying international and sociodemographic patterns and differentials in mortality, morbidity, and disability.

705. *Injury Control Res. Methods*. 3 Hr. PR: PUBH 660 or equivalent and PUBH 611 or equivalent. Evidence-based approach to increasing the knowledge and methodological skills necessary for basic injury (unintentional and intentional) control research.

706. *Current Research Issues*. 1 Hr. The purpose of this course is to utilize research-based discussions to stimulate a unique information gathering environment of current research and investigation.

707. *Applied Multivariable Stats*. 3 Hr. Basic theory and application of survival analysis, multivariate analysis of variance (MANOVA) and exploratory factor analysis.

766. *Medical Toxicology*. 2 Hr. This course introduces healthcare providers to the clinical aspects of toxicology, including the evaluation and treatment of individuals and populations with potential toxic exposures.

790. *Teaching Practicum*. 1-3 Hr. PR: Consent. Supervised practice in college teaching of public health. Note: this course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

794. *Seminar*. 1-6 Hr. Seminars arranged for advanced graduate students.

## **Surgery (SURG)**

701. *Introduction Laboratory Animals Experiments*. 3 hr.

741. *Clinical Clerkship in Surgery*. (Third year.) CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of house staff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.

791. *Advanced Topics*. I, II, S. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

797. *Research*. I, II, S. 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

799. *Graduate Colloquium*. I, II, S. 1-6 Hr. PR: Consent. For graduate students not seeking course work credit but who wish to meet residence requirements, use the University's facilities and participate in its academic and cultural programs. Note: Graduate students not actively involved in course work or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **School of Nursing**

### **Nursing (NSG)**

110. *Health and Wellness*. 3 Hr. Health promotion and risk reduction; data collection; cultural diversity; values that contribute to health; interpersonal communication in promoting professional relationships.

221. *Concepts: Nursing 1*. 3 Hr. PR: NSG 110 and COREQ: NSG 225, Focuses on human responses that promote health throughout the life span and individual health assessment.

223. *Seminar 1: Professional Role Development*. 1 Hr. PR: NSG 110, sophomore standing or consent. Characteristics of self in role transition; values and beliefs; personal and professional behaviors in nursing care.

225. *Nursing Interventions 1*. 3 Hr. COREQ: NSG 221; PR: Sophomore standing or consent. Critical thinking in application of the nursing process in individuals with altered mobility, comfort, or potential infection; health protection, promotion and maintenance interventions.

241. *Concepts: Nursing 2*. 2 Hr. PR: NSG 221 and NSG 225 and COREQ: NSG 245. Focuses on enhancing student understanding of human responses to minor deviations in health throughout the lifespan; emphasizes professional nursing role in health restoration and critical thinking; examines family health assessment.

245. *Nursing Interventions 2*. 4 Hr. PR: NSG 221 and NSG 225. COREQ: NSG 241. Critical thinking in the application of the nursing process to individuals with minor deviations in health protection, health restoration, and health promotion/maintenance. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

251. *Basic Concepts of Nursing*. 3 Hr. PR: BS/BA/BSN students only. An emphasis on the professional nursing role in health promotion and restoration, which enhances the student's understanding of human responses to health promotion activities and minor health deviations throughout the lifespan.

255. *Basic Nursing Interventions*. 3 Hr. PR: BS/BA/BSN students only. Clinical practicum with focus on critical thinking in application of the nursing process to individuals and families with minor deviations in health. Emphasis is on health protections, restoration, promotion, and maintenance.

322. *Concepts: Pediatric Health*. 2 Hr. PR: NSG 361 or Consent. Co-Req: NSG 325. The focus is on the human response to physiological system dysfunction. The emphasis is on the professional nursing role in complex physiological health restoration for children.

325. *Interventions: Pediatric*. 2 Hr. PR: NSG 361 or consent; Co-Req: NSG 332. Nursing interventions specific to human responses to pediatric problems. Emphasis on advanced independent and collaborative nursing activities.

333. *Ethics in Nursing*. 3 Hr. PR: Junior standing or consent. Focus on demonstrating caring behaviors through managing individual/family/group systems. Focus is on ethical decision-making in health care situations. The course emphasizes improvement of writing skills in conjunction with strengthening critical thinking.

334. *Concepts: Adult Health*. 3 Hr. PR: NSG 361 or Consent. Co-Req: NSG 335. The focus is on the human response to physiological system dysfunction. The emphasis is on the professional nursing role in complex physiological health restoration for adults.

335. *Interventions: Medical Surgical*. 2 Hr. PR: NSG 361 or consent; Co-Req: NSG 332. Nursing interventions specific to human responses to multiple physiological system dysfunction. Emphasis on advanced independent and collaborative nursing activities.

