

# Eberly College of Arts and Sciences

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## Overview and Mission

First established in 1867, and named in 1993, the Eberly College of Arts and Sciences is the heart of West Virginia University. Its West Virginia University's largest academic college and boasts the most disciplinary breadth, providing education in the areas of literature and the humanities, mathematical and data science, natural science, and social and behavioral sciences.

Eberly values interdisciplinarity. In addition to their primary majors, students often earn minors or double majors which allow them to create unique academic profiles. Through Eberly's varied academic offerings, students are encouraged to tackle the world's most pressing challenges through subject-area expertise, hands-on experience, and creativity.

The Eberly College is committed to student success inside and outside of the classroom. All undergraduate students participate in the Eberly Edge program as their core college curriculum. The Eberly Edge is a unique educational experience that aims to prepare students, regardless of major, for their next steps. This innovative program promotes interdisciplinary thinking, fosters a sense of belonging, and develops desirable career competencies for professional and personal success.

Students in the Eberly College are guided by award-winning faculty who are excellent teachers, prolific scholars, and skilled mentors. Our faculty embrace hands-on approaches to teaching and learning and are committed to the success of their students. Student success is further enhanced by Eberly's Foundational STEM Collaborative, Writing Studio, and dedicated advisors and career development specialists. Eberly's faculty, curriculum, and student support services provide the foundation for continued growth and development long after graduation as students tackle 21<sup>st</sup> century's most pressing issues.

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## ADMINISTRATION

### DEAN

- R. Gregory Dunaway - Ph.D. (University of Cincinnati)  
Dean

### ASSOCIATE DEANS

- Valérie Lastinger - Ph. D. (University of Georgia)  
Academic Affairs
- Asuntina S. Levelle - J.D. (West Virginia University)  
Financial Planning and Management
- Rita Rio - Ph.D. in Biology (Yale University)  
Associate Dean for Research and Graduate Studies

### ASSISTANT DEANS

- Andrea Bebell - Ph.D. (West Virginia University)  
Undergraduate Student Services and Programs
- John Navaratnam - Ph.D. (West Virginia University)  
Curriculum and Assessment

## EBERLY EDGE PROGRAM

An education in arts and sciences nurtures intellectual curiosity and empowers students with the skills they need for a dynamic and rapidly evolving world. Graduates are given an edge for life as private citizens as well as professionals. The Eberly Edge, an innovative core curriculum, stresses the connections between diverse academic disciplines through intentional collaboration and integration of the arts and sciences. In doing so, the Eberly Edge prioritizes meaningful education experiences that foreground professional preparedness and experiential learning opportunities that not only demonstrate the synergy between academic disciplines but reinforces core competencies identified by employers as desirable skills. Further, the Eberly Edge's focus on outcomes will serve to differentiate the Eberly College of Arts and Sciences and attract future students within a quickly evolving and competitive market. For current students, the Eberly Edge will support retention efforts through its intentional focus on shared values, experiences, goals, and community.

All Eberly majors in a B.A., B.S, B.M.D.S., and B.S.W. program must complete the Eberly Edge as described on the catalog curriculum page for each program.

Sections of courses taught for the Eberly Edge program are assessed separately from other sections of the same course. While all sections of a course share a similar content, sections designated as EDG sections meet additional requirements and a different pedagogical approach. For this reason,

Eberly Edge courses may not be taken via transient work or via dual campus enrollment. Transfer students will work with the College Office transfer adviser to understand how the Eberly Edge coursework will be fulfilled.

## PROGRAM LEARNING OBJECTIVES

1. **Data in society:** Evaluate reliability, validity, and scope, including assessing the role of technology in creation, analysis, representation, and accessibility of information.
2. **Effective and civil communication:** Demonstrate effective and civil communication in spoken and written forms that respond appropriately to audience, purpose, and context.
3. **Ethics and civic responsibility:** Compare and contrast the outcomes of applying different ethical principles and frameworks to everyday life, learning, and workplace scenarios.
4. **Global and regional perspectives:** Develop awareness of the impact cultural, economic, and social structures have on communities near home or around the world.
5. **Integration of arts and sciences & application for policy and practice:** Integrate diverse disciplinary knowledge bases to effectively understand and address complex and boundary spanning topics and design ethical, data-driven solutions to local/global issues and effectively communicate them to relevant stakeholders as part of an interdisciplinary team.
6. **High-Impact Learning Experience:** Integrate outside-the-classroom experiences and observations with academic studies to apply knowledge in complex situations.

## EBERLY EDGE CURRICULUM

As part of their graduation requirements, students must fulfill all 6 Edge requirements, either through a major course requirement or a through an Eberly Edge (EDG) designated section of a course, for a total of 18 credits. Courses used to fulfill one of the EDG requirements can also double as a general education course, a major or minor course, but must be a course or a section of a course approved for the Eberly Edge.

- Each major may have at minimum 3 credits of overlap. To see what the overlap is for each major, please navigate to the specific major. The overlap approved overlap will change when students change majors. To see the overlap, please refer to each major link in the catalog.
- If students pursue a dual degree or a double-major, they will fulfill the Eberly Edge curriculum of the primary degree.
- Eberly Edge courses are eligible for the D/F repeat policy. EDG courses can be D/F repeated with any section of the course; however, to fulfill the EDG requirement, it must be D/F repeated with an EDG section specifically.

| Code                                     | Title | Hours |
|--|-------|-------|
| EDG 1: Data and Society                  |       | 3     |
| EDG 2: Effective and Civil Communication |       | 3     |
| EDG 3: Ethics and Civic Responsibility   |       | 3     |
| EDG 4: Global and Regional Perspectives  |       | 3     |
| EDG 5: Practicing Arts and Sciences      |       | 3     |
| EDG 6: High Impact Experience            |       | 3     |
| Total Hours                              |       | 18    |

For questions about the Eberly Edge, please email [ECASUGFORMS@mail.wvu.edu](mailto:ECASUGFORMS@mail.wvu.edu)

## SpeakWrite Program

The Eberly College of Arts and Sciences is committed to fostering students' abilities in writing, speaking, visual presentations. The College's SpeakWrite (<https://speakwrite.wvu.edu/about/>) initiative helps students become stronger, more confident communicators in their classes, in their work, and in their community by assessing:

- **Purpose:** What exactly do I want to happen?
- **Audience:** Who is reading, listening, or viewing?
- **Conventions:** What is expected in this context?
- **Trouble spots:** What could get in the way of my goals?

### SpeakWrite Principles:

- **Engagement.** When students speak and write purposefully and thoughtfully in their classes, they are engaged. They are ready to enter conversations in their fields and in their communities. They are developing a critical skill, valued by employers and society, that is a hallmark of an Arts and Sciences education.
- **Practice.** Effective communication is a complex activity that cannot be mastered in a single course. It is the responsibility of the entire academic community. Students need practice conveying the knowledge they gain as they complete their majors.

- Discipline-Specific Knowledge and Abilities. People write and speak with a particular *purpose*, to a particular *audience*, in a particular context defined by particular *conventions*. Speaking and writing in the majors is most effectively guided by those with discipline-specific expertise.

The Eberly Writing Studio (<https://speakwrite.wvu.edu/writing-studio/>) is available as a resource, consultant, and partner for faculty teaching SpeakWrite courses--and their students.

Several Eberly College undergraduate programs are **SpeakWrite Certified™**. SpeakWrite Certified Programs (<https://speakwrite.wvu.edu/about/certified-majors-and-courses/>) incorporate and develop students' written, verbal, visual, and mediated communication skills in coursework across the curriculum. Students completing majors in SpeakWrite Certified Programs automatically fulfill the WVU General Education Foundations (GEF) writing and communication skills requirement.

Students completing Eberly College programs that do not carry SpeakWrite Certification fulfill the writing and communication skills requirement by completing ENGL 101 and 102 (or 103), and a minimum of two additional program-designated SpeakWrite Certified courses.

## Degree Options

The Eberly College offers 5 types of degrees: Bachelor of Arts (B.A.), Bachelor of Integrated Studies (B.I.S.), Bachelor of Multidisciplinary Studies (B.M.D.S.), Bachelor of Science (B.S.), Bachelor of Social Work (B.S.W.). In addition, the College offers a State-level degree, the Regents' Bachelor of Arts (R.B.A.).

While those degrees vary greatly in scope and applications, all of our degrees are unified through the College core: the Eberly Edge. This curriculum complements each of our degree programs so that all graduates of the Eberly College have a shared experience and are fully prepared with the skills required for lifelong learning and future careers. The Eberly Edge is a flexible core that provides students with opportunities that enhance their learning in their major curriculum. It includes a high impact experience that students may fulfill either through an experience requirement built into their major, or by an individual one (study abroad, internship, school placement, etc.).

### BACHELOR OF ARTS:

The Bachelor of Arts is designed to offer ample room for students to design part of their curriculum. The 120 credit hours required of all WVU degrees are a careful balance of general education courses, major courses, and general electives. On average, a B.A. degree comprises 30 credits of general education, 39 credit hours of courses in the major and 51 credits of general electives. This balance allows students to easily earn a double-major, or additional minors. This well-rounded degree gives students a broad educational foundation that they will use as lifelong learners. Students' familiarity with a variety of disciplines spanning the humanities, social sciences and natural sciences gives them broad adaptability for the careers in many fields, even as those fields rapidly change.

*B.A. Structure:* To preserve this balance of the B.A. students who earn 120 credits may earn a maximum of 46 credits in their major.

### BACHELOR OF INTEGRATED STUDIES:

The Bachelor of Integrated Studies is designed as a very flexible degree with 30 credits of general education, 30 credits of major electives, and 60 credits of general electives. Students can work with their adviser to design a degree that prepares them for their next step. They can take advantage of several career preparation skills such as communication and earn minors.

### BACHELOR OF MULTIDISCIPLINARY STUDIES:

The Bachelor of Multidisciplinary Studies is an online or a face-to-face program that allows students to earn three minors in the areas of their choice across all colleges. The flexible curriculum includes opportunities for service learning and internships.

### BACHELOR OF SCIENCE:

The Bachelor of Science is designed to provide a focused study in the science of a student's major as well as acquiring foundational knowledge of mathematics, statistics, and science outside of the major. On average, the Bachelor of Science comprises about 30 credits of general education, 60 credit hours of courses in the major and 30 credits of general electives. Students graduating with a B.S. acquire an appreciation of the sciences in a broad interdisciplinary context. The in-depth, wide-ranging preparation in the sciences opens the door for students to qualify for a variety of careers in industry, government, or research.

*B.S. Structure:* To ensure a broad preparation in the sciences, each major with the B.S. degree designation must include at the minimum MATH 150 and of 2 pairs of 2 different foundational sciences outside of the major (BIOL, CHEM, PHYS, SUST). The bachelor's degrees in Data Science and in Mathematics may replace one pair of science with MATH 156 and STAT 215.

### BACHELOR OF SOCIAL WORK:

The B.S.W. is a professional, nationally accredited degree that prepares students for a career in social work in a variety of contexts. The B.S.W. curriculum ensures that students are well prepared to practice their chosen profession in hospitals, schools, non-profit organizations or government agencies. The B.S.W. curriculum is accredited by the Council on Social Work Education (C.S.W.E.). It currently comprises 25 credits of general education coursework, 69 credit hours in the major and about 16 general elective credits.

*B.S.W. Structure:* The B.S.W. curriculum requires an array of courses in allied disciplines as well as a core courses in social work. Prior to their junior year, students must satisfy all requirements to be admitted to the professional level of the curriculum. Students educational experience culminates with a field placement.

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## Minors

Most major programs in the Eberly College of Arts and Sciences also offer academic minors (<http://catalog.wvu.edu/undergraduate/eberlycollegeofartsandsciences/#minorstext>). In addition, minors are available in Africana Studies, Gerontology, Leadership Studies, LGBTQ Studies, Medical Humanities and Health Studies, Native American Studies, and Statistics. If a student successfully completes the requirements for a minor, it will be recorded on the student's official record and will appear on transcripts.

Requirements for academic minors are set by the department offering the minor. Specific courses may be required as well as a minimum grade or grade point average for courses in the minor. Courses in the minor may not be taken pass/fail. The minor field may not be the same as the student's major field.

## Certificate Programs

The Eberly College offers an undergraduate certificate program in Behavior Analysis ([http://catalog.wvu.edu/undergraduate/undergraduatecertificate/behavior\\_analysis/](http://catalog.wvu.edu/undergraduate/undergraduatecertificate/behavior_analysis/)).

## Eberly College of Arts and Sciences Minors

Eberly majors can select from a great variety of minors in our college (see below) or in other colleges. Earning a minor is an excellent way for students to round up their education.

### DEPARTMENT OF BIOLOGY

- Biology (<http://catalog.wvu.edu/undergraduate/minors/biology/>)

### DEPARTMENT OF COMMUNICATION STUDIES

- Communication Studies ([http://catalog.wvu.edu/undergraduate/minors/communication\\_studies/](http://catalog.wvu.edu/undergraduate/minors/communication_studies/))

### DEPARTMENT OF ENGLISH

- Creative Writing ([http://catalog.wvu.edu/undergraduate/minors/creative\\_writing/](http://catalog.wvu.edu/undergraduate/minors/creative_writing/))
- English (<http://catalog.wvu.edu/undergraduate/minors/english/>)
- Medical Humanities and Health Studies (<http://catalog.wvu.edu/undergraduate/minors/medicalhumanitiesandhealthstudies/>)
- Professional Writing ([http://catalog.wvu.edu/undergraduate/minors/professional\\_writing\\_and\\_editing/](http://catalog.wvu.edu/undergraduate/minors/professional_writing_and_editing/))

### DEPARTMENT OF FORENSIC AND INVESTIGATIVE SCIENCE

- Forensic and Investigative Science (<http://catalog.wvu.edu/undergraduate/minors/forensicinvestigativesci/>)

### DEPARTMENT OF GEOLOGY AND GEOGRAPHY

- Geography (<http://catalog.wvu.edu/undergraduate/minors/geography/>)
- Geography: Geographic Information Science (GIS) (<http://catalog.wvu.edu/undergraduate/minors/gis/>)
- Geology (<http://catalog.wvu.edu/undergraduate/minors/geology/>)

### DEPARTMENT OF HISTORY

- Africana Studies ([http://catalog.wvu.edu/undergraduate/minors/africana\\_studies/](http://catalog.wvu.edu/undergraduate/minors/africana_studies/))
- History (<http://catalog.wvu.edu/undergraduate/minors/history/>)

### DEPARTMENT OF PHILOSOPHY

- Applied Ethics ([http://catalog.wvu.edu/undergraduate/minors/applied\\_ethics/](http://catalog.wvu.edu/undergraduate/minors/applied_ethics/))
- Philosophy (<http://catalog.wvu.edu/undergraduate/minors/philosophy/>)
- Religious Studies ([http://catalog.wvu.edu/undergraduate/minors/religious\\_studies/](http://catalog.wvu.edu/undergraduate/minors/religious_studies/))

### DEPARTMENT OF PHYSICS AND ASTRONOMY

- Astronomy (<http://catalog.wvu.edu/undergraduate/minors/astronomy/>)
- Physics (<http://catalog.wvu.edu/undergraduate/minors/physics/>)

## DEPARTMENT OF PSYCHOLOGY

- Psychology (<http://catalog.wvu.edu/undergraduate/minors/psychology/>)

## DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

- Anthropology (<http://catalog.wvu.edu/undergraduate/minors/anthropology/>)
- Criminology (<http://catalog.wvu.edu/undergraduate/minors/criminology/>)
- Sociology (<http://catalog.wvu.edu/undergraduate/minors/sociology/>)

## DEPARTMENT OF WOMEN AND GENDER STUDIES

- LGBTQ Studies (<http://catalog.wvu.edu/undergraduate/minors/lgbtqstudies/>)
- Women and Gender Studies ([http://catalog.wvu.edu/undergraduate/minors/women\\_and\\_gender\\_studies/](http://catalog.wvu.edu/undergraduate/minors/women_and_gender_studies/))

