

# Medicine

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## Degrees Offered

- Doctor of Medicine
- Joint Doctor of Medicine and Doctor of Philosophy
- Joint Doctor of Medicine Jurisprudence Degree
- Joint Doctor of Medicine and MBA

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./PhD. 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).

## 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 the WVU School of Medicine Clinical Performance Exam, 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 website. 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. If a student has been found to have an unsatisfactory performance in grade or narrative evaluations in any of the required courses, the student will be required to remediate the deficiency or be dismissed from the program in the school. In selected circumstances, the committee may require remedial work of all or a portion of the curriculum.

The Committee on Academic and Professional Standards may require a student to complete remedial work or dismiss the student even though no failing (F) grade has been received in a required course. Such an 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, actions taken by the Committee on Academic and Professional Standards.

## Grading Policy

All courses required for the M.D. degree are graded as honors (H), pass (P), or fail (F) at the completion of the course in lieu of other letter grades. The H, P, and F 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 student portfolio. A grade of F 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 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 examination mechanism by which this license may be obtained for allopathic physicians. The School of Medicine requires a passing grade on both Step I and Step 2 for promotion and graduation. A failing grade will delay progress and require remediation. Students are limited to three attempts on each step. Failure on the third attempt will result in dismissal from the program.

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 Student Services website.

## 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 Student Services, School of Medicine.

### Admissions Requirements

***For the most up-to-date information, please refer to our admissions website at: <https://medicine.hsc.wvu.edu/md-admissions/>***

### Medical College Admissions Test (MCAT)

- The Medical College Admission Test (MCAT) is required of all applicants.
- MCAT scores will be accepted from exams taken between **September, 2015** and **September, 2018**.
- There is no required minimum MCAT score to apply for Regular Decision. Applicants should refer to the Class Profile for more information.
- Early Decision applicants **must** have a 125 or greater in each sub-section.

### Credit Hour and Course Requirements

- Minimum of 90 Credit Hours PLUS Three years of higher education post-high school (at the undergraduate or graduate level) in an accredited US or Canadian Institution.
- All pre-requisites must be completed at an accredited US or Canadian Institution.
- One gap year which would include meaningful mission-based experiences could potentially be substituted for up to one year of higher education.
- **Biology or Zoology:** 6 hours
- **General Chemistry:** 6 hours
- **Organic Chemistry:** 6 hours {*Substitute with 3 Hours Organic Chemistry and 3 Hours Biochemistry*}
- **Physics:** 6 hours
- **Lab Courses:** 6 hours *Lab Courses must be in Biology, Biochemistry, Physics, Inorganic or Organic Chemistry*

## Recommended Premedical Coursework

- Biochemistry
- Cell and Molecular Biology
- Physiology

## Letters of Recommendation

- A committee letter provided by your undergraduate institution
- or 4 letters of recommendation of your choice
- Letters of recommendation should be uploaded to your AMCAS application at least two weeks prior to your interview

## Secondary Application

Applicants will be notified via email with instructions on how to submit the secondary application.

## CASPer Test

CASPer™ Test (Computer Based Assessment for Sampling Personal Characteristics)

All Applicants who receive a secondary application are encouraged to complete the CASPer™ evaluation to assist with our Admissions process. Your CASPer™ results will provide the Admissions Team with additional information about you as an applicant. It is permissible to sign up for a CASPer™ test date and complete the evaluation after your medical school application has been submitted. Please note that CASPer™ results will be available to our Team three weeks from your test date. Please be mindful that applicants will be invited for interviews with or without CASPer™ results, as testing for the 2019 cycle is optional.

Our Admissions Team is unable to answer any informational calls, emails, or communications about CASPer™. Any queries should be directed to CASPer™ at <https://takecasper.com/contact-us>

More information is available at the following link: <https://takecasper.com/aboutcasper/>

## Technical Standards

In accordance with section 504 of the Rehabilitative Act of 1973 (PL 93-112) and following careful review of the 1979 report by a Special Advisory panel on Technical Standards of the Association of American Medical Colleges, 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 Medicine has adopted minimal technical standards for the assessment of all applicants to the School of Medicine. Please see the Technical Standards Policy here.

## Ineligible Applicants

- Medical Students who have been dismissed or have been terminated by an allopathic or osteopathic school will **not** be considered for admittance.
- Individuals who have previously earned an allopathic or osteopathic medical degree, whether in this country or abroad, will **not** be considered for admittance.