340. *Professional Role Transition*. 3 Hr. PR: RN Licensure. The course focuses on concepts and principles of professional nursing inherent in the curriculum of the School of Nursing. Emphasis is placed on how these concepts and principles affect nursing role.

345. *Interventions: Psychosocial*. 2 Hr. PR: NSG 361 or consent; Co-Req: NSG 356. Nursing interventions specific to human response to multiple psychosocial system dysfunction. Emphasis on advanced independent and collaborative nursing activities.

351. *Concepts: Maternal Child*. 2 Hr. PR: NSG 361 or consent and COREQ: NSG 355. Human response to adaptations of child-bearing family. Emphasis on professional role in caring for child-bearing families.

355. *Interventions: Maternal Child*. 2 Hr. PR: NSG 361 or consent; Co-Req: NSG 351. Nursing interventions specific to human responses related to individuals and families experiencing child bearing adaptations. Emphasis on advanced independent and collaborative nursing activities.

356. *Concepts: Psychosocial*. 3 Hr. PR: PSYC 241. COREQ: NSG 351 and NSG 355. Normal psychosocial functions change as a result of altered health; integration of developmental changes and preventive aspects of health.

361. *Health Assessment*. 3 Hr. PR: NSG 225 or consent. Comprehensive, in-depth assessment of the client's health status, health patterns, physical examination and health history. Interviewing techniques including taped interactions and accurate recording of data for clients across the life span.

371. *Basic Parish Nurse Education*. 3 Hr. Explore the nurse's role in managing care within faith communities. Focus is on dimensions of nurse's role: spiritual caregiver, health promoter, counselor, advocate, educator, care coordinator, resource agent and manager of developing practice.
376. *Clinical Nursing Pharmacology*. 3 Hr. PR: Junior standing; Co-Req: NSG 332. Principle of pharmacology emphasizing on nursing role in accurate drug administration and patient assessment. Pharmacological management is analyzed with pathophysiology. Particular emphasis is on patient/family teaching of pharmacological goals in order to maximize health potential.
400. *Spirituality and Health*. 3 Hr. In this course, students will examine the mind/body/spirit connection that occurs in the process of healing and wellness. Theories and practices of relationships between mind/body/spirit will be examined as they impact health/wellness of patients.
421. *Concepts: Critical Care*. 3 Hr. PR: Senior standing in NSG or consent. COREQ: NSG 425. Emphasis on professional nursing role in supporting individual/family/group responses to acute life threatening situations involving vulnerable populations; focus is on nursing role in providing care to unstable, individuals/families/groups.
423. *Leadership in Nursing*. 2 Hr. PR: Senior status or consent. Professional role in creating and managing the health care milieu. Focus is on the nurse teacher/manager roles and interventions in support of the client/family experiencing acute or long term problems.
425. *Interventions: Leadership*. 6 Hr. PR: Senior standing in nursing or consent. COREQ: NSG 421. Professional nursing role in supporting human responses to acute, life-threatening situations involving identified vulnerable populations; focus is on therapeutic nursing interventions specific to aid human responses of individuals with physiologic instability and their families.
433. *Seminar 8: Professional Role Synthesis*. 3 Hr. PR: NSG 343. Emphasis is on implementation of the professional nursing role within a changing health care system. Focuses on analysis of societal, institutional and economic factors that affect the delivery of health care.
434. *Evidence-Based Practice*. 4 Hr. PR: NSG 476; Co-Req: NSG 433. Focus is on evidence based practice in nursing, through analysis of clinical questions, appraisal of evidence for clinical decision making strategies to apply evidence, and exploring creation of a culture for evidence-based practice.
441. *Concepts: Community*. 3 Hr. PR: Senior standing in nursing or consent. COREQ: NSG 445. Community health nursing processes with emphasis on the professional nursing role in the assessment of community health needs and identification of health action potential.
442. *Review Clinical Problems*. 2 Hr. PR: Senior status. Professional nursing role in dealing with advanced clinical problems in health promotion and disease prevention in vulnerable population groups. Emphasis is on interdisciplinary and multidisciplinary approaches to problem solving in health care.
443. *Seminar 6: Professional Role Development*. 2 Hr. Emphasis on professional nursing role in health promotion/risk reduction in groups/communities of vulnerable populations. Focuses on multidisciplinary team approaches to problem solving in community health.
445. *Interventions: Community*. 5 Hr. PR: Senior standing in nursing or consent. COREQ: NSG 441 and NSG 455. Emphasis on the collaborative role of the nurse in assisting communities to develop and implement plans for health promotion/risk reduction across the life span. Focus on vulnerable populations.
455. *Interventions: Capstone*. 1 Hr. PR: Senior standing in nursing or consent and PR or CONC: NSG 441 and NSG 476. Co-Req: NSG 445. Synthesis of theoretical and practical knowledge acquired in undergraduate nursing career. Emphasis on critical thinking, ethical decision-making and civic responsibility in the design and implementation of a service-learning project addressing a community health need.
476. *Introduction to Nursing Research*. 3 Hr. PR: STAT 211 or consent. Theory, concepts and methods of the research process intended to provide a basic understanding that is necessary for intelligent consumership of research findings.
481. *Cardiac Nursing*. 2 Hr. Web-based. Mastery format. NSG juniors and seniors. Introduction to the interpretation and treatment of cardiac arrhythmias.
482. *Palliative Care Basics*. 2 Hr. PR: Junior rank in nursing, or one year of clinical course work for other health science majors. Discussion surrounding end-of-life care of the patient and family in a variety of settings. Exploring these topics will enable the health care professional to provide quality patient care and advocacy for end-of-life care.
483. *Holistic and Integrative Nursing*. 2 Hr. PR: NSG 241 and NSG 245. Theory and principles of holistic nursing and an introduction to alternative/complementary health therapies. Experiential learning and application of content to clinical setting will be explored.
486. *NCLEX Review*. 1 Hr. PR: Senior status. Focuses on achievement of professional success by preparing for RN licensure. Preparation for NCLEX will be the focus of this by enhancing NCLEX testing skills.
- 493 A-Z. *Special Topics*. 1-6 Hr. PR: Consent. Investigation of topics not covered in regularly scheduled courses.
495. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
496. *Senior Thesis*. 1-3 Hr. PR: Consent.
497. *Research*. 1-6 Hr. Independent research projects.
498. *Honors*. I, II. 1-3 Hr. PR: Students in the honors program and consent by the honors director. Independent reading, study or research.