## DEPARTMENT OF WORLD LANGUAGES

- Arabic Studies (<http://catalog.wvu.edu/undergraduate/minors/arabicstudies/>)
- Chinese Studies ([http://catalog.wvu.edu/undergraduate/minors/chinese\\_studies/](http://catalog.wvu.edu/undergraduate/minors/chinese_studies/))
- French (<http://catalog.wvu.edu/undergraduate/minors/french/>)
- Spanish (<http://catalog.wvu.edu/undergraduate/minors/spanish/>)

## PROGRAM: NATIVE AMERICAN STUDIES

- Native American Studies ([http://catalog.wvu.edu/undergraduate/minors/native\\_american\\_studies/](http://catalog.wvu.edu/undergraduate/minors/native_american_studies/))

## SCHOOL OF MATHEMATICAL AND DATA SCIENCES

- Actuarial Science ([http://catalog.wvu.edu/undergraduate/minors/actuarial\\_science/](http://catalog.wvu.edu/undergraduate/minors/actuarial_science/))
- Applied Mathematics ([http://catalog.wvu.edu/undergraduate/minors/applied\\_mathematics/](http://catalog.wvu.edu/undergraduate/minors/applied_mathematics/))
- Data Science ([http://catalog.wvu.edu/undergraduate/minors/data\\_science/](http://catalog.wvu.edu/undergraduate/minors/data_science/))
- Pure Mathematics (<http://catalog.wvu.edu/undergraduate/minors/mathematics/>)
- Statistics (<http://catalog.wvu.edu/undergraduate/minors/statistics/>)

## SCHOOL OF POLICY AND POLITICS

### Leadership Studies

- Leadership Studies ([http://catalog.wvu.edu/undergraduate/minors/leadership\\_studies/](http://catalog.wvu.edu/undergraduate/minors/leadership_studies/))

### Political Science

- American Politics & Policy ([http://catalog.wvu.edu/undergraduate/minors/american\\_politics\\_\\_policy/](http://catalog.wvu.edu/undergraduate/minors/american_politics__policy/))
- International & Comparative Politics ([http://catalog.wvu.edu/undergraduate/minors/international\\_\\_comparative\\_politics/](http://catalog.wvu.edu/undergraduate/minors/international__comparative_politics/))
- Law & Legal Studies ([http://catalog.wvu.edu/undergraduate/minors/law\\_\\_legal\\_studies/](http://catalog.wvu.edu/undergraduate/minors/law__legal_studies/))
- Political Science (General) ([http://catalog.wvu.edu/undergraduate/minors/political\\_sciencegeneral/](http://catalog.wvu.edu/undergraduate/minors/political_sciencegeneral/))
- Political Theory ([http://catalog.wvu.edu/undergraduate/minors/political\\_theory/](http://catalog.wvu.edu/undergraduate/minors/political_theory/))

## SCHOOL OF SOCIAL WORK

- Gerontology (<http://catalog.wvu.edu/undergraduate/minors/gerontology/>)

## Policies

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## Admission to Arts and Sciences Degree Programs

High school students and transfer students are admitted directly to some majors, while some programs require completion of a few basic courses; specific requirements are described in departmental sections that follow. For current students who wish to move to an Eberly degree program,

the minimal College requirement for admission is a 2.0 overall average. Please see the Admission Tab for each major to see specific admission requirements.

## Eberly GPA Policy

- All degree programs in the Eberly College require a cumulative grade point average of 2.0, unless accreditation standards require a higher cumulative GPA.
- All majors in the Eberly College set performance standards for courses applied to meet major requirements. Performance may be evaluated in 3 different ways, at the discretion of the unit (please see individual major pages). If a major offers areas of emphasis (AOE), the AoE follows the same rules as the rest of the major.
  - a GPA of 2.0 in all courses applied to major requirements;
  - a minimum grade of C- in all courses applied to major requirements;
  - a GPA of 2.0 in all courses applied to major requirements, with a minimum grade of C- in selected courses.

## Office Hours

Faculty must hold regular weekly office hours during the semester/instructional period in which students may consult outside of class time to discuss course content and other related matters. Modality of the office hours will follow that of the course.

- Faculty teaching one or more courses are expected to hold a minimum of three regularly scheduled office hours per week outside of class times.
  - Depending on the course's modality, these office hours can be scheduled either for face-to-face interaction and/or synchronous online communication.
  - In the case of face-to-face courses, instructor may opt to conduct only one office hour synchronous online.
  - At least one of the three office hours shall be scheduled on a day the course is not in session.
- In addition to regularly scheduled office hours, faculty shall arrange alternative appointments (by appointment at a mutually convenient time) for students' conflicts.
- Office hours, including schedule, location, and contact information, shall be listed on the syllabus, on eCampus, and posted near the faculty member's office by the end of the first week of instruction.

## Permission to Enroll in a Graduate Course

- As per university policy, students who meet the criteria may seek permission to enroll in a graduate course numbered 500-599.
- If approved, students may enroll for up to one graduate course per semester.
- The percentage of undergraduate students in a 500 level class may not exceed 20% of the overall enrollment.

## Minimum and Maximum Load

Students should earn 15 credits a semester (or 30 credits a year) in order to stay on track in their 4-year graduation plan. A minimum of twelve hours in a semester is required for full-time status. No student enrolled in the College may enroll for more than twenty hours in a semester without permission from the Assistant Dean for Undergraduate Student Services and Programs. Typically, overload petitions are restricted to graduating seniors who take degree-pursuant courses, who have a completion rate above 90%, and have earned an overall GPA of 3.00.

## Credit by Examination Rules

Credit by examination provides students the opportunity to receive credit in courses by demonstrating that they have acquired sufficient knowledge of a subject without formal enrollment in a course or study in the classroom. This opportunity is offered only to students enrolled full- or part-time at the University. The initiation of a credit-by-examination request does not entitle a student to special in-class instruction or tutoring by an instructor.

Students may petition to receive credit by examination for any course listed by a department in the College as a course for which credit by examination is appropriately awarded. Applications, course lists, and examination schedules are available each semester.

A student may apply to challenge a course for credit by examination if

- The student is at the time of examination registered in the University
- The student's official record does not show credit for the course (i.e., any grade of S, P, A, B, C, D, or I)
- The student is not officially enrolled in the course at the time of examination (a student who withdraws from a course after the end of the official registration period is officially enrolled in that course until the end of the semester, and not eligible to take the course by examination during that semester); and
- A grade of F, FNA, FSA, IF, or UF has not been recorded on the student's transcript for the course within 2 calendar years of the date of the examination. A student may challenge the same course by examination only two times

Credit only (not a grade) will be awarded for the successful completion of the examination with a grade of C or higher. Because a comprehensive examination is used to establish credit, it is the policy of the College that a student should demonstrate at least an average (C) knowledge of course



content to receive any credit. The criteria for earning a C are made known in advance to students who request the information from the department offering the course examination.

A non-refundable fee is charged for credit by examination and must be paid within the prescribed period prior to each examination period.

## Probation and Suspension

### ACADEMIC PROBATION

After final grades are complete for the fall and spring semesters, the Registrar notifies students who have a GPA of less than a 2.00 and places them on Academic Probation until their GPA reaches the minimum 2.00. Probationary students must remedy their deficiency during the following semester. Students who accumulate three semesters of Academic Probation and who do not remedy their GPA by the end of the third term of Academic Probation will receive an Academic Suspension.

### ACADEMIC PROBATION

After final grades are complete for the fall and spring semesters, the Registrar notifies students who have a GPA of less than a 2.00 and places them on Academic Probation until their GPA reaches the minimum 2.00. Probationary students must remedy their deficiency during the following semester. Students who accumulate three semesters of Academic Probation and who do not remedy their GPA by the end of the third term of Academic Probation will receive an Academic Suspension. The three semesters are in total and need not be consecutive. Please see the university policy on Academic Probation and Suspension ([http://catalog.wvu.edu/undergraduate/coursecredittermsclassification/#probation\\_and\\_suspension](http://catalog.wvu.edu/undergraduate/coursecredittermsclassification/#probation_and_suspension)) for more details.

Eberly students who are placed on Academic Probation sign a contract which outlines schedule, meeting, and GPA requirements. Please see the Eberly website for details.

**NOTE: The plan of study and the probation contract will be used at the end of the semester if the student has to file an Academic Suspension and/or a Financial Aid appeal.**

Please see the university policy on Academic Probation and Suspension ([http://catalog.wvu.edu/undergraduate/coursecredittermsclassification/#probation\\_and\\_suspension](http://catalog.wvu.edu/undergraduate/coursecredittermsclassification/#probation_and_suspension)) for more details.

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**NOTE: The plan of study and the probation contract will be used at the end of the semester if the student has to file an Academic Suspension and/or a Financial Aid appeal.**

### DISMISSAL FROM MAJOR

Eberly students must meet the benchmarks outlined in the Degree Progress tab; failure to do so may result in removal from the major. All Eberly majors require that students have a 2.00 overall grade point average, but a few programs require a higher GPA. At the discretion of the department and the Dean, students with a GPA of 1.9 may be retained within their major. Students who have a GPA below a 1.9 are placed in the Bachelors of Integrated Studies (BIS) major until they bring their GPA to the desired 2.00. At that point, they can either go back to their original major, or switch to another major, either within or outside of the college. Students in the BIS major are advised in the Academic Affairs Office, where they can explore their major and career choices. This is a temporary placement, usually for one semester. While students are listed in the BIS program, they must remain in contact with their desired program adviser, who will place a note in DegreeWorks to attest the student's visit. The Eberly Director of Undergraduate Advising will remove the advising hold after students have also met with their desired program adviser.

### ACADEMIC SUSPENSION

After final grades are posted in fall and spring, the Registrar notifies students who have a deficient GPA (please check the Catalog ([http://catalog.wvu.edu/undergraduate/coursecredittermsclassification/#Suspension\\_Guid](http://catalog.wvu.edu/undergraduate/coursecredittermsclassification/#Suspension_Guid))).

### ACADEMIC SUSPENSION APPEALS

Students can file an Academic Suspension appeal by submitting a Suspension Appeal form, along with supporting documentation, to the Director of Undergraduate Advising. Please refer to the College website (<http://eberly.wvu.edu/students/current-students/probation-and-suspension-policy/>) for important deadline information. The appeals are heard by a committee of faculty.

### READMISSION AFTER SUSPENSION

Students who have been suspended need to reapply to the university. When they come back to WVU, they are placed on Academic Probation until their GPA reaches a 2.00. Students seeking readmission should consult the Eberly Office of Academic Affairs website, under "Student seeking Readmission."

## Graduation

### GRADUATION AND DIPLOMA APPLICATION

The semester of graduation, seniors will receive an email from the Registrar's Office to remind them to fill out a graduation application online through their MIX account. The application is usually available the second week of any given semester for graduation at the end of that term, and remains open for about 6 weeks.

#### IMPORTANT NOTES:

- No candidate can graduate without completing an application for graduation and diploma.
- If students' curriculum is incorrect in DegreeWorks, they should first submit a graduation application and then immediately email ECASUGFORMS@mail.wvu.edu to fill out the proper curriculum change forms.
- After submitting their application online, students will receive an email confirmation. Subsequently, they will receive a conditional approval email, or a denial notification. The conditional approval does not guarantee graduation.
- If students do not graduate on the date for which they initially applied, the graduation application is submitted automatically for up to three additional semesters.

### COMMENCEMENT CEREMONY

In addition, students who wish to participate in the Commencement Ceremony (May or December) should register on line through the University Graduation (<http://graduation.wvu.edu/>) website the semester of graduation. Participation in the Commencement Ceremony does not mean that a student will graduate and be eligible to receive a diploma.

Students may petition the Assistant Dean for Undergraduate Student Services and Programs to participate in the Commencement Ceremony prior to completion of their degree requirements if they are registered for their last six credit hours the following semester (Fall, Spring, Summer). For example, a student who will graduate in August and is registered for the last six credits during the summer term may petition the Assistant Dean for Undergraduate Student Services and Programs to participate in the May ceremony.

### Eberly Edge Program Learning Outcomes

- Evaluate reliability, validity, and scope, including assessing the role of technology in creation, analysis, representation, and accessibility of information.
- Demonstrate effective and civil communication in spoken and written forms that respond appropriately to audience, purpose, and context.
- Compare and contrast the outcomes of applying different ethical principles and frameworks to everyday life, learning, and workplace scenarios.
- Develop awareness of the impact cultural, economic, and social structures have on communities near home or around the world.
- Integrate diverse disciplinary knowledge bases to effectively understand and address complex and boundary spanning topics.
- Design ethical, data-driven solutions to local/global issues and effectively communicate them to relevant stakeholders as part of an interdisciplinary team.
- Integrate outside-the-classroom experiences and observations with academic studies to apply knowledge in complex situations.

### Degree Designation Learning Outcomes

#### BACHELOR OF ARTS (B.A.)

A primary mission of the Eberly College of Arts and Sciences is to promote full development of each student as an individual and as a member of society. Students completing a Bachelor of Arts degree in the Eberly College fulfill broad general education foundation requirements, Bachelor of Arts degree requirements, study of at least one discipline in depth, and complimentary coursework that spans disciplinary boundaries. The hallmark of an Arts and Sciences education is opportunity for students to craft programs of study that integrate interests and address aspirations through a combination of major and minor, or dual major, areas of study.

Bachelor of Arts degree programs in the Eberly College integrate

- Knowledge of central principles, practices, facts, concepts, theories, and disciplinary tools in a major area of concentration
- Skills in communication using a variety of channels including writing, speaking, reading, listening, and viewing
- Practice in analyzing and solving problems, recognizing ambiguities, proposing alternatives, drawing inferences, developing imaginative approaches, constructing predictions, and making reasoned decisions using appropriate information resources and analytical tools
- Study of a foreign language to attain an intermediate level of proficiency for interacting in a non-native language and culture
- Opportunities for defining relationships between the student's degree program and post-baccalaureate goals



## BACHELOR OF INTEGRATED STUDIES (B.I.S.)

The Bachelor of Integrated Studies allows flexible learning options with the integrative coursework, aligned with a student's future professional and academic goals and interests. It may also utilize credit for prior learning. The major focuses on communications and integrative skills that prepare graduates for future employment or continuing education.

The Bachelor of Integrated Studies degree program enables students to:

- Recognize integrative and applied learning, including synthesis across general and specialized studies.
- Connect experience that occurs outside the classroom with academic studies to broaden and deepen understanding to explore complex issues in original ways.
- Demonstrate the ability to understand and ask meaningful questions about complex topics, as well as evaluate multiple sources of knowledge relevant to complex topics.
- Develop intellectual and practical skills, including inquiry and analysis, critical and creative thinking, and written and oral communication as well as develop foundations and skills for lifelong learning.
- Cultivate flexible writing and oral presentation skills adaptable to a variety of contexts with a clear sense of purpose, audience, and conventions.

## BACHELOR OF MULTIDISCIPLINARY STUDIES (B.M.D.S.)

A primary mission of the Eberly College of Arts and Sciences is to promote full development of each student as an individual and as a member of society. Students completing a Bachelor of Multidisciplinary Studies degree in the Eberly College complete broad general education foundation requirements, MDS core requirements, and three academic minors that work together to achieve individual educational and/or career goals. The BMDS degree program does not limit students to courses of study in a particular college or school, but rather stresses the importance of breadth of knowledge and cross-disciplinary communication.

The Bachelor of Multidisciplinary Studies degree program in the Eberly College integrates

- Knowledge of and aptitude with principles, practices, facts, concepts, theories and tools in three minor areas of concentration
- Communication skills using a variety of channels including writing, speaking, reading, listening, and viewing
- Practices derived from specialized knowledge in individual disciplines to analyze problems from divergent perspectives, recognize ambiguities, propose alternatives, draw inferences, develop imaginative approaches, construct predictions, and make reasoned decisions using appropriate information resources and analytical tools
- Multidisciplinary techniques fostering students' ability to communicate strengths of their self-chosen course of study
- Opportunities for defining relationships between the student's degree program and post-baccalaureate goals

## BACHELOR OF SCIENCE (B.S.)

A primary mission of the Eberly College of Arts and Sciences is to promote full development of each student as an individual and as a member of society. Students completing a Bachelor of Science degree in the Eberly College fulfill broad general education foundation requirements, Bachelor of Science degree requirements, and study of at least one discipline in depth. The hallmark of an Arts and Sciences education is opportunity for students to craft programs of study that integrate interests and address aspirations through a combination of major and minor, or dual major, areas of study.