# Doctor of Medicine

## CURRICULUM REQUIREMENTS

BMP 741	Clinical Clerkship in Psychiatry	6
Problem-based Learning		4
CCMD 701	Problem-Based Learning (Repeated)	
CCMD 712	Public Health	3
CCMD 721	Physical Diagnosis/Clinical Integration 2	4
CCMD 722	Physical Diagnosis and Clinical Integration 2	5
CCMD 725	Health Care Ethics	2
CCMD 730	Human Function	16
CCMD 740	Behavioral Science and Psychopathology	4
CCMD 745	Physical Diagnosis/Clinical Integration 1	3
CCMD 746	Physical Diagnosis and Clinical Integration	4
CCMD 775	Neurobiology	7

CCMD 776	Step-One Board Preparation	3
CCMD 777	USMLE Step-2 Clinical Knowledge Examination	2
CCMD 778	Basic Medical Science Exam	2
CCMD 779	Clinical Performance Examination	1
CCMD 780	Hospital Care	4
CCMD 781	Rural Health	4
CCMD 782	Critical Care Clerkship	2
FMED 731	Clerkship	8
MED 731	Clinical Clerkship in Medicine	8
MICB 801	Immunity, Infection and Disease	9
NBAN 801	Human Structure	19
NEUR 741	Clinical Clerkship in Neurology	2
OBST 741	Clinical Clerkship in Obstetrics and Gynecology	8
PATH 801	Mechanisms of Human Disease	11
PCOL 801	Medical Pharmacology	9
PEDI 731	Clinical Clerkship in Pediatrics	8
SURG 741	Clinical Clerkship in Surgery	8
CCMD 783	USMLE Step-2 Clinical Skills Examination Prep	1
CCMD 784	Anesthesiology Clerkship	2
Independent Study Requirement		20
CCMD 795	Independent Study	
CCMD 788	Selective Experiences in Medicine	3
Total Hours		192

## FIRST YEAR

Medical students' first year is a thirty-seven-week academic year divided into three blocks (sixteen weeks, fifteen weeks, and seven weeks). There are approximately twenty-two scheduled instructional contact hours per week. Each block contains three courses: a basic science multidisciplinary course, public health (epidemiology, biostatistics, and preventive medicine) in the fall, 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 (sixteen weeks) contains a multidisciplinary run course: human function (physiology, biochemistry, and genetics.). Second block (fifteen 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 is maintained throughout the first year. Students also complete a summer selective experience for a total of 3 credit hours.

## SECOND YEAR

Medical students' second academic year is thirty-four weeks. The schedules of course material from Microbiology and Immunology, Pathology, Pharmacology, and Physical Diagnosis and Clinical Integration-two courses are integrated by organ system. Each course maintains its autonomy with respect to assessment of student performance. This integrated, yet independent, approach assists students in finding remediation courses if they experience academic difficulty in any one particular discipline. In addition to the integration of the schedule of these four courses, there is an additional course, Behavioral Science and Psychopathology, in the fall and Health Care Ethics in the spring. There are approximately nineteen scheduled instructional contact 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 for a total of 48 weeks. 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 completes 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 third and fourth year at 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 Student Services.

Three 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 one month of rural community care. The remaining five 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://medicine.hsc.wvu.edu/ms4catalog>

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.

## SUGGESTED PLAN OF STUDY\*

### First Year

Fall	Hours Spring	Hours Summer	Hours
CCMD 712	3 CCMD 701	2 CCMD 788	3
CCMD 730	16 CCMD 746	4 CCMD 775	7
CCMD 745	3 NBAN 801	19	
CCMD 701	2		
	24	25	10

### Second Year

Fall	Hours Spring	Hours Summer	Hours
CCMD 721	4 CCMD 722	5 CCMD 776	3
CCMD 740	4 CCMD 725	2	
MICB 801 (MICB 801 is a year long course)	9 CCMD 778	2	
PATH 801 (PATH 801 is a year long course)	11		
PCOL 801 (PCOL 801 is a year long course)	9		
	37	9	3

### Third Year

Fall	Hours Spring	Hours Summer	Hours
FMED 731	8 BMP 741	6 SURG 741	8
MED 731	8 NEUR 741	2	
OBST 741	8 PEDI 731	8	
	24	16	8

### Fourth Year

Fall	Hours Spring	Hours
CCMD 777	2 CCMD 783	1
CCMD 779	1 CCMD 784	2
CCMD 780	4	
CCMD 781	4	
CCMD 782	2	
Independent Study Requirement CCMD 795	20	
	33	3

Total credit hours: 192

\*This is a Suggested Plan of Study. Sequence may vary depending on student.