593 A-Z. *Special Topics*. I, II, S. Variable 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

622. *Theory and Disciplined Reasoning*. 3 Hr. Introduction to the theoretical foundations of the discipline of nursing as a basis for applying critical thinking skills to the development of a conceptual framework for nursing.

623. *Concepts of Advanced Nursing*. 2 Hr. PR or Conc: NSG 622. Exploration, analysis and evaluation of concepts, theories and research guiding the advanced practice of nursing. Learning activities emphasize advanced practice role.

624. *Advanced Pathophysiology*. 4 Hr. Theoretical basis of pathophysiological changes in acute and chronic illness confronted in primary care across lifespan. This course lays the foundation for subsequent courses in diagnosis, management, and therapeutic interventions.

626. *Lifespan Health Promotion*. 2 Hr. An in-depth study of theoretical foundations, epidemiological principles, and advance practice strategies for the promotion of health and prevention of disease across the life-span.

627. *Research and Systematic Analysis*. 5 Hr. PR: NSG 622. An overview of research methods, evidence and epidemiological and statistical measures used in advanced practice nursing.

628. *Health Policy, Finance, Ethics*. 3 Hr. PR: NSG 622. Study of how health policy, the organization and financing of health care, and of how ethical principles shape professional practice.

629. *Advanced Practice/Families*. 2 Hr. PR: NSG 622 and NSG 623 and NSG 626 and NSG 627. Exploration and analysis of family theories, assessments, and interventions applicable to the advanced practice of nursing.

631. *Advanced Pharmacotherapeutics*. 3 Hr. PR: NSG 624. Examination of the relationship between pharmacological principles and the selection of pharmacological agents in lifespan. This course lays the foundation of subsequent courses in diagnosis, management, and therapeutic interventions.

632. *Advanced Assessment*. 2 Hr. PR: NSG 622 and NSG 623 and NSG 624. Preparation for the conduct of advance health assessment of patients. Diagnostic reasoning is emphasized as the student collects and analyzes data obtained from the patient history, physical examination, and diagnostic procedures.

633. *Primary Care: Rural Families 1*. 3 Hr. PR: NSG 622 and NSG 623 and NSG 624 and NSG 626, and NSG 631 and NSG 632. Introduction to the domains and competencies of the advanced practice nursing role that are fundamental to primary health care of the rural family unit.

634. *Primary Care: Rural Families 2*. 4 Hr. PR: NSG 633. Further development of the domains and competencies of the advanced practice nursing role introduced in NSG 633 that are fundamental to primary health care of the rural family unit.

635. *Rural Family Health Practicum 1*. 5 Hr. PR or Conc: NSG 634. Supervised practicum designed to apply theory- and evidence-based advanced practice nursing. Students develop the advanced practice role as they manage health care and participate in service learning.

636. *Rural Family Health Practicum 2*. 5 Hr. PR: NSG 635. Supervised practicum that builds upon NSG 635 and focuses on the application of theory- and evidence-based advanced nursing practice. With supervision, students manage health care and participate on interdisciplinary terms.