The Bachelor of Science degree programs in the Eberly College integrate

- Knowledge and skills of central principles, practices, facts, concepts, theories, and disciplinary tools in a major area of concentration
- Skills in communication using a variety of channels including writing, speaking, reading, listening, and viewing
- Practice in analyzing and solving problems, recognizing ambiguities, proposing alternatives, drawing inferences, developing imaginative approaches, constructing predictions, and making reasoned decisions using appropriate information resources and analytical tools
- Application of scientific principles and methods across three natural and/or computational science disciplines
- Opportunities for defining relationships between the student's degree program and post-baccalaureate goals

## BACHELOR OF SOCIAL WORK (B.S.W.)

The mission of the School of Social Work's B.S.W. program is to prepare social work practitioners who are dedicated to upholding the ethical standards of the social work profession. An important focus of the West Virginia University School of Social Work is our focus on practice in small towns and rural communities, including the well-being of older adults. Our mission emphasizes the importance of preparing social workers with the necessary knowledge, values, and skills to practice effectively at the micro, mezzo, and macro levels of intervention in settings consistent with our rural context. Students completing a Bachelor of Social Work degree complete broad general education foundation requirements and work within the School of Social Work that is designed:

- To prepare undergraduate students for professional, competent, entry-level generalist practice, with an emphasis on rural and small-town settings, through a curriculum including liberal arts and social work foundations; human behavior in the social environment; practice, policy, and assessment/research with individuals, families, groups, communities, and society

- To prepare students for practice with diverse, vulnerable, and oppressed populations and to further social and economic justice
- To prepare students to engage in effective practice that is responsive to changing the social context with an existing value base and ethical standards of the social work profession
- To provide a foundation to develop an identity as a professional social worker and conduct oneself accordingly

## REGENTS BACHELOR OF ARTS (R.B.A.)

West Virginia University offers the Regents Bachelor of Arts (R.B.A.) as an innovative degree program designed to meet the unique needs of adult learners and non-traditional students. Specifically, the R.B.A. provides a comprehensive general education and individualized curriculum designed to align with the needs of each student. The R.B.A. program is designed to be flexible and can be tailored toward goals/aspirations such as pursuing a graduate/professional degree, transitioning into a new career, increasing one's marketability within an established career, and/or fulfilling a life-long goal of completing a bachelor's degree. The R.B.A. program can be completed either on campus or online at one's own pace. Additionally, R.B.A. students may pursue any Minors (<http://catalog.wvu.edu/undergraduate/minors/#minorsofferedtext>) offered through West Virginia University or Areas of Emphasis unique to the R.B.A. program. Moreover, R.B.A. offers unique opportunities not available through traditional degree programs. The R.B.A. program offers F-Forgiveness (<https://rba.wvu.edu/degree-info/f-forgiveness-policy/>) to students if the failing grades are obtained four years or more prior to admission/readmission to the program. Additionally, eligible students may acquire college credit for professional, volunteer, and military experiences in select areas via the many credit for prior learning options (<https://rba.wvu.edu/credit-for-prior-learning/>) available through the R.B.A. program. Pursuing the R.B.A. program and utilizing the unique opportunities available through the program provides many students with a time efficient and cost effective avenue to obtain a Bachelor of Arts degree.

The Regents Bachelor of Arts degree program in the Eberly College enables students to:

- Develop foundational habits of academic life and cultural literacy; disciplinary ways of knowing and posing questions; conducting inquiry; making arguments; close reading, analysis, critical thinking; numerical analysis and scientific method; effective writing and speaking; academic research; systematic problem solving; rigorous academic study
- Develop and refine skills of Learning Goal 1; encounter and examine issues of multiculturalism, diversity, social justice, and citizenship; refines over-reaching area of emphasis
- Integrate learning; apply knowledge and skills to contemporary problems and ethical quandaries; self-reflective projects and narratives; connect past with future

## Accreditation

Forensic Biology, Forensic Chemistry and Forensic Examiner B.S. programs within the Eberly College of Arts and Sciences have specialized accreditation through the Forensic Science Education Programs Accreditation Commission of the American Academy of Forensic Science.

Social Work within the Eberly College of Arts and Sciences has specialized accreditation through the Council on Social Work Education.

The Certificate in Behavior Analysis within the Eberly College of Arts and Sciences is accredited by the Association for Behavior Analysis International.

## Certifications

Chemistry within the Eberly College of Arts and Sciences has specialized certification through the American Chemical Society.

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## ANTHROPOLOGY (ANTH)

### **ANTH 105. Introduction to Anthropology. 3 Hours.**

Essentials of human evolution and prehistory with a concentration on the varieties of languages and cultures found among peoples of the world.

### **ANTH 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

### **ANTH 252. Biological Anthropology. 3 Hours.**

Overview of human genetics, human diversity, human osteology, primate studies, and fossil evidence for human evolution.

### **ANTH 254. Cultural Anthropology. 3 Hours.**

Introduction to the history, methods, and current directions of cultural anthropology. Focus on living cultures across the world, encompassing the whole range of human activities. Consideration of identity, economy, politics, kinship, meaning, language, and inequality.

### **ANTH 258. Introduction to Archaeology. 3 Hours.**

Comprehensive introduction to the field of archaeology. Course investigates the methods and theories used by archaeologists to understand culture change through time, and the reconstruction of the past through material culture analysis.

### **ANTH 259. The Craft of Anthropology. 3 Hours.**

Orientation to the anthropological discipline. Focus on disciplinary ethics and building anthropological reading, writing, and research skills.

### **ANTH 349. Human Osteology. 3 Hours.**

Introduction to the anthropological study of the human skeletal system. Emphasis on the methods for identifying human remains (including identification of complete bones and important skeletal markers) and methods used to conduct a biological profile for an individual (including determination of age, sex, ancestry, and pathology/trauma estimation).

**ANTH 350. Latin American Culture. 3 Hours.**

Ethnographic analyses of the peoples, culture, history, and politics of Latin America, and its relation to the global processes. Consideration of popular cultures, political violence and impacts of colonialism, neocolonialism and globalization.

**ANTH 351. Anthropology of Appalachia. 3 Hours.**

Ethnographic analyses of the peoples, cultures, histories, and politics of Appalachia. Course explores Appalachian traditions and customs, regional and cultural identities and identity formation, the cultural construction of Appalachia, and localized experiences of inequality, diversity, oppression, and resistance.

**ANTH 352. Historical Archaeology. 3 Hours.**

Archaeology of European colonization and post-colonial material culture in North America since 1492. Course examines analytical techniques including documentary research, artifact analysis and field excavation while scrutinizing archeological interpretation and its connections to present constituencies.

**ANTH 354. Mesoamerican Archaeology. 3 Hours.**

Overview of the diverse environments, social organizations, and lives of people in prehispanic cultures; from early food foragers through the Olmec, Maya, Teotihuacan, Zapotec, and Aztec. Explores how we understand and apply the Mesoamerican past.

**ANTH 355. Cultural Resource Management. 3 Hours.**

Overview and evaluation of government-sponsored preservation and study of archaeological and historical resources in the U.S., emphasizing West Virginia. Considers attitudes/relationships between participants including descendant communities, looters, public and private sectors.

**ANTH 356. Ethnographic Field Methods. 1-6 Hours.**

PR: Consent. (May be repeated for a maximum of 6 credit hours.) The distinctive craft of data gathering in cultural anthropology. Development of skills in field methods and participant observation.

**ANTH 357. Archaeological Field School. 1-6 Hours.**

Practical experience with the recovery and scientific study of archaeological remains. Emphasizes site survey, excavation, and laboratory techniques. (May be repeated for a maximum of six credit hours if different field schools.)

**ANTH 358. Anthropology of Health and Illness. 3 Hours.**

Health and disease, diagnosis, and healing in cross-cultural perspective; analyses of social, cultural, political, and economic factors in modern and traditional medical systems.

**ANTH 359. Anthropological Thought. 3 Hours.**

Analyzes and critiques anthropology as a discipline through humanistic and scientific approaches drawn from archaeological, biological, linguistic, and cultural perspectives. Examines social and intellectual history, principal theories, methods, practices, and ethical questions at an advanced undergraduate level.

**ANTH 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ANTH 450. Archaeology of Ancient States. 3 Hours.**

Using case studies such as ancient Sumer, Egypt, Indus, China, Mesoamerica, the Andes, and North America, this course surveys the theories and debunks the myths surrounding the emergence (and collapse) of cities and complex societies.

**ANTH 451. Material Culture. 3 Hours.**

Examines physical aspects of culture, including human-made and natural objects and spaces. Applies an interdisciplinary perspective that is rooted in archaeology and cultural anthropology and draws on a number of methodological and theoretical approaches.

**ANTH 457. Social Movements. 3 Hours.**

Ethnographic approaches to the study of power, politics, and social change in the contemporary world. Focuses on past and present injustices, why ordinary people mobilize politically for change, and how to study these movements.

**ANTH 458. Environmental Anthropology. 3 Hours.**

Critical ethnographic analysis of environmental problems, activism, and potential solutions, including issues related to biodiversity conservation, sustainability, natural disasters, industrial contamination, environmental knowledge, risk perception, and nature/culture dynamics among Western and non-Western peoples.

**ANTH 488. The Capstone Experience. 3 Hours.**

PR: ANTH 359. Senior capstone seminar in which students articulate how anthropologists come to an understanding of the social world and the human condition, and the significance of that knowledge. Students conduct in-depth research projects under the guidance of the course instructor, oriented to course-specific substantive emphases and ways of engaging with theory and evidence.

**ANTH 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**ANTH 491. Professional Field Experience. 1-18 Hours.**

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.

**ANTH 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ANTH 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**ANTH 497. Research. 1-6 Hours.**

Independent research projects.

**ARABIC (ARBC)****ARBC 101. Elementary Modern Standard Arabic 1. 3 Hours.****ARBC 102. Elementary Modern Standard Arabic 2. 3 Hours.**

PR: ARBC 101. Continuation of ARBC 101.

**ARBC 203. Intermediate Modern Standard Arabic 1. 3 Hours.**

PR: ARBC 102 or equiv. Continuation of ARBC 102.

**ARBC 204. Intermediate Modern Standard Arabic 2. 3 Hours.**

PR: ARBC 203 or consent. Continuation of ARBC 203.

**ARBC 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ARBC 298. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**ARBC 303. Arabic Conversation 1. 3 Hours.**

PR: ARBC 203 or consent. Advanced communication course in Arabic. The course targets all language skills (speaking, listening, reading, and writing) with a major focus on developing communication skills in Arabic to handle a variety of social situations.

**ARBC 304. Arabic Conversation 2. 3 Hours.**

PR: ARBC 204. A lecture and discussion course designed to build communicative abilities and conversational fluency in Arabic at the intermediate-advanced level. Particular emphasis on writing descriptive and narrative short essays, reading and discussing authentic texts, and presenting information about a variety of topics in Arabic.

**ARBC 305. Advanced Arabic Structure. 3 Hours.**

PR: ARBC 204. A lecture and discussion course designed to develop communicative abilities in Arabic at the intermediate-advanced level. Particular emphasis on reading authentic texts and reviewing Arabic structures; integrating grammar and vocabulary practices; and reading, discussing, and writing short essays about a variety of texts that tackle social and cultural issues related to the Arab world.

**ARBC 306. Readings in Arabic. 3 Hours.**

PR: ARBC 204. A lecture and discussion course designed to develop knowledge of Arabic structures and vocabulary practices through reading, writing, and translating linguistically relevant authentic texts from Arabic media resources and Al-Kitaab at the intermediate-advanced level in Modern Standard Arabic.

**ARBC 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ARBC 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**ARBC 491. Professional Field Experience. 1-18 Hours.**

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.

**ARBC 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**ARBC 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ARBC 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**ARBC 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**ARBC 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**ARBC 497. Research. 1-6 Hours.**

Independent research projects.

**ARBC 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## AFRICAN/AMERICAN STUDIES (ASP)

### **ASP 220. Introduction to Africana Studies. 3 Hours.**

An interdisciplinary introduction to the histories, economics, cultural and artistic heritages, political and social experiences of Africans and African-Americans; focusing on the relationships between the two experiences.

### **ASP 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

### **ASP 298. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

### **ASP 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

### **ASP 420. Seminar Africana Studies. 3 Hours.**

PR: ASP 220. Focus on selected aspects of Africana experience. Required for completion of minor in Africana Studies.

### **ASP 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

### **ASP 491. Professional Field Experience. 1-18 Hours.**

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.

### **ASP 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

### **ASP 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

### **ASP 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

### **ASP 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

### **ASP 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

### **ASP 497. Research. 1-6 Hours.**

Independent research projects.

### **ASP 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

## ASTRONOMY (ASTR)

### **ASTR 106. Descriptive Astronomy. 3 Hours.**

The celestial sphere, star time, solar time, Kepler's laws, H-R diagram and modern developments. No sophisticated mathematics used; only simple geometrical arguments employed.

### **ASTR 106L. Descriptive Astronomy Laboratory. 1 Hour.**

PR or CONC: ASTR 106. Introduction to modern astronomical techniques and practices through research-quality astronomical data collection and analysis, computer simulation, and hands-on activities. Includes study of objects in our solar system, in the Milky Way, and located much farther away in the vast reaches of space. Students engage in authentic scientific practices while exploring the universe.

### **ASTR 110. Explosions in Space. 3 Hours.**

PR: MATH 124 or higher, or appropriate score on MATH placement test. Topics covered include: special and general relativity, supernovae, neutron stars, black holes, wormholes, time travel and gamma-ray bursts.

### **ASTR 115. Honors Relativity. 1 Hour.**

PR: MATH 124 or higher or appropriate score on MATH placement test. Exploration of gravity as the geometry of four-dimensional space time; the legacy of Einstein.

### **ASTR 250. Pulsar Search Collaboratory. 3 Hours.**

PR: Consent. Online data analysis of Green Bank Telescope (GBT) data as part of the PSC effort to discover pulsars and will acquaint students with the scientific method, the power of information technology, and basic astronomical concepts. It is open to high-school students and work will be done largely remotely.

### **ASTR 290. Teaching Practicum. 1-3 Hours.**

### **ASTR 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.



**ASTR 298. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**ASTR 368. Astrophysics 2. 3 Hours.**

PR: ASTR 367. Continuation of ASTR 367. Physical principles are applied to the properties and evolution of the Milky Way and galaxies and to the structure and evolution of the solar system. Physical properties of the universe are examined.

**ASTR 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ASTR 467. Stellar Structure and Evolution. 3 Hours.**

Comprehensive discussion of birth, life cycle and end products of stars. Topics covered include main-sequence evolution, giant stars, white dwarfs, supernovae neutron stars and black holes.

**ASTR 469. Observational Astronomy. 3 Hours.**

PR: PHYS 314. Laboratory course consisting of three detailed projects which aim to acquaint students with current techniques for astronomy data analysis and interpretation across the electromagnetic spectrum.

**ASTR 470. General Relativity. 3 Hours.**

PR: PHYS 314 and PHYS 331. Innovative 'physics-first' introduction to Einstein's relativistic theory of gravity. Topics covered include special relativity, curved space time, spherical stars, gravitational collapse, black holes, gravitational waves and cosmology.

**ASTR 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**ASTR 491. Professional Field Experience. 1-18 Hours.**

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.

**ASTR 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**ASTR 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ASTR 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**ASTR 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**ASTR 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**ASTR 497. Research. 1-6 Hours.**

Independent research projects.

**ASTR 498. Honors. 1-3 Hours.**

PR: Students in honors program and consent by the honors director. Independent reading, study, or research.

**BIOLOGY (BIOL)****BIOL 101. General Biology 1. 3 Hours.**

Introductory course in biology: cellular, organismal, and population genetics, including reproduction, growth and development, and evolution.

**BIOL 101L. General Biology 1 Laboratory. 1 Hour.**

PR or CONC: BIOL 101. Experiments in biology: genetics and evolution; reproduction, growth, and development of cells, organisms, and populations.