## Major Learning Outcomes

### MEDICINE

This program is designed for students to develop knowledge, skills, and attitudes across six (6) competency areas: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, and Systems-Based Practice.

Students will:

Provide patient care that is compassionate, appropriate, and effective and promote life-styles that promote improved health:

- Gather essential and accurate patient information, including a complete and appropriately organized medical history and physical examination
- Evaluate patient information in order to formulate complete and accurate differential diagnoses and apply appropriate diagnostic tests to confirm diagnoses
- Develop patient management plans that are evidenced-based and considerate of cultural and ethnic preferences
- Counsel and educate patients and their families about prevention strategies, diagnostic tests, treatment options/plans, and patient orders/prescriptions
- Perform medical procedures appropriately and professionally
- Partner with patients to prevent health problems and improve health status

Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences and apply this knowledge to patient care:

- Describe normal structure and function of the human body and each organ system over the lifespan
- Describe molecular, cellular, and biochemical mechanisms of homeostasis
- Describe and apply normal cognitive and social growth and development of humans to diagnose abnormal cognitive and social development
- Describe causes of altered structure and function of organ systems and tissues that result in disease (genetic, developmental, nutritional, toxic, infectious, inflammatory, neoplastic, degenerative, traumatic, and behavioral)
- Describe foundations of diagnostic methods, therapeutic interventions, outcomes, and prevention with respect to specific disease processes in individuals and populations
- Describe genetic and physiologic basis of individual patient response to drugs
- Describe and apply foundational principles of epidemiology, statistics, and ethics to diagnosis and treatment of disease
- Explain the effect of social determinants, health behaviors, and preventative measures on health status and disease of individuals and populations
- Demonstrate use of scientific method and critical evaluation of scientific literature in establishing causation, diagnosis, and therapy of disease

Demonstrate the ability to investigate and evaluate their role in the care of patients, to appraise and assimilate scientific evidence, and to continuously improve their role in patient care based on constant self-evaluation and learning:

- Locate, appraise and assimilate evidence from scientific studies including basic, clinical, translational, and community (population) based research
- Apply knowledge of study designs and statistical methods to appraise studies
- Use information technology to manage information and support patient care decisions
- Develop the skills necessary for lifelong learning, as evidenced by demonstrating independent and self-directed study
- Utilize strategies to identify and analyze strengths, deficiencies, and limits in one's knowledge, collaboration skills, and professionalism

Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, peers, and health professionals:

- Communicate effectively and demonstrate caring and respectful behaviors with patients and families across a broad range of socioeconomic and cultural backgrounds
- Collaborate with a team of health care professionals to provide patient-focused, preventive, acute, chronic, continuing, rehabilitative, and end-of-life care
- Provide an accurate and complete oral presentation of a patient encounter
- Demonstrate effective communication and collaboration with all members of a health care team
- Write timely, legible, accurate and complete documentation of a clinical encounter in written or electronic format

Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles:

- Demonstrate respect, compassion, integrity, responsiveness to needs of patients, society, and profession that supersedes self-interest
- Demonstrate a commitment to ethical principles, including provision or withholding of care, confidentiality, informed consent, and respect for patient privacy and autonomy

- Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in culture, age, gender, race, religion, disabilities, sexual orientation, and health
- Create and sustain a therapeutic and ethically sound relationship with patients
- Demonstrate timeliness and punctuality in the execution of learning and clinical duties

Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to learn about other resources in the system to promote optimal health care:

- Define the roles of health care professionals and demonstrate how inter-professional collaboration improves patient safety, patient-centered outcomes, and system performance
- Describe and distinguish effective methods of organizing, financing, and providing health care
- Describe how the prevention and treatment of healthcare disparities may affect individual patients, populations, and the healthcare system
- Advocate for quality patient care, as evidenced by recognizing system limitations and failures and contributing to healthcare safety and improvement