642. *Advanced Pediatric Assessment*. 2 Hr. PR: NSG 622 and NSG 623 and NSG 624 and PR or CONC: NSG 643. Preparation for the conduct of advanced health assessment of pediatric patients. Diagnostic reasoning is emphasized as the student collects and analyzes data obtained from the patient history physical examination, and diagnostic procedures.

643. *Pediatric Primary Care 1*. 3 Hr. PR: NSG 622 and NSG 623, and NSG 624 and NSG 631 and PR or CONC: NSG 642. Knowledge and skills basic to the assessment of health status, diagnosis, treatment, and evaluation of children in the primary care setting.

644. *Pediatric Primary Care 2*. 4 Hr. PR: NSG 643. Further acquisition of knowledge and skills central to the assessment of health status, diagnosis, treatment and evaluation of children in the primary care setting.

645. *Pediatric Practicum 1*. 5 Hr. PR or CONC: NSG 644. Supervised practicum designed to facilitate the student's competency in the delivery of primary health care to children.

646. *Pediatric Practicum 2*. 5 Hr. PR: NSG 645. Supervised practicum designed to advance the student's competency in the delivery of primary health care to children.

654. *Neonatal Pathophysiology*. 4 Hr. An introduction to the scientific foundations underlying processes contributing to health/illness states in neonates. Principles from genetics, embryology, and developmental physiology lay the foundation for subsequent courses in assessment, diagnosis and management.

655. *Neonatal health Promotion*. 2 Hr. PR: NSG 622. Review of practices and services that contribute to healthy outcomes for sick and well neonates with focus on health promotion, disease prevention and maintenance of function in the context of critical care and primary care.

660. *Women's Reproductive Health*. 2 Hr. PR: Graduate status or permission. This course focuses on fertility control, reproductive health, menopause, and health promotion activities for women.

663. *Neonatal Assessment/Care 1*. 5 Hr. PR: NSG 622, NSG 623 and NSG 654. COREQ: NSG 655. Preparation for conducting advanced assessment of neonates/young infants. Diagnostic reasoning is emphasized through collecting and analyzing data obtained from patient history, physical examination, and diagnostic procedures.

664. *Neonatal Care 2*. 4 Hr. PR: NSG 663 and NSG 631. This course focuses on the management of common problems and conditions in neonates.

665. *Neonatal Practicum 1*. 5 Hr. PR: NSG 631. COREQ: 664. This supervised practicum is designed to facilitate the student's competency in the delivery of care to infant populations.
666. *Neonatal Practicum 2*. 5 Hr. PR: NSG 665. This supervised practicum is designed to facilitate the student's competency in the delivery of care to infant populations.
670. *Curriculum in Nursing*. 3 Hr. A review of contemporary theory-based determinants of curriculum development in nursing, including analysis and evaluation of curricula for nursing education.
671. *Clinical Practicum: Educators*. 2 Hr. PR: NSG 635. Implementation of theory-based advanced nursing practice in an area of student's clinical interest/expertise. Student develops the advanced practice role with a select population of clients and families.
672. *Education Practicum*. 5 Hr. PR: NSG 625. Specialty practicum 1 in area of interest. Supervised practice in the application of theories and methods related to nursing education.
674. *Teaching in Nursing*. 3 Hr. PR: NSG 670. A general methods course involving the principles of instruction in didactic and clinical nursing education including analysis of course planning, teaching methods, and evaluation of student outcomes.
685. *Clinical Scholarship*. 1 Hr. Co-Req: NSG 635 (For FNP Track) or NSG 645 (For PNP Track). Knowledge dissemination within the advanced practice role using disciplined reasoning and systematic inquiry to examine and incorporate evidence-based strategies in the caring/healing process.
- 691 A-Z. *Advanced Topics*. 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
695. *Independent Study*. 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
697. *Research*. 1-3 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper, or equivalent scholarly project, or a dissertation guided by a student-graduate faculty contact based on the course objectives and culminating in a written product. (Grading will be S/U.)
715. *Scientific Underpinnings*. 3 Hr. Provides an understanding of the scientific underpinnings of the application of theory to health care at the highest level of advanced nursing practice.
716. *Analytical Methods*. 4 Hr. PR: NSG 715. Prepares the DNP student to translate research into practice, evaluate practice guidelines to improve health care practices and outcomes, and to participate in collaborative research.
717. *Organization and Leadership*. 3 Hr. Provides a foundation for developing organizational and systems leadership skills critical to clinical care and health outcomes. Knowledge will help students to promote patient safety and excellence in health care organizations.
718. *Population Health*. 3 Hr. PR: NSG 716. Provides a foundation for analysis of clinical prevention and population health programs for individuals, aggregates, and populations.
719. *Health Care Policy*. 3 Hr. Provides a foundation for influencing, developing, implementing, and evaluating health care policies and legislation pertinent to issues in health care such as ethics, safety, costs, access, and quality.
726. *Research Methods 1*. 3 Hr. Advanced qualitative and quantitative research methods relevant to conducting research in nursing are studied, focusing on the study of phenomena that support clinical practice. Interrelationships among questions, theoretical framework, and design are emphasized.
727. *Contemporary Nursing Science*. 3 Hr. PR: 728. In-depth study of the theoretical, empirical, and methodological dimensions of foundational nursing science in the conceptual areas of empowerment, significant life transitions, and health system outcomes.
728. *Theoretical Basis of Nursing*. 3 Hr. PR: NSG 722. This course builds on philosophical basis of nursing. Discovery and verification of scientific knowledge are addressed by focusing on theory development. Methodologies include concept analysis and evaluation of middle-range theories of nursing and related sciences.
729. *Research Methods 2*. 3 Hr. PR: NSG 726 and PR or CONC: STAT 512. This course continues the study of the quantitative and qualitative research process extending from methodology to analysis and interpretation. It includes sampling theory, power, measurement, data collection procedures, and advanced analysis procedures.
734. *Use of Data*. 3 Hr. PR: NSG 726 and NSG 729. This course focuses on use of the following data bases: clinical, financial, health services, nursing, local, state, and national. The uses of existing data in clinical and policy decisions and in research will be explored.
735. *Principles: Nursing Education*. 3 Hr. PR: EDP 700. This course examines the research base of educational strategies in nursing education in classroom and clinical settings. The course also examines external determinants on nursing curriculum, accreditation issues, and evaluation of nursing programs.
737. *Leadership*. 3 Hr. PR: NSG 734. Through exploration of contemporary leadership theory and application to self, an authentic personal leadership style will be developed to enable the student to enact a leadership role in health care and/or education.
741. *Clinical Focus*. 2 Hr. Provides for the development of knowledge and skills relative to the state of the science in a particular area of clinical practice.
742. *Clinical Application*. 2-8 Hr. PR: NSG 741. Provides for the mastery of clinical skills relative to the state of the science in a particular area of clinical practice.