**BIOL 102. General Biology 2. 3 Hours.**

Introductory biology: energetics and physiology of cells, organisms, and populations, including regulation and control of multicellular organisms.

**BIOL 102L. General Biology 2 Laboratory. 1 Hour.**

PR or CONC: BIOL 102. Experiments in biology: materials exchange, actions of enzymes, photosynthesis and respiration, and physiology of organisms.

**BIOL 105. Environmental Biology. 3 Hours.**

Population growth and human impacts on the environment, including ecosystem destruction, biological diversity, pollution, and global climate change are explored to obtain the concepts necessary to understand complex environmental issues of our time. (Intended for non-biology majors.).

**BIOL 105L. Environmental Biology Laboratory. 1 Hour.**

PR or CONC: BIOL 105. Field and laboratory exercises explore fundamental ecological concepts and environmental problems, such as biodiversity, pollution, and natural resource utilization.

**BIOL 107. Biotechnology and Society. 3 Hours.**

An overview of the use of biotechnology to solve agricultural, medical, and environmental problems. Bioethical concerns and societal impacts of the use of the technologies will be discussed.

**BIOL 108. Drugs and the Body. 3 Hours.**

An overview of how common prescription, street and over-the-counter drugs alter body functions. How the body absorbs and metabolizes various drugs, drug interactions, and the biology of addiction will also be presented.

**BIOL 113. Inquiry and Reasoning for Biologists. 1 Hour.**

PR or CONC: BIOL 115 or consent. Problem-based and team-based learning approach using topics from BIOL 115 to help students build foundational knowledge in biological principles as well as develop and practice critical thinking skills essential for success as a science major.

**BIOL 115. Principles of Biology. 3 Hours.**

PR or CONC: (BIOL 115L or BIOL 116 or BIOL 119L) with a minimum grade of C-. Presentation of basic principles of modern biology. First in a four-course, integrated sequence required of biology majors. Topics include ecology and evolution, organismal biology, and cellular/molecular biology.

**BIOL 115L. Principles of Biology Laboratory. 1 Hour.**

PR or CONC: BIOL 115 with a minimum grade of C-. Emphasizes proper understanding and use of the scientific method to design and perform biological experiments. Discipline-specific communication techniques, including scientific writing, also emphasized.

**BIOL 117. Introductory Physiology. 3 Hours.**

PR: ((BIOL 101 and BIOL 102 and (BIOL 101L or BIOL 103) and (BIOL 102L or BIOL 104)) or ((BIOL 115 and (BIOL 115L or BIOL 116 or BIOL 119L)) with a minimum grade of C- in all and PR or CONC: BIOL 117L or BIOL 118 or BIOL 120L. Continuation of BIOL 115. The diversity of reproductive, developmental, functional, and integrative mechanisms in plants and animals.

**BIOL 117L. Introductory Physiology Laboratory. 1 Hour.**

PR: ((BIOL 101 and BIOL 102 and (BIOL 101L or BIOL 103) and (BIOL 102L or BIOL 104)) or ((BIOL 115 and (BIOL 115L or BIOL 116)) and PR or CONC: BIOL 117. Continuation of BIOL 115 and 115L. Utilizes themes from plant and animal physiology to enhance students' skills when applying the scientific method. Emphasis is placed on experimental design and discipline-specific communication methods.

**BIOL 119L. Foundations Inquiry Lab 1. 1 Hour.**

PR or CONC: BIOL 115 with a minimum grade of C-. Course-based undergraduate research experiences for Biology majors First in a multi-course inquiry lab series for biologists.

**BIOL 120L. Foundations Inquiry Lab 2. 1 Hour.**

PR: BIOL 115 and (BIOL 115L or BIOL 119L) with a minimum grade of C- in each and PR or CONC: BIOL 117 with a minimum grade of C-. Course-based undergraduate research experience for Biology majors. Second in a multi-course inquiry lab series for biologists.

**BIOL 122. Human Sexuality. 3 Hours.**

A study of biological, behavioral and societal aspects of sexuality. Issues considered include changing fecundity, social-legal implications, sex roles, sexually transmitted diseases, populations, erotica, aging, dysfunctions, and decision-making skills for sex related issues.

**BIOL 191. First-Year Seminar. 3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**BIOL 219. Cellular and Molecular Biology. 3 Hours.**

PR: (BIOL 117 and (BIOL 117L or BIOL 118 or BIOL 120L or BIOL 240) and ((CHEM 115 and CHEM 115L) or (CHEM 111 and CHEM 111L and CHEM 112 and CHEM112L)) with a minimum grade of C- in all and PR or CONC: BIOL 219L or BIOL 220L or BIOL 222L. Third course in the core curriculum required for biology-related majors. Expands on topics from BIOL 115/117, especially with regard to cell chemistry, bioenergetics, cell physiology and gene expression.

**BIOL 219L. Cellular & Molecular Biology Laboratory. 1 Hour.**

PR: BIOL 117 and (BIOL 117L or BIOL 118 or BIOL 120L or BIOL 240) and ((CHEM 115 and CHEM 115L) or (CHEM 111 and CHEM 111L and CHEM 112 and CHEM 112L)) with a minimum grade of C- in all and PR or CONC: BIOL 219. BIOL 219L is the laboratory that accompanies BIOL 219 (Cellular & Molecular Biology).

**BIOL 221. Ecology and Evolution. 3 Hours.**

PR: BIOL 117 and (BIOL 117L or BIOL 118 or BIOL 120L) with a minimum grade of C- in all. Basic concepts in evolution and ecology including Darwin's theory of natural selection, modern population genetics, speciation, population growth and regulation, demography, community ecology, ecosystem dynamics, and human ecology.

**BIOL 222L. Intermediate Inquiry Lab. 2 Hours.**

PR: BIOL 117 and (BIOL 117L or BIOL 120L) with a minimum grade of C- in each and PR or CONC: BIOL 219. Course-based undergraduate research experience for Biology majors. Third in an integrated, multi-course lab series for biologists. Topics and experiments will vary by year.

**BIOL 223. Quantitative Biology. 3 Hours.**

PR: MATH 124 or higher. Practical skills to perform data analysis in the biological sciences and present the results. Theoretical foundations to understand the quantitative basis of the analysis procedures most commonly used in biology.

**BIOL 235. Human Physiology. 3 Hours.**

PR: WVU sections require (BIOL 101 and BIOL 101L and BIOL 102 and BIOL 102L) or BIOL 115, WVUIT sections require (BIOL 101 and BIOL 101L and BIOL 102 and BIOL 102L) or BIOL 111. (Intended for non-biology majors.) An introductory course in the function of the human.

**BIOL 236. Human Physiology: Quantitative Laboratory. 1 Hour.**

PR: MATH 156 and CHEM 116 and (BIOL 115 or (BIOL 101 and BIOL 102 and BIOL 103 and BIOL 104) or PR or CONC: BIOL 235). Optional lab for BIOL 235 incorporating engineering concepts, such as mass and energy balances, circuit theory, and chemical kinetics to quantify and help understand many aspects of human physiology.

**BIOL 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**BIOL 298. Honors. 1-3 Hours.**

PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

**BIOL 301. History of Biology. 3 Hours.**

PR: (BIOL 101 and BIOL 103 and BIOL 102 and BIOL 104) or BIOL 115. History of development of biological knowledge with philosophical and social backgrounds.

**BIOL 302. Biometry. 3 Hours.**

PR: (BIOL 223 or STAT 211) with a minimum grade of C-. Application of quantitative methods and statistics to biological data with emphasis on hands-on hypothesis construction, experimental design, data analysis and biological interpretation of statistical results.

**BIOL 310. Advanced Cellular/Molecular Biology. 3 Hours.**

PR: BIOL 219 and (BIOL 219L or BIOL 220). Advanced study of molecular mechanisms underlying fundamental cellular processes.

**BIOL 310L. Advanced Cellular/Molecular Biology Laboratory. 2 Hours.**

PR or CONC: BIOL 310. Experimental approaches to the study of cellular systems.

**BIOL 312. Introduction to Virology. 3 Hours.**

PR: BIOL 219. Survey of viruses, their modes of replication and spread, and the medical and economic significance of viral diseases in public health.

**BIOL 313. Molecular Basis of Cellular Growth. 3 Hours.**

PR: BIOL 219. Study of the integration of internal and external influences as they regulate the division, growth, and differentiation of cells. Topics include hormones as cell effectors, cancer, and stem cells.

**BIOL 315. Communicating Natural Science. 3 Hours.**

PR: BIOL 219 or BIOL 221. Teaches students to effectively communicate about scientific discoveries and scientific issues in both written and oral forms to professional scientists, the public, the media and politicians. Students will learn to consider the knowledge, biases and goals of their intended audience to communicate thoughtfully and effectively.

**BIOL 316. Developmental Biology. 3 Hours.**

PR: BIOL 219 and (BIOL 219L or BIOL 220). A molecular genetic analysis of the mechanisms by which multicellular organisms develop from single cells.

**BIOL 316L. Developmental Biology Laboratory. 1 Hour.**

PR: BIOL 219 and (BIOL 219L or BIOL 220) and PR or CONC: BIOL 316. Experimental approaches to the genetic analysis of the mechanisms by which multicellular organisms develop from single cells.

**BIOL 318. Writing Appalachian Ecology. 3 Hours.**

This course encourages students to think about the long-term future of our planet. What could our world be like in 200 years? How will current environmental problems change the future? How will relationships with the natural world change? Students address questions like these in creative nonfiction essays they write about research being conducted at the Fernow Experimental Forest in WV.

**BIOL 320. The Total Science Experience: Genomics. 3 Hours.**

PR: BIOL 219. Biological research experience incorporating critical skills of being a research scientist, including writing grant proposals, manuscripts, and materials for presentation of results in a public forum. Students conceive, design, propose, execute, analyze, and report an experiment with a genomics focus. Fulfills the capstone requirement in Biology and provides a realistic exposure to joys and challenges of performing scientific research.

**BIOL 321. Total Science Experience Lab. 3 Hours.**

PR or CONC: BIOL 221. Biological research experience incorporating diverse learning experiences that take place in the process of being a research scientist; including writing grant proposals, manuscripts, and presentation of results in a public forum.

**BIOL 323L. Advanced Inquiry Lab. 2 Hours.**

PR: BIOL 221 or (BIOL 219 and (219L or 222L)) with a minimum grade of C- in each. Inquiry Labs are course-based undergraduate research experiences. This is the fourth in an integrated, multi-course series of labs for biologists.

**BIOL 324. Molecular Genetics. 3 Hours.**

PR: BIOL 219 and (BIOL 219L or BIOL 220). Theoretical and practical knowledge in genetics as a field of study and as an approach for investigating biological problems.

**BIOL 324L. Molecular Genetics Laboratory. 1 Hour.**

PR: BIOL 219 and (BIOL 219L or BIOL 220) and PR or CONC: BIOL 324. The laboratory is a logical sequence of experiments providing actual research experience in molecular genetics.

**BIOL 327. Professional Development. 1 Hour.**

PR: BIOL 219. This course provides an overview of opportunities for students graduating with degrees in the biological sciences. An assessment test will help identify strengths and weaknesses within the field.

**BIOL 335. Cell Physiology. 3 Hours.**

PR: BIOL 219. Emphasis on the unity and diversity of cells; membrane structure and function; and the role that intracellular compartments, cytoskeleton, and extracellular matrix play in cell physiology.

**BIOL 338. Behavioral Ecology. 3 Hours.**

PR: BIOL 112 or BIOL 221. Consideration of the influences of environmental factors on short-and long-term regulation, control, and evolution of the behavior of animals. Students on the Morgantown campus will be required to complete BIOL 221.

**BIOL 339. Animal Communication & Behavior. 3 Hours.**

PR: (BIOL 221 or BIOL 348) with a minimum grade of C-. Animal behavior includes solitary activities (finding food) and social interactions. Communication mediates most interactions between individuals, and the brain dedicates much of its resources to generating and processing these signals. This course will cover the main aspects of animal behavior, from solitary activities such as feeding to social activities such as cooperation.

**BIOL 340. Invertebrate Zoology. 3 Hours.**

PR: BIOL 221. The evolution of animals without vertebral columns.

**BIOL 341. Ichthyology. 4 Hours.**

PR: Corequisite of BIOL 341L. Study of the internal and external structure of fishes, their systematic and ecological relationships, and their distribution in time and space. (Dissection kit required.).

**BIOL 341L. Ichthyology Laboratory. 0 Hours.**

PR: Corequisite of BIOL 341. Ichthyology - BIOL 341 Laboratory.

**BIOL 344. Advanced Human Physiology. 3 Hours.**

PR: BIOL 219 and (BIOL 219L or BIOL 220) with a minimum grade of C- and PR or CONC: BIOL 344L. Explores the cellular and integrative features of the human body and its systems. We will cover topics from the level of the cell all the way through to the organ system and how these systems interact with one another. Designed for students interested in health professions and will have a heavy focus on health care.

**BIOL 344L. Advanced Human Physiology Laboratory. 1 Hour.**

PR: BIOL 219 and (BIOL 219L or BIOL 220) with a minimum grade of C- and PR or CONC: BIOL 344. Laboratory course that will focus on the detrimental and beneficial impact of psychological stress on human systems. Students will explore virtual manipulation of physiological systems at the cellular system, the intersection of social justice, psychological stress, and physiological experimentation, and will allow you to track your own stress and its impacts on your physiology by designing a semester long experiment.

**BIOL 345. Human Anatomy. 3 Hours.**

PR: BIOL 219 and (BIOL 219L or BIOL 220) and PR or CONC: (BIOL 345L or BIOL 346) with a minimum grade of C- in all. Study of human morphology, with a focus on anatomical function and medical applications. Lecture integrates integument, skeletal, muscular, cardiovascular, digestive, urogenital, respiratory, and nervous system anatomy. The co-requisite lab parallels these lecture topics. This course is intended for students interested in the human health fields.

**BIOL 345L. Human Anatomy Laboratory. 2 Hours.**

PR: BIOL 219 and (BIOL 219L or BIOL 220) and PR or CONC: BIOL 345 with a minimum grade of C- in all. This lab course meets twice a week and parallels the discussion of anatomy and function in BIOL 345 lecture. Students use microscopes to identify integument anatomy, examine human bones in order to name bones and relevant bone landmarks. Students collaborate with a partner to fully dissect a cat, sheep brain, pig heart and cow eye.

**BIOL 348. Neuroscience 1. 3 Hours.**

PR: WVU sections require BIOL 219 with a minimum grade of C-, WVUIT sections require BIOL 112. An introduction to neuroscience, including basic neuroanatomical neurophysiology, and the relationship between the central nervous system, physiology, and behavior.

**BIOL 349. Neuroscience 2. 3 Hours.**

PR: BIOL 348. An introductory systems level course on organization of the nervous system, from an evolutionary to a clinical perspective. Topics include development and functional organization of sensory, motor, autonomic and cognitive systems. The evolutionary history and human health concerns associated with these systems will be addressed, through lecture, discussion, and readings in the primary literature.

**BIOL 350. Plant Physiology. 4 Hours.**

PR: (BIOL 117 and (BIOL 117L or BIOL 118) and CHEM 116 and CHEM 116L) or (CHEM 112 and CHEM 112L and PLSC 206) and Coreq: BIOL 350L. Physiochemical processes of plants.

**BIOL 350L. Plant Physiology Laboratory. 0 Hours.**

PR: Corequisite of BIOL 350. Plant Physiology - BIOL 350 Laboratory.

**BIOL 353L. Flora of West Virginia Laboratory. 3 Hours.**

PR: (BIOL 101 and BIOL 101L and BIOL 102 or BIOL 102L) or (BIOL 115 and BIOL 115L) or GEOG 307. Identification of local woody and herbaceous seed plants, with emphasis on common native and introduced species. Conducted primarily through field trips to nearby areas with the use of dichotomous keys to determine the scientific names of observed specimens.

**BIOL 355. Understanding Climate Change. 3 Hours.**

Fundamental understanding of the causes, consequences, and challenges of human-caused climate change. Provides students with both intuitive and quantitative understanding of the topic through lectures, readings, videos, demonstrations, homework exercises, writing assignments, and computer simulation models.