761. *Clinical Project 1.* 1 Hr. PR: NSG 715 and NSG 716. Identifies a practice problem and connects the problem to existing knowledge and science.

762. *Clinical Project 2.* 1 Hr. PR: NSG 761 and NSG 717 and NSG 718. Students design an initiative to address the practice problem identified in NSG 761 using the appropriate research methods and a variety of scientific principles.

763. *Capstone 1.* 3 Hr. PR: NSG 762. Develops leadership skills to create change relative to the practice problem as designed in NSG 762.

764. *Capstone 2.* 3 Hr. PR: NSG 763. Evaluates the change implemented in NSG 763 and analyzes the relationship of the findings to practice and policy.

781. *Research Mentorship 1.* 1 Hr. PR: NSG 729. In this guided practicum, the student's research skills are developed and cultivated through participation in the mentorship process with an experienced researcher (the chairperson or his/her designee).

782. *Research Mentorship 2.* 1 Hr. PR: NSG 781. This is the second guided practicum in which the student participates in the mentorship process for the purpose of continued development of the student's research skills.

783. *Dissertation Seminar 1.* 2 Hr. PR: NSG 729. This seminar provides an opportunity for continued knowledge synthesis related to the selected topic of research. Students will participate in proposal presentation and critique. The expectation is a National Research Service Award Predoctoral Fellowship Application.

784. *Dissertation Seminar 2.* 2 Hr. PR: NSG 783. This seminar provides an opportunity for refinement of the proposal developed in NSG 783. Student critique of presented proposals, as well as feedback of faculty, is expected to result in the dissertation proposal.

791 A-Z. *Advanced Topics.* 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

792. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.

793. *Special Topics.* 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

794. *Seminar.* 1-6 Hr. Seminars arranged for advanced graduate students.

795. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.

796. *Graduate Seminar.* 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.

797. *Research.* 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper, or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

798. *Dissertation.* 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)

799. *Graduate Colloquium.* 1-6 Hr. PR: Consent. For graduate students not seeking coursework credit but who wish to meet residence requirements, use the University's facilities, and participate in its academic and cultural programs. Note: Graduate students not actively involved in coursework or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

## **Pharmacy (PHAR)**

449. *Drugs and Medicines. I.* 3 Hr. (Not intended for pharmacy students.) PR: General biology or consent. A course intended to introduce a variety of university students to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.

497. *Research.* 1-6 hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation.

498. *Honors.* 1-3 Hr. PR: Students in honors program and consent by the honors director. Independent reading, study or research.

691 A-Z. *Advanced Topics.* 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

693 A-Z. *Special Topics.* 1-6 Hr. A study of contemporary topics selected from recent developments in the field.

694 A-Z. *Seminar.* 1-6 Hr. Seminars arranged for advanced graduate students. (Grading will be S/U.)

696 A-Z. *Graduate Seminar.* 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program. (Grading will be S/U.)

697. *Research.* 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

700. *Pharmacy as a Profession.* 1 Hr. PR: First professional year standing or consent. Introduces students to the concept of professionalism, the scope of pharmacy practice opportunities, the health care system as it relates to pharmacy, and other contemporary issues in pharmacy practice. (Grading will be S/U.)

701. *Pharmaceutical Care Lab 1*. 2 Hr. PR: First professional year standing or consent. Students will develop skills in medical terminology, communications, information retrieval, dispensing, compounding, calculations, pharmaceutical care, and problem-solving skills.
702. *Physical Pharmacy*. 3 Hr. PR: First professional year standing or consent. Designed to teach students the basic principles related to physical phenomena and stability as well as introduce them to a variety of factors that influence drug dosage form design and stability.
703. *Practicum 1*. 1 Hr. PR: First professional year standing or consent. Introduces students to the concept of professionalism. Students will gain hands-on experience in a community pharmacy setting.
708. *Pharmaceutics*. 3 Hr. PR: PHAR 702. Pharmaceutics builds upon the concepts discussed in physical pharmacy and focuses on drug dosage forms and delivery systems, their design, drug delivery to the body through a variety of routes, and factors affecting drug delivery.
709. *Immunology and Biotechnology*. 3 Hr. PR: First year professional standing or consent. Students will learn basic functions of the immune system, elements of the pharmaceutical applications of biotechnology, and be introduced to the chemotherapy of infections.
710. *Practicum*. 1 Hr. PR: First professional year standing or consent. The course exposes students to a variety of pharmacy practice settings and patient care experiences. Students also receive training in first aid and cardiopulmonary resuscitation.
711. *Chemical Properties of Drugs*. 2 Hr. PR: First year professional standing or consent. Principles of chemical stability and chemical properties as they relate to drug molecules. Topics to be covered include functional group analysis, solubility, oil/water partitioning, organic acids and bases, and drug decomposition and metabolism.
712. *Pharmaceutical Care Lab 2*. 2 Hr. PR: First professional year standing or consent. Continuation of PHAR 701.
714. *Intro Community Rotation*. 2 Hr. PR: PHAR 710. Students will gain experience preparing prescriptions, providing basic drug information to patients, and participating in disease prevention activities in a community pharmacy setting.
715. *Pathophysiology/Therapeutics 1*. 4 Hr. PR: Second professional year standing or consent. Principles and concepts of pathophysiology and pharmacotherapeutics. An organ system approach to disease states and their therapeutic management will be followed.
716. *Chemistry of Drug Action 1*. 3 Hr. PR: PHAR 711 or consent. Provides a basic understanding of relationships between the chemical structure of a drug and its biological effect. Physicochemical properties, enzymatic transformations and structure-activity relationships (SAR) of important pharmaceutical agents are discussed.
717. *Practicum 3*. 1 Hr. This course introduces students to the basic principles of institutional pharmacy practice and service learning.
719. *Practicum 4*. 1 Hr. PR: PHAR 717. Continuation of PHAR 717.
720. *Patient Health Education*. 2 Hr. PR: Second professional year standing or consent. Interpersonal communication skills will be enhanced in the areas of patient-centered and colleague-centered communications. Students will learn processes for providing pharmaceutical care (e.g., interviewing and counseling patients; formulating a plan; monitoring; and documenting information).
723. *Pharmaceutical Care Lab 3*. 1 Hr. PR: Second professional year standing or consent. Continuation of PHAR 712.
724. *Pharmaceutical Care Lab 4*. 2 Hr. PR: Second professional year standing or consent. Continuation of PHAR 723.
725. *Pathophysiology/Therapeutics 2*. 4 Hr. PR: PHAR 715 or consent. A continuation of PHAR 715.
726. *Chemistry of Drug Action 2*. 2 Hr. PR: PHAR 716 or consent. A continuation of PHAR 716.
727. *Medical Literature Evaluation*. 2 Hr. PR: Second professional year standing or consent. Emphasis is placed on the critical analysis and evaluation of the primary literature. Secondary and computerized information resources are also discussed, including other selected aspects of drug information.
728. *Pharmacy Management*. 2 Hr. PR: Second professional year standing or consent. This course provides an introductory survey of the basic principles of personnel and fiscal management as they apply to organizational planning and decision-making, organizational design and structure, leadership and control in organizations, and the issues facing pharmacy managers.
729. *Intro Institutional Rotation*. 2 Hr. PR: PHAR 719. Second professional year standing or consent. Gain experience in an institutional pharmacy setting.
730. *Pathophysiology/Therapeutics 3*. 4 Hr. PR: PHAR 725 or consent. A continuation of PHAR 725. An organ system approach to disease states and their therapeutic management will be followed.
731. *Biopharm and Pharmacokinetics*. 3 Hr. PR: Third year professional standing or consent. Fundamental principles of biopharmaceutics (physicochemical and biological processes affecting drug transit into the systemic circulation) and pharmacokinetics (kinetic and biological processes a drug undergoes upon entering the body).
732. *Non-Prescription Drugs*. 3 Hr. PR: Third year professional standing or consent. An advanced level course on the appropriate selection, and use of non-prescription drug products in the contemporary practice setting, the basis for self-medication, assessment of patient condition, and approach to patient counseling.