**BIOL 361. Plant Ecology. 4 Hours.**

PR: BIOL 221 and Coreq: BIOL 361L. Introduction to the four divisions of plant ecology, including physiological ecology, population ecology, community ecology and ecosystem ecology.

**BIOL 361L. Plant Ecology Laboratory. 0 Hours.**

PR: Corequisite of BIOL 361. Plant Ecology - BIOL 361 Laboratory.

**BIOL 363. Plant Geography. 3 Hours.**

PR: BIOL 221. World-wide distribution patterns of plants and factors related to these distributions, including dispersal. Limiting factors, climate, isolation, evolutionary history, plate tectonics, pleistocene glaciations, and human activities. Plant communities and soils of polar, temperate, and tropical biomes are discussed.

**BIOL 365. Conservation Biology. 3 Hours.**

PR: BIOL 221 or WMAN 313 and Coreq: BIOL 365L. Review of literature, research, and application of topics including biodiversity, endangered species, population biology, extinction, invasive species, conservation, restoration, and sustainability.

**BIOL 365L. Conservation Biology Laboratory. 0 Hours.**

PR: Corequisite of BIOL 365. Conservation Biology - BIOL 365 Laboratory.

**BIOL 376L. Research Methods Laboratory. 3 Hours.**

PR or CONC: BIOL 221. Introduction to the tools and mathematics that scientists use to solve scientific problems. Mathematical modeling, experimental design, hypothesis formulation, data collection, use of statistics, reading and evaluating the scientific literature, writing and reviewing scientific papers, and oral presentation of scientific research.

**BIOL 386. Undergraduate Research. 1-4 Hours.**

Individual laboratory or field experiments supervised by a faculty member.

**BIOL 387. Experimental Design & Communication 1. 1 Hour.**

PR: BIOL 327 with a minimum grade of C-. The second course in a three-course series providing professional development to Biology majors. This course focuses on proposal writing, advanced experimental design, critiques of scientific literature/ideas, and professional communication to non-scientific audiences.

**BIOL 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**BIOL 409. Biochemical Basis of Therapeutics. 3 Hours.**

PR: BIOL 219. This course explores the process of drug discovery and development. The topics emphasized include the biological factors that determine success, failure, or limitation of therapeutics. Other topics include, specific therapeutic areas and regulation.

**BIOL 410. Cell and Molecular Biology Methods. 3 Hours.**

PR: BIOL 219. Introduction to the theory, application, ethic and economics of biotechnologies.

**BIOL 411L. Introduction to Recombinant DNA Laboratory. 4 Hours.**

PR: BIOL 219 and (BIOL 219L or BIOL 220). Introduction to basic principles and techniques of recombinant DNA technology. Includes molecular cloning, isolation of plasmid DNA, agarose/acrylamide gel electrophoresis, restriction enzyme mapping, nucleic acid hybridization, and DNA sequencing.

**BIOL 413. Molecular Endocrinology. 3 Hours.**

PR: BIOL 219. Hormonal action is discussed at the cellular and molecular levels. Topics include hormone production and regulation, receptor kinetics and activation, and receptor output.

**BIOL 415. Epigenetics. 3 Hours.**

PR: BIOL 219 or consent. Explores the molecular mechanisms, phenotypic phenomena and current applications of epigenetics and the study of how genetic information is used and maintained.

**BIOL 418. Medical Genetics. 3 Hours.**

PR: BIOL 219. The use of genetic principles to uncover biological mechanisms of both inherited and infectious diseases. The role of the human genome. The evolution of genetic diseases and the impact on human populations. Genetic medicine and current medical treatments.

**BIOL 420. Genomics. 3 Hours.**

PR: BIOL 219. Advanced elective examining biology and evolution on a genome-wide scale. Topics include fields of study and methods of DNA sequence acquisition and annotation, including exploration of the human genome and its contribution to disease discovery.

**BIOL 422. Current Topics in Genome Biology. 1 Hour.**

PR: BIOL 219. Exploration of modern topics in genomics research through interactive discussion of current literature. Students learn approaches to critical evaluation of manuscripts while exploring current research in this rapidly growing field. The course is organized around student-led discussions of manuscripts selected by the class. Undergraduate students are paired with graduate students to facilitate interpretation of complex material.



**BIOL 423. Biochemistry of Nucleic Acids and Proteins. 3 Hours.**

PR: AGBI 410 or equivalent. Focuses on the biochemistry of proteins and nucleic acids, with an emphasis on application of advanced knowledge to contemporary problems in cell biology, neuroscience, and immunology. Develops critical thinking, predictive, and problem-solving abilities that prepare students for health-related professional/graduate schools and the biotech industry.

**BIOL 423L. Biochemistry of Nucleic Acids and Proteins Laboratory. 2 Hours.**

PR: AGBI 410 and PR or CONC: BIOL 423. Advanced biochemistry laboratory. Research and hypothesis design, manipulation of DNA and proteins, use of biochemical techniques to express protein and analyze function.

**BIOL 424. Protein Structure and Function. 4 Hours.**

PR: BIOL 219 and (CHEM 231 or CHEM 233). Explores fundamentals of the protein structure; methods of structure determination; features of globular, membrane, and fibrous proteins; and approaches to protein classification.

**BIOL 425. Developmental Genetics. 3 Hours.**

PR: BIOL 219. This course covers the mechanisms by which genetics instructs the process of development. The complex interactions between cells, the environment, and the genome are presented.

**BIOL 426. Molecular Biology of Cancer. 3 Hours.**

PR: BIOL 219. Exploration of molecular pathways leading to the development of cancer with emphasis on gene expression, cell cycle regulation, and signaling pathways targeted in conventional therapies.

**BIOL 430. Bioinformatics. 3 Hours.**

PR: BIOL 219 or Consent. An introduction to algorithms and tools for analysis of genetic and genomic data in an evolutionary context.

**BIOL 436. Comparative Animal Physiology. 3 Hours.**

PR: BIOL 219 with a minimum grade of C-. In-depth, current treatment of physiological principles which operate at various levels of biological organization in animals of diverse taxonomic relationships. Understanding is developed from background lectures and student analyses in discussion sessions of research literature.

**BIOL 438. Animal Behavior. 3 Hours.**

PR: BIOL 221. Introduction to animal behavior (ethology) emphasizing the ecology and evolution of individual and social behaviors. Laboratory includes independent investigation of behavioral phenomena. (Offered in even numbered years.).

**BIOL 439. Neuroethology. 3 Hours.**

PR: BIOL 348 with a minimum grade of C-. Explores the way sensory systems process information to mediate behavior in a wide variety of animals in order to understand similarities and differences in neural mechanisms.

**BIOL 440. Comparative Anatomy. 4 Hours.**

PR: WVU sections require BIOL 219 and BIOL 221 or consent, WVUIT sections require BIOL 112. A functional and evolutionary study of vertebrate structure. (Dissection kit required.).

**BIOL 448. Plant-Microbial Interactions. 3 Hours.**

PR: BIOL 221. An exploration of how dynamic linkages between plants and soil microbes shape biological function at the organismal, ecosystem, and global scales.

**BIOL 450. Plant Systematics. 4 Hours.**

PR: BIOL 117 and (BIOL 117L or BIOL 118) and Coreq: BIOL 450L. Study of the taxonomy of flowering plants worldwide and related topics in angiosperm classification and evolution. Laboratories emphasize characteristics of selected families of monocotyledons and dicotyledons using living and herbarium material.

**BIOL 450L. Plant Systematics Laboratory. 0 Hours.**

PR: Corequisite of BIOL 450. Plant Systematics - BIOL 450 Laboratory.

**BIOL 453. Molecular Basis of Disease. 3 Hours.**

PR: BIOL 219. Examine medical, ethical, and legal/regulatory issues emerging from the Human Genome Project and its applications to personalized medicine.

**BIOL 454. Immunology. 3 Hours.**

PR: WVU sections require BIOL 219, WVUIT sections require BIOL 111. Explores the fundamental principles and practices of immunology including how the immune system is organized, how it functions to keep us healthy, and how it can cause allergies and autoimmune disease.

**BIOL 455. Evolution of Infectious Diseases. 3 Hours.**

PR: BIOL 221. The application of phylogenetics, microbiology, immunology, and epidemiology towards understanding the evolution of infectious diseases. Students will develop a fundamental understanding of the significance of evolution and ecology in infectious disease emergence and control.

**BIOL 456. Microbial Symbiosis. 3 Hours.**

PR: BIOL 221. An understanding of the significance of microbial symbioses towards ecological and health processes will be developed. Molecular techniques used towards identifying the composition and functions of microbial communities will be discussed. (Also listed as BIOL 615.).

**BIOL 457. Ecology of Parasites. 3 Hours.**

PR: BIOL 219 and BIOL 220. An introduction to the wide diversity of evolved relationships between parasites and their hosts. This course incorporates topics such as gene regulation, cell signaling, animal physiology, and evolution into a complete picture of host/parasite interactions.



**BIOL 461. Principles of Evolution. 3 Hours.**

PR: BIOL 221. Introduction to the study of evolution, including genetics of evolutionary change, speciation and adaptation molecular evolution, the history of life, extinction, co-evolution and the origins of humans.

**BIOL 462. Ecosystem Models. 3 Hours.**

PR: BIOL 221. Students will gain an understanding of the theory and mechanics behind ecosystem model, including models that predict soil decomposition and photosynthesis, ecosystem and terrestrial biosphere models. Students will also learn basic coding behind these models.

**BIOL 463. Global Ecology. 3 Hours.**

PR: BIOL 221 or GEOG 307. The Earth viewed as a changing biogeochemical system. Topics include the structure, composition and dynamics of the ecosphere, nutrient cycles, changing atmospheric composition, climate change, ozone depletion, land-use change, biological invasions, and changes in biodiversity.

**BIOL 464. Population and Quantitative Genetics. 3 Hours.**

PR: BIOL 221 and Coreq: BIOL 464L. Relationship of gene and genotype frequencies in populations of diploid organisms and the effects of mutation, selection, and non-random mating in relation to single gene pairs. Application of these concepts to multigenic inheritance of quantitative traits.

**BIOL 464L. Population Genetics Laboratory. 0 Hours.**

PR: Corequisite of BIOL 464. Population Genetics - BIOL 464 Laboratory.

**BIOL 472. Neurodevelopmental Disorders. 3 Hours.**

PR: BIOL 348 with a minimum grade of C-. Investigation of gene-environment interactions in the context of neurodevelopmental disorders. Students will gain a deeper understanding of how molecular and cellular level disruptions lead to variation in the display, severity, and occurrence of these disorders. Further, emphasis will be placed on interpreting, presenting, and discussing past and current research.

**BIOL 474. Neurogenetics and Behavior. 3 Hours.**

PR: BIOL 219 with a minimum grade of C-. Covers the principles and techniques that define the field of neurogenetics. Analyzes the development and function of the nervous system at cellular and molecular levels. Particular emphasis placed on genetic and environmental factors that contribute to human neurological disorders and the study of how genes control behavior.

**BIOL 475. Neurobiological Diseases. 3 Hours.**

PR or CONC: BIOL 348 with a minimum grade of C-. Physiological mechanisms of neurobiological diseases. Impact of neurobiological diseases on society, standard and experimental treatments and current research.

**BIOL 476. Computational Neuroscience. 4 Hours.**

PR: BIOL 348 with a minimum grade of C- and Coreq: BIOL 476L. Tools and concepts used to probe and characterize the dynamics of neurons, neural networks and neural coding mechanisms. Lectures introducing concepts and discussion sessions focusing on current research literature complement computer laboratories where the student learns programming skills, analytical tools and neural modeling methods used in computational neuroscience research.

**BIOL 476L. Computational Neuroscience Laboratory. 0 Hours.**

PR: BIOL 348 with a minimum grade of C- and Coreq: BIOL 476. Computational Neuroscience - BIOL 476 Laboratory.

**BIOL 477. Evolution of the Human Brain. 3 Hours.**

PR: BIOL 348 with a minimum grade of C-. Origin and evolution of the central nervous system, focusing on developmental and genetic mechanisms underlying structural modifications that serve as the basis for the evolution of animal behavior.

**BIOL 478. Sensory Neural Systems and Behavior. 3 Hours.**

PR: BIOL 348 with a minimum grade of C-. Exploration of how brains acquire information about the external world and process this information to produce sensory perceptions. Students gain a deep understanding of sensory transduction and neural processing at the cellular, network and systems levels. Additionally the class is aimed at enhancing science communication.

**BIOL 479. Principles of Systems Neuroscience. 3 Hours.**

PR: BIOL 348 with a minimum grade of C-. Fundamental principles of nervous system organization with an emphasis on interactions between neurons and the consequences for behavior. There will be a focus on recent advances in our understanding of each organizational principle.

**BIOL 484. Undergraduate Research 1. 1-4 Hours.**

PR: BIOL 219 with a minimum grade of C-. First in a sequence of three semester-long courses where original biological research is performed by a student under the direction of a member of the University faculty serving as the student's research mentor. Focus on writing and defending a research proposal as well as starting a research project in the laboratory.

**BIOL 485. Undergraduate Research 2. 1-4 Hours.**

PR: (BIOL 386 or BIOL 484) with a minimum grade of C-. Second in a sequence of three semester-long courses where original biological research is performed by a student under the direction of a member of the University faculty serving as the student's research mentor. Students will focus on selecting and employing proper laboratory techniques to collect and analyze data as well as to interpret the results of experimentation.

**BIOL 486. Honors Investigation and Thesis. 1-4 Hours.**

PR: BIOL 485 with a minimum grade of C-. Third in a sequence of three semester-long courses where original biological research is performed by a student under the direction of a member of the University faculty serving as the student's research mentor. Students will focus on remaining data analysis and interpretation as well as on writing and defending a research thesis.

**BIOL 487. Experimental Design & Communication 2. 1 Hour.**

PR: BIOL 387 with a minimum grade of C-. The third course in a three-course series providing professional development to Biology majors. This course focuses on argumentation and synthesis skills, analysis and communication of experimental results, problem solving, science and its effect on society, and sociopolitical/ethical problems related to the field of biology.

**BIOL 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. (May be repeated for a maximum of 9 credit hours.) Teaching practice as a tutor or assistant.

**BIOL 491. Professional Field Experience. 1-18 Hours.**

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.

**BIOL 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**BIOL 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**BIOL 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**BIOL 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**BIOL 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**BIOL 497. Research. 1-6 Hours.**

Independent research projects.

**BIOL 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## CHEMISTRY (CHEM)

**CHEM 110. Preparatory Chemistry. 3 Hours.**

PR: MATH 122 or above with a minimum grade of C- or appropriate test scores. Required for students whose performance on ACT/SAT/placement examination indicates need for preparatory work before enrolling in other chemistry courses. Elementary scientific terminology and concepts; simple chemical arithmetics; chemical symbols, formulae and equations; and mole concepts.

**CHEM 111. Survey of General, Organic, and Biological Chemistry 1. 3 Hours.**

PR: (MATH 122 or MATH 124 or MATH 126 with minimum grade of C-) or MATH 129 or higher with a minimum grade of D- or appropriate test scores and PR or CONC: CHEM 111L. Designed primarily for students taking only one year of college chemistry. Atomic structure; chemical bonding; acids, bases, and salts; periodicity; properties of gases, liquids, and solids; stoichiometry; oxidation-reduction.

**CHEM 111L. Survey of Chemistry 1 Laboratory. 1 Hour.**

PR or CONC: CHEM 111. Survey of Chemistry 1 - CHEM 111 Laboratory.

**CHEM 112. Survey of General Organic Biological Chemistry 2. 3 Hours.**

PR: WVU and WVUIT sections require CHEM 111 and CHEM 111L with a minimum grade of C- and PR or CONC: CHEM 112L, PSC sections require CHEM 111 and CHEM 111L and PR or CONC: CHEM 112L with a minimum grade of C- in all. Continuation of CHEM 111. Nuclear chemistry; air and water pollution; useful natural materials; consumer chemistry; introduction to organic and biochemistry.

**CHEM 112L. Survey of Chemistry 2 Laboratory. 1 Hour.**

PR: WVU and WVUIT sections require CHEM 111 and CHEM 111L and PR or CONC: CHEM 112, PSC sections require CHEM 111 and CHEM 111L and PR or CONC: CHEM 112 with a minimum grade of C- in all. Survey of Chemistry 2 - CHEM 112 Laboratory.

**CHEM 115. Fundamentals of Chemistry 1. 3 Hours.**

PR: Satisfactory ACT/SAT or placement exam performance, or WVU sections require CHEM 110 with a minimum grade of C- or MATH 129 or higher with a minimum grade of C-, PSC sections require MATH 124 or MATH 126 or PR or CONC: MATH 128 or higher with a minimum grade of C-, WVUIT sections require PR or CONC: MATH 126 or MATH 129, and PR or CONC: CHEM 115L. The first semester of a two-semester course of study in the fundamental principles of chemistry upon which subsequent course work is built. Topics include, but are not limited to, atomic and molecular structure, the periodic table and periodicity, chemical stoichiometry, aqueous reactions (precipitation, acid-base, and redox), basic thermochemistry, and properties of gases, liquids, and solids.

**CHEM 115L. Fundamentals of Chemistry 1 Laboratory. 1 Hour.**

PR or CONC: CHEM 115 with a minimum grade of C-. This course is the laboratory portion of a full year course sequence designed to provide students with a practical understanding of the quantitative applications of fundamental chemical principles and their quantitative application in the laboratory. Students will develop and practice observational skills, perform accurate quantitative measurements, interpret experimental results, perform calculations on these results and draw reasonable, accurate conclusions.

**CHEM 116. Fundamentals of Chemistry 2. 3 Hours.**

PR: CHEM 115 and CHEM 115L with a minimum grade of C- and PR or CONC: CHEM 116L with a minimum grade of C-. Continuation of CHEM 115 and CHEM 115L.

**CHEM 116L. Fundamentals of Chemistry 2 Laboratory. 1 Hour.**

PR or CONC: CHEM 116. Fundamentals of Chemistry 2 - CHEM 116 Laboratory.

**CHEM 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**CHEM 215. Introductory Analytical Chemistry. 3 Hours.**

PR: CHEM 116 and CHEM 116L with a minimum grade of C- in each and PR or CONC: CHEM 215L. Volumetric analysis, gravimetric analysis, solution equilibria, spectrophotometry, separations, and electrochemical methods of analysis. (Students may not receive credit for CHEM 215 and for CHEM 117 and CHEM 118.).

**CHEM 215L. Introductory Analytical Chemistry Laboratory. 1 Hour.**

PR: CHEM 116 and CHEM 116L with a minimum grade of C- in each and PR or CONC: CHEM 215. Volumetric analysis, gravimetric analysis, solution equilibria, spectrophotometry, separations, and electrochemical methods of analysis.

**CHEM 231. Organic Chemistry: Brief Course. 3 Hours.**

PR: CHEM 116 and CHEM 116L and PR or CONC: CHEM 231L. Emphasis on biological applications for students in medical technology, agriculture, and family resources. Nomenclature, structure, reactivity, and stereochemistry are stressed. (3 hr. lec., 3 hr. lab.) (Students may not receive credit for CHEM 231 and for CHEM 233 and CHEM 234.).

**CHEM 231L. Organic Chemistry: Brief Course Laboratory. 1 Hour.**

PR: CHEM 116 and CHEM 116L with a minimum grade of C- and PR or CONC: CHEM 231. Emphasis on biological applications for students in medical technology, agriculture, and family resources. Nomenclature, structure, reactivity, and stereochemistry are stressed.

**CHEM 233. Organic Chemistry 1. 3 Hours.**

PR: CHEM 116 and CHEM 116L and PR or CONC: CHEM 233L with a minimum grade of C- in all. Basic principles of organic chemistry. Modern structural concepts, the effect of structure on physical and chemical properties, reactions and their mechanisms and application to syntheses.

**CHEM 233L. Organic Chemistry 1 Laboratory. 1 Hour.**

PR: CHEM 116 and CHEM 116L with a minimum grade of C- in each and PR or CONC: CHEM 233. Fundamental organic reactions and the preparation of organic compounds.

**CHEM 234. Organic Chemistry 2. 3 Hours.**

PR: CHEM 233 and CHEM 233L and PR or CONC: CHEM 234L with a minimum grade of C- in all. Continuation of CHEM 233 and 233L and the study of basic principles of organic chemistry. Modern structural concepts, the effect of structure on physical and chemical properties, reactions and their mechanisms and application to syntheses.

**CHEM 234L. Organic Chemistry 2 Laboratory. 1 Hour.**

PR: CHEM 233 and CHEM 233L and PR or CONC: CHEM 234 with a minimum grade of C- in all. Continuation of CHEM 233L and its study of fundamental organic reactions and the preparation of organic compounds.

**CHEM 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**CHEM 310. Instrumental Analysis. 3 Hours.**

PR: CHEM 215 and CHEM 215L with a minimum grade of C-. Fundamental and practical topics integral to instrumental analyses, including classical and cutting-edge instrumental methods.

**CHEM 310L. Instrumental Analysis Laboratory. 1 Hour.**

PR: WVU sections require PR or CONC: CHEM 310 with a minimum grade of C-, WVUIT sections may have different criteria. An introduction to various scientific instruments in typical analytical laboratories used to record analytical data. Students provided an experience that will prepare them for future work in the in a commercial, academic, or government sector.

**CHEM 312. Environmental Chemistry. 3 Hours.**

PR: CHEM 215 and CHEM 233 with a minimum grade of C-. Study of the nature, reactions, transport, and fates of chemical species in the environment.

**CHEM 322. Inorganic Chemistry 1. 3 Hours.**

PR: CHEM 116 and CHEM 233 with minimum grade of C- in each. This course provides an introduction to transition metal chemistry and provides a comprehensive overview of the chemistry of main group elements and compounds. Students learn to apply a qualitative treatment of quantum mechanics to explain periodic trends learned in introductory courses and to classify compounds according to concepts of point group molecular symmetry.

**CHEM 335. Methods of Structure Determination. 4 Hours.**

PR: CHEM 234 and CHEM 234L with a minimum grade of C- and Coreq: CHEM 335L. Use of chemical methods and UV, IR, and NMR spectroscopy and mass spectrometry to elucidate structures of organic compounds. For students in chemistry and related fields who may need these methods in research and applied science.

**CHEM 335L. Methods of Structure Determination Laboratory. 0 Hours.**

PR: CHEM 234 and CHEM 234L with a minimum grade of C- and Coreq: CHEM 335. Methods of Structure Determination Laboratory. The CHEM 335L course is the corequisite laboratory course to the CHEM 335 lecture course. The two courses must be taken concurrently.

**CHEM 336. Fundamental Concepts in Early Drug Discovery. 3 Hours.**

PR: CHEM 234 with a minimum grade of C-. This course develops understanding of the crucial concepts in early drug discovery. Focus will be given to how the chemical features of the drugs affect their interactions with biological systems.

**CHEM 339L. Organic Syntheses Laboratory. 3 Hours.**

PR: CHEM 234 and (CHEM 234L or CHEM 236) with a minimum grade of C- in each. Modern synthetic methods of organic chemistry.

**CHEM 341. Physical Chemistry: Brief Course. 3 Hours.**

PR: CHEM 116 and MATH 155 and (PHYS 102 or PHYS 112) and PR or CONC: CHEM 341L. Beginning physical chemistry covering the subjects of chemical thermodynamics, chemical dynamics, and the structure of matter.

**CHEM 341L. Physical Chemistry: Brief Course Laboratory. 1 Hour.**

PR: CHEM 116 and MATH 155 and (PHYS 102 or PHYS 112) all with a minimum grade of C- and PR or CONC: CHEM 341 with a minimum grade of C-. Designed to develop experimental skills in Physical Chemistry. The primary scientific topics of the course are kinetics, calorimetry, equilibrium, the properties of matter (gases, liquids, and solutions), and phase equilibria.

**CHEM 348. Physical Chemistry 2. 3 Hours.**

PR: WVU sections require CHEM 341 with a minimum grade of C- and PR or CONC: MATH 156 with a minimum grade of C-, WVUIT sections require CHEM 346 and MATH 251 with a minimum grade of C- in each and PR or CONC: CHEM 348L with a minimum grade of C-. Comprehensive exploration of fundamental thermodynamics and quantum mechanics principles and their applications in chemistry.

**CHEM 348L. Physical Chemistry 2 Laboratory. 2 Hours.**

PR: (CHEM 341 or CHEM 346) and (CHEM 341L or CHEM 346L or CHEM 347) with a minimum grade of C- in each and PR or CONC: CHEM 348 with a minimum grade of C-. Teaches the techniques, principles, methods and applications of experimental chemical thermodynamics and experimental chemical kinetics.

**CHEM 362. Biochemistry 1. 3 Hours.**

PR: CHEM 233 and CHEM 233L with a minimum grade of C- in each. In this course, students will focus on the structure and function of the four main types of biomolecules: carbohydrates, lipids, proteins, and nucleic acids.

**CHEM 362L. Biochemistry 1 Laboratory. 1 Hour.**

PR or CONC: CHEM 362 with a minimum grade of C-. This laboratory familiarizes students with biochemical techniques used to analyze various biological processes within living organisms.

**CHEM 376L. Research Methods Laboratory. 3 Hours.**

PR: (CHEM 118 or CHEM 215) and PR or CONC: ARSC 220. An introduction to the tools and mathematics that scientists use to solve scientific problems. Mathematical modeling, experimental design, hypothesis formulation, data collection, use of statistics, reading and evaluating the scientific literature, writing and reviewing scientific papers, and oral presentation of scientific research.

**CHEM 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**CHEM 402. Chemistry Capstone: Chemical Literature. 3 Hours.**

PR: CHEM 215 and CHEM 234 and (AGBI 410 or CHEM 322 or CHEM 341) with a minimum grade of C- in all. Study of techniques for locating, utilizing, compiling, and presenting information needed by the research worker in chemistry disciplines.

**CHEM 422. Inorganic Chemistry 2. 3 Hours.**

PR: WVU sections require CHEM 322 with a minimum grade of C-, WVUIT sections require CHEM 348 with a minimum grade of C-. Inorganic chemistry sits at the crossroads of analytical, physical, and organic chemistry. The material covered in this course takes aspects of each of these chemical disciplines and applies them to inorganic main-group and transition metal compounds.

**CHEM 422L. Inorganic Synthesis Laboratory. 2 Hours.**

PR: CHEM 322 with a minimum grade of C-. Application of modern synthetic and spectroscopic methods of analysis to the preparation and characterization of main group, solid-state, transition metal, and organometallic compounds.

**CHEM 440. Quantum Chemistry. 3 Hours.**

PR: CHEM 348. Introduction to the principles of quantum mechanics and its application to atoms, molecules, solids, spectroscopy, and computational chemistry.

**CHEM 444. Colloid and Surface Chemistry. 3 Hours.**

PR: Physical chemistry. Selected topics in the properties and physical chemistry of systems involving macromolecules, lyophobic colloids, and surfaces. (3 hr. lec.).

**CHEM 460. Forensic Chemistry. 3 Hours.**

PR: CHEM 215 and CHEM 215L and CHEM 234 and (CHEM 234L or CHEM 236) and PR or CONC: (CHEM 460L or CHEM 463) with a minimum grade of C- in all. Analytical chemistry as applied in forensic science. Drug analysis, toxicology, arson, paints, polymers, fibers, inks, and gunshot residue.

**CHEM 460L. Forensic Chemistry Laboratory. 1 Hour.**

PR: CHEM 215 and CHEM 215L and CHEM 234 and CHEM 234L and PR or CONC: CHEM 460 with a minimum grade of C- in all. Analytical chemistry as applied in forensic science. Drug analysis, toxicology, arson, paints, polymers, fibers, inks, and gunshot residue.

**CHEM 462. Biochemistry 2. 3 Hours.**

PR: AGBI 410 and PR or CONC: (CHEM 462L or CHEM 464) with a minimum grade of C- in all. Second semester of undergraduate biochemistry with a focus on the molecular level processes that enable life and the integration of multiple hierarchies of mechanistic regulation.

**CHEM 462L. Biochemistry 2 Laboratory. 1 Hour.**

PR: AGBI 410 and AGBI 410L and PR or CONC: CHEM 462 with a minimum grade of C- in all. Second semester of undergraduate biochemistry lab, familiarizes students with biochemical techniques used in the analysis of biological species/processes.

**CHEM 490. Teaching Practicum: Peer-Led Team Learning. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**CHEM 490A. Teaching Practicum-CLC. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**CHEM 490B. Teaching Practicum - TA. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**CHEM 491. Professional Field Experience. 1-18 Hours.**

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.

**CHEM 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**CHEM 493. Special Topics. 6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**CHEM 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**CHEM 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**CHEM 497. Research. 1-6 Hours.**

Independent research projects.

**CHEM 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**CHINESE (CHIN)****CHIN 101. First Year Chinese 1. 3 Hours.**

PR: No prior study of the language. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context. (3 hr. lec.).

**CHIN 102. First Year Chinese 2. 3 Hours.**

PR: CHIN 101. Continuation of CHIN 101. Continued development of basic skills in listening, speaking, reading, and writing Chinese. (3 hr. lec.).

**CHIN 203. Second Year Chinese 1. 3 Hours.**

PR: CHIN 102 or equiv. Continuation of CHIN 102. Continued development of basic skills in listening, speaking, reading, and writing Chinese. (3 hr. lec.).

**CHIN 204. Second Year Chinese 2. 3 Hours.**

PR: CHIN 203 or equiv. Continuation of CHIN 203. Continued development of basic skills in listening, speaking, reading, and writing Chinese.

**CHIN 271. Intensive Mandarin Chinese 1. 3 Hours.**

PR: CHIN 102 or equivalent. Faculty-led study abroad course. Development of oral and written communication skills in Chinese through classroom activities and outside of class assignments in an authentic cultural environment.

**CHIN 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**CHIN 301. Third Year Chinese 1. 3 Hours.**

PR: CHIN 204. Continued development of oral and written communicative skills in Chinese.

**CHIN 302. Third Year Chinese 2. 3 Hours.**

PR: CHIN 301. Continued development of oral and written communicative skills in Chinese.

**CHIN 303. Readings in Modern Chinese 1. 3 Hours.**

PR: CHIN 204. Development of communicative skills, with emphasis on reading modern Chinese texts.



**CHIN 304. Readings in Modern Chinese 2. 3 Hours.**

PR: CHIN 303. Development of communicative skills, with emphasis on reading modern Chinese texts.

**CHIN 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**CHIN 461. Business Chinese. 3 Hours.**

PR: CHIN 302 or CHIN 304. Advanced training in vocabulary, sentence structures, and rhetoric in business Chinese.

**CHIN 465. Chinese Media. 3 Hours.**

PR: CHIN 302 or CHIN 304. Advanced training in vocabulary, sentence structure, and rhetoric of Chinese media.

**CHIN 471. Intensive Mandarin Chinese 2. 3 Hours.**

PR: CHIN 204 or equivalent. Faculty-led study abroad course. Development of advanced oral and written communication skills through classroom activities and outside of class assignments, including interaction with native speakers in an authentic cultural environment.

**CHIN 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**CHIN 491. Professional Field Experience. 1-18 Hours.**

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.

**CHIN 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**CHIN 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**CHIN 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**CHIN 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**CHIN 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## **COMMUNICATION STUDIES (COMM)**

**COMM 102. Fundamentals of Interpersonal Communication. 3 Hours.**

Emphasizes identification, definition, and application of the appropriate and effective interpersonal communication behaviors and skills needed for the development, maintenance, and termination of relationships with romantic partners, friends, family members, group members, superiors, and coworkers.

**COMM 103. Fundamentals of Presentational Speaking. 3 Hours.**

Applies communication theory and practice to the public speaking context, with a focus on audience analysis, speaker delivery, communication ethics, cultural diversity, and organizational techniques. Emphasizes development of extemporaneous speaking and speech evaluation skills across a variety of public speaking audiences and contexts.

**COMM 104. Fundamentals of Public Communication. 3 Hours.**

Explores the context of public communication through the rhetorical canons of invention, arrangement, style, delivery, and memory. Emphasizes the listening, critical thinking, logical reasoning, and ethical skills necessary for the creation, delivery, and interpretation of appropriate and effective persuasive appeals.