733. *Pharmacy Systems*. 2 Hr. PR: Third year professional standing or consent. Basic principles of financial management as they apply to the day-to-day operations in pharmacy systems present in institutional, community, long-term care facilities and other pharmacy venues.
734. *Pharmacy Law and Ethics*. 3 Hr. PR: First professional year standing or consent. The legal and ethical basis of pharmacy practice. Students learn about federal and state statutes, rules, and regulations that affect pharmacy practice. Ethics related situations that can arise during pharmacy practice will also be discussed.
735. *Pharmaceutical Care Lab 5*. 1 Hr. PR: PHAR 724. Continuation of PHAR 724.
736. *Pharmaceutical Care Lab 6*. 1 Hr. PR: Third year professional standing or consent. Experience in pharmaceutical compounding, patient assessment and monitoring, professional/ethical decision making, pharmacokinetic dosing of medications, and prevention of adverse drug-related events and medication errors.
737. *Disease Prevention Health Promotion*. 2 Hr. PR: Third year professional standing or consent. This course exposes pharmacy students to pharmacoepidemiology and public health. Instruction focuses on pharmacists as integral to preventing and detecting disease and promoting community health. Emphasis is given to rural health care and Appalachian culture.
738. *Outcomes Assessment and Quality Improvement*. 2 Hr. PR: Third professional year standing or consent. Outcomes assessment and quality improvement will expose students to the development and implementation of formularies, drug use evaluations, outcomes assessment, and quality improvement. Emphasis will be placed on how these issues relate to pharmaceutical services.
739. *Therapeutic Patient Monitoring*. 3 Hr. PR: Third professional year standing or consent. Employs both didactic and experiential instruction to provide students with the knowledge and skills required to assess the health status of medicated patients with special emphasis on monitoring therapeutic endpoints.
740. *Pathophysiology/Therapeutics 4*. 4 Hr. PR: PHAR 730 or consent. A continuation of PHAR 730.
741. *Clinical Pharmacokinetics*. 3 Hr. PR: PHAR 731 or consent. This course will review advanced concepts in pharmacokinetics and cover the basic pharmacokinetic properties of commonly used drugs and apply these principles to drug dosing, patient management, and rational therapeutic drug monitoring.
747. *History of Pharmacy*. 2 Hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present.
- 749 A-Z. *Pharmaceutical Investigations*. 2-3 Hr. PR: Consent. Original investigation in pharmaceuticals, medical chemistry, pharmacology, pharmaceutical systems and policy, or clinical pharmacy. (Grading will be S/U.)
750. *Automation and Technology*. 2 Hr. PR: Second year professional standing or consent. Provides an understanding of the newest technology that is available to a pharmacist in a retail or institutional setting. Students will learn to use PowerPoint, and gain experience making presentations and public speaking.
751. *Geriatrics and Gerontology*. 2 Hr. PR: Second or third year pharmacy students. A review of common pharmacotherapeutic and social issues of importance to older adult patients.
760. *Medicine Rotation 1*. 4 Hr. PR: Fourth year professional standing or consent. Experience in the delivery of pharmaceutical care in an acute care setting. (Course will be graded S/U.)
761. *Medicine Rotation 2*. 4 Hr. PR: Fourth year professional standing or consent. Experience in the delivery of pharmaceutical care in an acute care setting. (Course will be graded S/U.)
762. *Ambulatory Care Rotation 1*. 4 Hr. PR: Fourth year professional standing or consent. Experience in the delivery of pharmaceutical care in an ambulatory care setting. (Grading will be S/U.)
763. *Ambulatory Care Rotation 2*. 4 Hr. PR: Fourth year professional standing or consent. Experience in the delivery of pharmaceutical care in an ambulatory care setting. (Course will be graded S/U.)
764. *Elective Rotation 1*. 4 Hr. PR: Fourth year professional standing or consent. Students will gain pharmacy experience in an acute care or ambulatory care setting, research environment, or nontraditional pharmacy site. (Course will be graded S/U.)
765. *Elective Rotation 2*. 4 Hr. PR: Fourth year professional standing or consent. Students will gain pharmacy experience in an acute care or ambulatory care setting, research environment, or nontraditional pharmacy setting. (Course will be graded S/U.)
766. *Elective Rotation 3*. 4 Hr. PR: Fourth year professional standing or consent. Students will gain pharmacy experience in an acute care or ambulatory care setting, research environment, or nontraditional pharmacy site. (Course will be graded S/U.)
767. *Elective Rotation 4*. 4 Hr. PR: Fourth year professional standing or consent. Students will gain pharmacy experience in an acute care or ambulatory care setting, research environment, or nontraditional pharmacy site. (Grading will be S/U.)
768. *Elective Rotation 5*. 4 Hr. PR: Fourth year professional standing or consent. Students will gain pharmacy experience in an acute care or ambulatory care setting, research environment, or nontraditional pharmacy site. (Course will be graded S/U.)
770. *Community Rotation 1*. 4 Hr. PR: Fourth year professional standing or consent. Experience in the delivery of pharmaceutical care in a community pharmacy setting. (Course will be graded S/U.)