**COMM 105. Fundamentals of Mediated Communication. 3 Hours.**

Examines both the theoretical and practical implications of synchronous and asynchronous communication technologies on interpersonal relationships. Explores the social, cultural, and political effects of emerging mediated communication technologies within and across communication contexts.

**COMM 112. Fundamentals of Group Communication. 3 Hours.**

Examines the task and relational components associated with group member socialization, role acquisition, and leadership development. Emphasizes development of problem-solving, decision-making, listening, and conflict resolution skills necessary for effective group work.

**COMM 122. Fundamentals of Communication in Contemporary Society. 3 Hours.**

Introduces and explores the characteristics and properties that constitute intrapersonal, interpersonal, organizational, health, political, and mediated communication contexts. Focuses on the unique communicative problems, challenges, and issues experienced by relational participants in these contexts.

**COMM 173. Fundamentals of Communication Studies. 3 Hours.**

Surveys the historical and interrelated nature of central skills and topics across the cornerstones of everyday communication including interpersonal, mediated, organizational, and health communication.



**COMM 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**COMM 200. Communication Theory and Research 1. 3 Hours.**

PR: Pre-communication studies major. Methods of understanding human communication behavior; issues relating to epistemology and ontology in communication studies; and reviews/critiques of the major approaches and theories of human communication.

**COMM 201. Communication Research Methods. 3 Hours.**

Introduces and examines the components and processes associated with quantitative and qualitative communication research methods. Emphasizes the development of research skills necessary to interpret and design basic communication research.

**COMM 203. Communication Theory. 3 Hours.**

Introduces and examines the major approaches and theories of communication, including interpersonal, organizational, health, and mediated communication theories. Reviews the history, traditions, and paradigms of theory development in the communication discipline.

**COMM 205. Appreciation of the Motion Picture. 3 Hours.**

Introduces students to motion picture analysis so that they can appreciate how film, television, and motion pictures on social media engage audiences and communicate meaning. Draws from historical, film studies, critical, cultural, and psychological perspectives to provide a basic but holistic understanding of how motion pictures are produced, and how their production both reflects and influences society.

**COMM 212. Gender Communication. 3 Hours.**

Examines theoretical approaches to gender development through the interplay of communication, gender, and culture across interpersonal, organizational, cultural, and mediated contexts. Empowers the development of informed decision making in terms of enacting gender, addressing contemporary gender issues, and contributing to societal attitudes, policies, and perspectives regarding gender.

**COMM 270. Effective Public Speaking. 3 Hours.**

PR: Corequisite of COMM 270S. Designed for improvement of the student's speech based upon theory and demonstrated performance of voice and diction skills and public-speaking skills for effective communication in a variety of speaking situations.

**COMM 270S. Effective Public Speaking Studio. 0 Hours.**

PR: Corequisite of COMM 270. This studio course is designed for improvement of the student's speech based upon theory and demonstrated performance of voice and diction skills and public-speaking skills for effective communication in a variety of speaking situations.

**COMM 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**COMM 300. Interpersonal Communication Theory. 3 Hours.**

Provides an overview of communication theory in the social science context, including the characteristics that constitute a high quality theory and criteria for evaluating theories. Covers a variety of foundational and contemporary interpersonal communication theories, models, frameworks, and perspectives.

**COMM 302. Interpersonal Communication. 3 Hours.**

Focuses on the foundational and contemporary communication concepts, constructs, and theories that influence the development, maintenance, repair, and termination of personal relationships. Explores both the positive and the negative outcomes associated with functional personal relationships.

**COMM 303. Business and Professional Communication. 3 Hours.**

Applies effective communication strategies in various professional contexts within an organization. Explores and evaluates the use of presentational skills and simulated individual and group exercises geared toward attaining and growing with a career.

**COMM 304. Argumentation. 3 Hours.**

Emphasizes application and evaluation of argument structure needed for effective reasoning, critical thinking, and persuasion across audiences and situations. Focuses on the development of skills necessary for building, presenting, and refuting arguments.

**COMM 306. Organizational Communication. 3 Hours.**

Explores fundamental organizational communication perspectives, theories, and concepts in a wide range of contexts, with a focus on translating theories and concepts into organizational practices. Addresses appropriate and effective communication strategies to solve contemporary organizational issues.

**COMM 307. Life-Span Communication. 3 Hours.**

Focuses on communication from childhood through young adulthood. Emphasizes verbal and nonverbal communication acquisition along with identifying problems and issues associated with the development of communication competence.

**COMM 308. Nonverbal Communication. 3 Hours.**

Examines the effects of nonverbal behavior on interpersonal and organizational relationships as well as environmental contexts. Explores specific nonverbal codes such as touch, space, time, scent, body movement, and personal appearance, among others.

**COMM 309. Health Communication. 3 Hours.**

Examines the interdependency of communication and health in a pluralistic and multicultural society across communication contexts. Explores and applies communication theory, research, and practice relevant to the shaping and changing of health beliefs, behaviors, and outcomes.

**COMM 315. American Diversity in Film. 3 Hours.**

Explores films that illustrate the diversity of individuals who live in the United States of America. Emphasizes films with characters of varying ages, ethnicity, gender, sexual orientation, race, religion, region, and social class.

**COMM 316. Intercultural Communication. 3 Hours.**

Examines similarities and differences between cultures with regard to norms, values, and practices in verbal and nonverbal communication. Explores the way in which cultures differ from one another in terms of personal, contextual, and environmental variables.

**COMM 317. Communication and Aging. 3 Hours.**

Focuses on communication with and surrounding older adults, demonstrating the reciprocal relationship between (un)healthy aging and communication. Prioritizes theory-based skills that span interpersonal, intergroup, family, health, and mediated realms.

**COMM 322. Dark Side of Communication. 3 Hours.**

Explores the negative aspects of close (romantic) relationships, with a focus on relational transgressions or violations of implicit or explicit rules for appropriate relational behavior. Emphasizes the communicative, cognitive, emotional, and behavioral antecedents and consequences of rule violations in personal relationships.

**COMM 332. Family Communication. 3 Hours.**

Illuminates the power of family communication by uncovering within-family communication trends and their links to individual family member and collective family wellbeing. Addresses mediated and social discourse surrounding families and family life.

**COMM 335. Social Media in the Workplace. 3 Hours.**

Focuses on the strategic use of social media and communication technology to propose, create, disseminate, and evaluate messages that are intended to accomplish professional and organizational objectives. Emphasizes group collaboration skills.

**COMM 342. Interpersonal Relationships & Technology. 3 Hours.**

Examines interpersonal communication in mediated contexts. Emphasizes the uses, functions, and effects of social media and communication technologies in relationships with romantic partners, friends, and family members.

**COMM 352. Positive Side of Communication. 3 Hours.**

Explores the positive aspects of interpersonal relationships, with a focus on those communication behaviors that result in functional, productive, and satisfying relationships. Emphasizes the cognitive, emotional, and behavioral outcomes associated with the practice of positive communication.

**COMM 393. Special Topics. 1-6 Hours.**

COMM 393. Special Topics. 1-6 HR. PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**COMM 401. Advanced Communication Research Methods. 3 Hours.**

PR: COMM 201 with a minimum grade of C-. Competency-based approach to the practical and applied use of quantitative communication research methods. Provides hands-on experience with research design; data collection, analysis, and interpretation; and report writing to test communication hypotheses, answer communication questions, and solve communication problems.

**COMM 403. Capstone Seminar. 3 Hours.**

PR: Senior status and completion of 24 hours of communication studies coursework or consent. Explores communication knowledge and skills attained throughout the college experience for the purpose of transitioning to workplace contexts, job attainment, and career pursuits. Utilizes a breadth and depth of communication theories, topics, and strategies designed for personal and professional success following graduation.

**COMM 404. Persuasion. 3 Hours.**

Examines the communicative processes of persuasion, compliance, and social influence and their ability to change, reinforce, or shape attitudes, beliefs, and behaviors. Evaluates informal and formal persuasive messages with a focus on the critical consumption and evaluation of successful and unsuccessful persuasive communication across various communicative channels. This course is not open to first-year students.

**COMM 405. Effects of Mediated Communication. 3 Hours.**

Applies social science research methods and theories to the study of mediated communication. Examines the influence of mediated communication on individuals' beliefs, attitudes, and behaviors across relational contexts.

**COMM 406. Advanced Organizational Communication. 3 Hours.**

Focuses on investigating traditional and contemporary issues and problems associated with organizations from a critical perspective. Explores the functions and importance of communication for empowerment and social justice across a wide range of organizational settings.

**COMM 408. Advanced Nonverbal Communication. 3 Hours.**

PR: COMM 308 with minimum grade of C-. Takes a functional approach to the study of nonverbal messages and behaviors. Emphasizes the role that nonverbal codes play in encoding and decoding relational messages across in-person and mediated communication contexts.

**COMM 409. Advanced Health Communication. 3 Hours.**

Applies health communication research, theory, and practice to the planning, development, and evaluation of strategic health communication messaging, programming, and campaigning. Focuses on public communication campaign design and analysis to evaluate and develop communication campaigns addressing public and community health issues, policies, or practices via diverse and contemporary communication channels.

**COMM 416. International Culture and Communication. 3 Hours.**

This course provides a hands-on study of the influence of culture on verbal and nonverbal communication, and of the influence of cultural communication norms on conflict and intercultural relations. The course is conducted in the context of a faculty led study abroad experience.

**COMM 424. Communication Ethics. 3 Hours.**

Examines the principles, frameworks, and guidelines used to recognize, identify, and evaluate ethical issues and tensions inherent in communication relationships. Emphasizes the challenges and benefits associated with practicing ethics within and across communication and relational contexts.

**COMM 425. Computer Mediated Communication. 3 Hours.**

Addresses the practical and theoretical issues associated with computer-mediated communication. Explores the purposes, functions, and practices of contemporary communication technologies, with an emphasis on the role these technologies play in interpersonal, organizational, and institutional relationships.

**COMM 426. Organizational Culture. 3 Hours.**

Examines the communicative processes through which organizations and its members create, maintain, and transform workplace culture. Emphasizes the role that organizational artifacts, values, and assumptions play in both organizational insider and outsider assessment and interpretation of an organization's culture.

**COMM 435. Advanced Social Media. 3 Hours.**

Examines the influence of communication processes on social media and the ways in which social media can both positively and negatively affect individuals, groups, and society. Investigates contemporary issues and problems associated with the development, implementation, and use of social media and web-based technologies.

**COMM 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**COMM 491. Professional Field Experience. 1-18 Hours.**

PR: Consent. (May be repeated up to a maximum of 18 Hr.) 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.

**COMM 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**COMM 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**COMM 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**COMM 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**COMM 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**COMM 497. Research. 1-6 Hours.**

Independent research projects.

**COMM 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**CRIMINOLOGY (CRIM)****CRIM 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**CRIM 232. Criminology. 3 Hours.**

PR: SOC 101. Exploration of various theories of criminal behavior; emphasis on a critical study of the criminal justice system and efforts to reform the penal system.

**CRIM 234. The Criminal Justice System. 3 Hours.**

PR: SOC 101. A sociological introduction to the justice system. Focuses on analysis of police work, court activities, and correction within the context of American social organization and societal definitions of crime and justice.

**CRIM 302. Deviant Behavior. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101) or consent. Examination of the processes by which deviance is defined in society, and the methods of social control attempted. Provides a critical understanding of society from the perspective of those defined as outsiders-criminals, addicts, etc.

**CRIM 303. Juvenile Delinquency. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101) or consent. Nature, extent, and causal explanation of forms of juvenile delinquency. The nature of juvenile courts, the correctional systems, and prevention programs. Emphasizes current issues.

**CRIM 318. Hate Crime. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101) or consent. Builds on basic knowledge in sociology to provide a detailed example of an emerging social problem, i.e., hate crime. Explores the ways social phenomena become social problems. Examines the causes and consequences of hate crime.

**CRIM 319. Police Culture and Socialization. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Examines the institution of policing in the United States. Builds on basic sociological concepts to provide a sociological and historical perspective on the formal and informal structures and processes in the American system of policing.

**CRIM 321. Punishment and Social Control. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Builds on basic sociological concepts to provide detailed knowledge about the use of prisons and incarceration among other forms of punishment and surveillance in contemporary society.

**CRIM 324. Gender and Crime. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Builds on basic sociological principles and concepts, and focuses on issues of social structure and process that are at the intersection of gender crime, and crime control.

**CRIM 334. Corporate and White Collar Crime. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Examines law-breaking by respectable organizations and individuals engaged in professional economic activity. Studies sociocultural sources of such crime, consequences for victims, and public policy responses. Includes recent criminal cases, legal changes, and enforcement trends.

**CRIM 345. Terrorism. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). A sociological understanding of terrorism, including its causes, relations to social context, and trends. Emphasis is placed on major terrorist groups, selected cases, explanatory theories and policies of containment and prevention.

**CRIM 346. Victimology. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Introduction to the sociological study of victimization, which includes an examination of risks and frequencies, perceptions and fears, and the social and psychological impact of crime, accident and illness on individuals and their societies.

**CRIM 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**CRIM 415. Mass Media, Crime and Deviance. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Critically examines how mass media and popular culture depict crime and deviance, and explores how these depictions influence social policies. Focuses especially on portrayals involving race, gender, class and ethnicity in particular historical contexts.

**CRIM 431. Cybercrime. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Examines the legal, social, and technical impacts of illegal activities facilitated through the use of computers or other technology devices. Focus is on these activities as a criminological phenomenon.

**CRIM 432. Drugs, Crime, and Society. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Examines the relationships between drugs and society from both micro and macro perspectives, including the effects of drug use and abuse in everyday life and government intervention efforts.

**CRIM 433. Inside Out Prison Exchange. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101) and consent. Experiential program which brings together students and incarcerated men or women inside prison to exchange ideas about criminal justice processes, analyze a designated concern, and produce recommendations for improvement.

**CRIM 435. Criminal Justice Process. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). A sociological introduction to the formal and informal processes in the American criminal justice system that affect the investigation and prosecution of criminal cases, including the collection, analysis, and presentation of evidence.

**CRIM 444. Neighborhoods and Crime. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). This course introduces students to the growing sociological literature on neighborhoods and crime, with an emphasis on issues related to the race/ethnicity and economic inequality.

**CRIM 461. Issues in Crime and Justice. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). Senior seminar on crime and social organization of justice. Focus on problems of prevention, enforcement, corrections and institutional reform. Emphasis on recent research, emerging trends, and policy.

**CRIM 464. Rural Criminology. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). The sociological study of crime and social control in rural communities. Focuses on theories and empirical research on rural and small-town crime, and implications for preventing and controlling crime in rural areas.

**CRIM 478. Violence Against Women. 3 Hours.**

PR: CRIM 232 and CRIM 234. Introduction of sociological studies of violence against women in intimate relationships. Examination of definitions, theories, and the latest empirical findings on a broad range of issues related to male-to-female psychological, physical, and sexual assaults. Exploration of progressive ways of preventing and controlling violence against women in private places.

**CRIM 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**CRIM 491. Professional Field Experience. 1-18 Hours.**

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.

**CRIM 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**CRIM 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**CRIM 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**CRIM 497. Research. 1-6 Hours.**

Independent research projects.

**DATA SCIENCE (DSCI)****DSCI 101. Introduction to Data Science. 3 Hours.**

Introduction and overview of this interdisciplinary field and the basic computer programming skills needed to work as a data scientist. Provides students basic experience in acquiring data, performing very simple analyses, and gaining an elementary understanding of data science.

**DSCI 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**DSCI 209. Data Science Pipelines with Python and R. 3 Hours.**

PR: DSCI 101 with a minimum grade of C- and MATH 124 or higher (up to MATH 156) with a minimum grade of C-. Development of workflow or computer programs to import, clean, transform, model and visualize data. Using data from different disciplines, students will program in Python and R as they develop these data science pipelines and present their results.

**DSCI 221. Reproducible Data Science using R. 3 Hours.**

PR: CS 110 and DSCI 101 with a minimum grade of C- in each. Introduction to programming in R and to using RStudio, and using the tidyverse set of packages to learn the basics of a data science pipeline needed to import, clean, transform, visualize and model large amounts of data.