771. *Community Rotation 2.* 4 Hr. PR: Fourth year professional standing or consent. Experience in the delivery of pharmaceutical care in a community pharmacy setting. (Course will be graded S/U.)
772. *Institutional Rotation 1.* 4 Hr. PR: Fourth year professional standing or consent. Experience in the delivery of pharmaceutical care in a health system setting. (Course will be graded S/U.)
773. *Institutional Rotation 2.* 4 Hr. PR: Fourth year professional standing or consent. Experience in the delivery of pharmaceutical care in a health system setting. (Course will be graded S/U.)
775. *Advanced Biopharmaceutics.* 3 Hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
776. *Advanced Pharmaceutics.* 3 Hr. Physicochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, and prolonged action medication.
777. *Economics of the Pharmaceutical Industry.* 3 Hr. History, background, and formation of major drug industries Oligopolistic practices, mergers, combines, costs of research, and production.
778. *Advanced Pharmaceutical Analysis 1.* 3 Hr. Spectroscopic and chromatographic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.
779. *Drugs: Bench to Market.* 3 Hr. PR: Graduate standing or permission of instructor. This is an introductory course that describes the process of drug discovery to the development of new forms for therapeutic use. Topics covered include drug design/discovery, pharmacokinetics and dynamics, pharmaceutics and industry pharmacy.
780. *Introduction to Molecular Modeling.* 4 Hr. PR: Graduate standing or permission of instructor. Introduction to molecular modeling describes computational methods for chemical and biological problems and is designed to enable the student to use molecular modeling methods as a research tool in this current or future research activities
781. *Drug Metabolism.* 3 Hr. PR: Graduate standing or permission of instructor. This course presents a comprehensive review of the field of drug metabolism with an emphasis on the chemistry and enzymology of drug biotransformation, and current methods in drug metabolism research.
782. *Behavior Theory in Outcomes Research.* 3 Hr. Behavior theories (individual, intrapersonal, and organizational/community) applied to patient health behavior intervention by health care providers to explain, predict, and/or achieve patient health, humanistic and economic outcomes; includes patient education and intervention research.
790. *Teaching Practicum.* 1-3 Hr. PR: Consent. Supervised practice in college teaching of pharmacy. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)
- 791 A-Z. *Advanced Topics.* 1-6 Hr. PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.
- 792 A-Z. *Directed Study.* 1-6 Hr. Directed study, reading, and/or research.
- 793 A-Z. *Special Topics.* 1-6 Hr. A study of contemporary topics selected from recent developments in the field.
- 794 A-Z. *Seminar.* 1-6 Hr. Seminars arranged for advanced graduate students.
795. *Independent Study.* 1-6 Hr. Faculty supervised study of topics not available through regular course offerings.
796. *Graduate Seminar.* 1 Hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of his/her program.
797. *Research.* 1-15 Hr. PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)
798. *Dissertation.* 2-4 Hr. PR: Consent. Note: This is an optional course for programs that believe that this level of control and supervision is needed during the writing of their student's reports, thesis, or dissertations. (Grading will be S/U.)
799. *Graduate Colloquium.* 1-6 Hr. PR: Consent. For graduate students not seeking coursework credit but who wish to meet residence requirements, use the University's facilities, and participate in its academic and cultural programs. Note: Graduate students not actively involved in coursework or research are entitled, through enrollment in his/her department's graduate colloquium, to consult with graduate faculty, participate in both formal and informal academic activities sponsored by his/her program, and retain all of the rights and privileges of duly enrolled students. (Grading is S/U; colloquium credit may not be counted against credit requirements for master's programs.)

For a description of all graduate-level (Year III) courses, please refer to the online *West Virginia University Graduate Catalog* at <http://www.coursecatalog.wvu.edu>.

# Health Sciences Faculty

## School of Dentistry

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## School of Medicine

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