**DSCI 222. Data Science Workflows using Python. 3 Hours.**

PR: CS 110 and DSCI 101 with a minimum grade of C- in each. Introduction to programming in Python, to the basics of building a data science pipeline. Students develop projects using data from various sources to develop and refine their Python skills. Also teaches the basics of terminal mode and use of bash.

**DSCI 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**DSCI 301. Databases for Data Science. 3 Hours.**

PR or CONC: (DSCI 209 or DSCI 221) with a minimum grade of C-. Focuses on understanding relational or categorical data structures associated with databases in a data science pipeline and acquiring data from existing databases using R and Python.

**DSCI 309. Applied Machine Learning. 3 Hours.**

PR: MATH 124 or MATH 126 with a minimum grade of C-. Statistical machine learning methods for supervised and unsupervised learning will be introduced via applications. Specifically, linear regression, methods for classification, resampling, model choice, dimension reduction and clustering will be covered with a conceptual understanding and their implementation using R and Python.

**DSCI 310. Statistical Machine Learning 1. 3 Hours.**

PR: STAT 312 and (PR or CONC: DSCI 222 and MATH 441) with a minimum grade of C-. Focuses on a conceptual understanding of statistical machine learning methods and their implementation using python. Covers linear regression; classification methods (logistic regression, linear discriminant analysis, Naive Bayes and K-nearest neighbors); Generalized Linear Models; resampling methods (cross-validation and bootstrap); model choice methods (subset and stepwise selection, shrinkage methods, dimensionality reduction).

**DSCI 311. Statistical Machine Learning 2. 3 Hours.**

PR: DSCI 310 with a minimum grade of C-. Continuation of DSCI 310. Covers statistical machine learning methods that are not strictly linear, such as models based on splines, tree-structures, support vector machines and unsupervised methods. Emphasizes a conceptual understanding and application of the methods using R and Python.

**DSCI 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**DSCI 409. Advanced Case Studies in Data Science. 3 Hours.**

PR: DSCI 309 with a minimum grade of C-. The course covers advanced methods through case studies. Four main topics will be computing and analyzing data using the high performance computing, and case studies with natural language processing, real-time streaming data and imaging data. Concurrently students will acquire data from their own major and put together a data science pipeline and analysis for their final project.

**DSCI 410. Big Data in Practice: Cloud and Parallel Computing. 3 Hours.**

PR: DSCI 311 with a minimum grade of C-. Extends the R "tidyverse" data manipulation and machine learning pipelines to relational database tables; big data; network data; streaming data. Students will develop their abilities from using RStudio locally on a laptop to using it on a server, with technologies such as Spark.



**DSCI 450. Current Topics in Data Science. 3 Hours.**

PR: DSCI 311 with a minimum grade of C-. Exploration of timely current topics where data science is used; exploration and discussion of biases and other aspects of decisions made as a result of data science tools.

**DSCI 480. Capstone Design. 1 Hour.**

PR: DSCI 310 with a minimum grade of C-. Application of skills and methods acquired through core coursework through the design of research project; students will practice effective written communication and engage in purposeful writing and presenting in data science.

**DSCI 481. Capstone Experience. 2 Hours.**

PR: DSCI 480 with a minimum grade of C-. Application of skills and methods acquired through core coursework to complete a capstone research project based on real world data. Students will practice effective written and oral communication and engage in purposeful writing and presenting in data science.

**DSCI 495. Independent Study. 1-6 Hours.**

PR: Consent. Faculty-supervised study of topics not available through regular course offerings.

**DSCI 497. Research. 1-6 Hours.**

PR: Consent. Independent research projects.

## **ENGLISH (ENGL)**

**ENGL 1C1. Introduction to Composition and Rhetoric. 3 Hours.**

Studies the logical, rhetorical, and linguistic structures of expository prose; develops strategies for analyzing purposes, audiences, and conventions; emphasizes processes for drafting, revising, and editing. Required of all bachelor's degree candidates unless equivalent transfer credit or portfolio credit applies. Qualified students may complete ENGL 103 in place of ENGL 101 and 102. Co-requisites will differ at WVUIT and PSC.

**ENGL 1C2. Composition, Rhetoric, and Research. 3 Hours.**

PR: ENGL 101 or equiv. Builds on the writing abilities earned in English 101 (or the equivalent). Focuses on the research process, argumentation, and critical inquiry; emphasizes structures, language, documentation, and formats appropriate for specific audiences and purposes. Required of all bachelor's degree candidates unless equivalent transfer credit or portfolio credit applies.

**ENGL 101. Introduction to Composition and Rhetoric. 3 Hours.**

PR: Satisfactory ACT/SAT score. Studies the logical, rhetorical, and linguistic structures of expository prose; develops strategies for analyzing purposes, audiences, and conventions; emphasizes processes for drafting, revising, and editing. Required of all bachelor's degree candidates unless equivalent transfer credit or portfolio credit applies. Qualified students may complete ENGL 103 in place of ENGL 101 and 102. Co-requisites will differ at WVUIT and PSC.

**ENGL 102. Composition, Rhetoric, and Research. 3 Hours.**

PR: ENGL 101 or ENGL 1C1 or equiv. Builds on the writing abilities earned in English 101 (or ENGL 1C1 or the equivalent). Focuses on the research process, argumentation, and critical inquiry; emphasizes structures, language, documentation, and formats appropriate for specific audiences and purposes. Required of all bachelor's degree candidates unless equivalent transfer credit or portfolio credit applies.

**ENGL 103. Accelerated Academic Writing. 3 Hours.**

PR: Qualifying ACT/SAT verbal score. For students who qualify based on high ACT/SAT verbal scores, English 103 satisfies WVU's introductory writing requirement (English 101 and 102) in a single course. English 103 emphasizes both expository writing and researched argument writing. Students develop the organization, revision, and editing strategies needed to respond to a variety of writing situations, audiences, and purposes.

**ENGL 111. Introduction to Creative Writing. 3 Hours.**

Instruction in reading and writing fiction, nonfiction and poetry in order to enhance creative writing skills.

**ENGL 131. Poetry and Drama. 3 Hours.**

An introduction to the genres.

**ENGL 132. Short Story and Novel. 3 Hours.**

An introduction to the genres.

**ENGL 139. Contemporary African Literature. 3 Hours.**

A survey of contemporary African poetry, drama, and fiction.

**ENGL 154. African American Literature. 3 Hours.**

A historical introduction and survey from its beginnings to the present.

**ENGL 156. Literature of Native America. 3 Hours.**

A historical survey of Native American prose, poetry, song, and story from the beginning to the present.

**ENGL 170. Literature of Minds and Selves. 3 Hours.**

This course explores the nature of consciousness, selfhood, and humanness through literary and filmic representations of thought and character, especially those that deviate from the norm. Topics will vary by semester and might include disability, trauma, monstrosity, criminality, human rights, queer characters, children's literature, posthumanism, or animal studies, among others.

**ENGL 171. Literature of Science and Nature. 3 Hours.**

Analyzes the representation of science and nature in literature and film across historical periods and genres.



**ENGL 172. Literature of the Human Body. 3 Hours.**

Analyzes representations of the human body and its biological and psychological development and decline through literary, expository, and other cultural texts.

**ENGL 180. Literature of Love, Sex, and Gender. 3 Hours.**

Analyzes representations of love in literature and film across historical periods and genres, with particular attention to narrative representations of sex, gender, and sexual identity.

**ENGL 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**ENGL 199. Orientation to English Studies. 1,2 Hour.**

Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

**ENGL 200. Foundations of Literary Study. 3 Hours.**

Study and practice of the analytical, research, and writing skills fundamental to literary studies.

**ENGL 211. Sturm Workshop. 1 Hour.**

PR: Consent. Creative writing workshop conducted by Sturm visiting writer in residence.

**ENGL 212. Creative Writing: Fiction. 3 Hours.**

An open enrollment introduction to the writing of fiction.

**ENGL 213. Creative Writing: Poetry. 3 Hours.**

An open enrollment introduction to the writing of poetry; practice in the basics of image, metaphor, line, form, sound and voice.

**ENGL 214. Creative Writing: Non-Fiction. 3 Hours.**

Introductory course in the writing of non-fiction.

**ENGL 221. The English Language. 3 Hours.**

PR: ENGL 101 and sophomore standing. An introduction to language, its structure in the mind, and its use in the United States.

**ENGL 226. Non-Western World Literature. 3 Hours.**

Selected readings in non-Western world literature, ancient and modern.

**ENGL 229. Literary Contexts Abroad. 1-3 Hours.**

PR: Consent. Global learning experience combines travel with cultural learning and literary and film analysis with particular emphasis on cultural understanding and social traditions. Location will vary.

**ENGL 230. Film Studies. 3 Hours.**

Topics in the study of film, or film and literature, in a historical, theoretical and/or cultural context.

**ENGL 232. Poetry. 3 Hours.**

Appreciation and enjoyment of poems through critical and analytical reading. Studies in the various types of poetry, and of the language, imagery, and techniques of poetic expression.

**ENGL 233. The Short Story. 3 Hours.**

The short story's structure, history, and contemporary forms.

**ENGL 234. Drama. 3 Hours.**

The drama's structure, history, and contemporary forms.

**ENGL 235. Novel. 3 Hours.**

The novel's structure, history, and contemporary forms.

**ENGL 236. The Bible as Literature. 3 Hours.**

Analysis of the themes, topics and literary genres of the Old and New Testaments. Issues to be discussed include the unity of the text, the status of authorship, translation, and the depiction of God.

**ENGL 238. Literature of Place. 3 Hours.**

Topics in the study of literature of place in a historical, theoretical, and/or historical context.

**ENGL 241. American Literature 1. 3 Hours.**

A historical introduction and survey from its beginnings to the mid-nineteenth century.

**ENGL 242. American Literature 2. 3 Hours.**

A historical introduction and survey from the mid-nineteenth century to the present.

**ENGL 251. American Folklore and Culture. 3 Hours.**

Introduction to folklore of the USA. Folklore and American culture. Subject groups vary but usually include Native Americans, early European settlers, African Americans, and 20th century immigrants.

**ENGL 252. Appalachian Fiction. 3 Hours.**

Reading of short stories, novels, and other narratives by Appalachian authors.

**ENGL 254. African American Literature. 3 Hours.**

Studies in the literature of African American authors, 1845 to the present.

**ENGL 255. Multiethnic Literature. 3 Hours.**

This course examines literature by Americans of diverse ethnicities including, but not limited to, Asian Americans, Latinos, Native Americans, African Americans, and European Americans of various class/religious/regional backgrounds.

**ENGL 257. Science Fiction and Fantasy. 3 Hours.**

A study of the history and nature of science fiction from H. G. Wells to the present, with special attention to features of prose narration.

**ENGL 258. Popular American Culture. 3 Hours.**

A survey of modern popular American culture from 1940 to the present, with special emphasis on popular literature, music, television, movies, radio in its golden age, and comic books.

**ENGL 261. British Literature 1. 3 Hours.**

A historical introduction and survey from the Middle Ages through the eighteenth century.

**ENGL 262. British Literature 2. 3 Hours.**

A historical introduction and survey from the late eighteenth century to the present.

**ENGL 263. Shakespeare 1. 3 Hours.**

Several of Shakespeare's most important plays.

**ENGL 272. Modern Literature. 3 Hours.**

British and American poetry, drama, and fiction from 1900 to 1960.

**ENGL 273. Contemporary Literature. 3 Hours.**

An examination of the literature written since 1960 in England and America. Poetry, drama, and fiction. Selections will vary depending on the instructor.

**ENGL 275. Justice and Literature. 3 Hours.**

An exploration of the concept and practice of justice through a study of literature. Literary works draw from history, theology, philosophy, and legal cases to illustrate the complexity of justice. How has literature reflected and produced understandings of justice? Time period and regional, national, or global focus will vary by instructor.

**ENGL 277. Reading Publics: Exploring the Humanities in Public Spaces. 3 Hours.**

Reading Publics introduces students to the powerful ways literature and literacy initiatives improve the local community, preserve cultural heritage, and enrich democracy. Students will complete service learning projects in the local community while also reading related works of fiction and non-fiction.

**ENGL 285. Images of Women in Literature. 3 Hours.**

Representative literary works studied against a backdrop of social and historical documents to examine the effect of images of women in literature on the self-image of women today.

**ENGL 288. Gender and Sexuality in Literature and Film. 3 Hours.**

Representations of sexual and gender diversity in literature and film, including of lesbian, gay, bisexual, transgender, queer, and intersex people.

**ENGL 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ENGL 298. Honors. 1-3 Hours.**

PR: Consent. Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**ENGL 309. Approaches to Teaching Composition. 3 Hours.**

PR: ENGL 200. (May not be taken for both undergraduate and graduate credit.) Surveys attitudes toward and techniques of teaching writing in elementary and secondary schools. Provides experiment in class with methods of teaching writing.

**ENGL 312. Creative Writing Workshop: Fiction. 3 Hours.**

PR: (ENGL 212 or ENGL 213 or ENGL 214) with a minimum grade of C-. Advanced workshop in creative writing for students seriously engaged in writing fiction.

**ENGL 313. Creative Writing Workshop: Poetry. 3 Hours.**

PR: (ENGL 212 or ENGL 213 or ENGL 214) with a minimum grade of C-. Advanced workshop in creative writing for students seriously engaged in the writing of a major group of poems.

**ENGL 314. Creative Writing Workshop: Non-Fiction. 3 Hours.**

PR: (ENGL 212 or ENGL 213 or ENGL 214) with a minimum grade of C-. Advanced workshop in creative writing for students seriously engaged in the writing of nonfiction.

**ENGL 318. Topics in Creative Writing. 3 Hours.**

PR: (ENGL 212 or ENGL 213 or ENGL 214) with a minimum grade of C-. Advanced work in creative writing; course content changes with genre: fiction, poetry, non-fiction. (May be repeated for a maximum of 9 hours.).

**ENGL 321. History of the English Language. 3 Hours.**

PR: ENGL 221 or LING 101 or LING 311 or instructor's permission. Study of the nature of the language; questions of origins, language families, development, relationships of English as one of the Indo-European languages.

**ENGL 329. Topics in English Language. 3 Hours.**

This course rotates a set of topics offering students field- specific approaches to the study of the English language. Students engage the language through active research paradigms focusing on the social context of the language.

**ENGL 331. Topics in Genre. 3 Hours.**

This variable-topic course will trace formal and thematic conventions in poetry, drama, prose, fiction, and/or nonfiction.

**ENGL 337. Study of a Major Author. 3 Hours.**

PR: ENGL 102 or ENGL 103. May be repeated for a maximum of 6 credit hours. Study a single author's works with special attention to historical contexts and critical reception. Authors will vary.

**ENGL 338. Environmental Criticism. 3 Hours.**

PR: ENGL 102 or ENGL 103. This course provides methods for exploring connections between literature and the environment. Topics include nature writing; animal studies; environmental justice; urban ecocriticism; literary cartography; ecological theory.

**ENGL 339. Theatre Tour. 3 Hours.**

Introduces students to texts in performance by reading dramatic texts and traveling to see those texts in performance. Performance sites may include either international or U.S. locations.

**ENGL 339A. Theatre Tour Travel. 1 Hour.**

Must be taken with ENGL 339.

**ENGL 342. American Drama. 3 Hours.**

Representative American dramas and history of theatre in America.

**ENGL 343. American Poetry. 3 Hours.**

Major American poets of the nineteenth and twentieth centuries.

**ENGL 344. Modern American Poetics. 3 Hours.**

A close study of those poets who have shaped the aesthetics of contemporary American poetry.

**ENGL 345. American Literature to 1800. 3 Hours.**

Major genres, authors, themes, and topics in American literature, c. 1500 to 1800.

**ENGL 346. American Literature 1800-1865. 3 Hours.**

Major genres, authors, themes and topics in American Literature from 1800 to 1865.

**ENGL 347. American Literature 1865-1915. 3 Hours.**

Major genres, authors, themes, and topics in American Literature from 1865 to 1915.

**ENGL 348. Twentieth Century American Literature. 3 Hours.**

Major genres, authors, themes, and topics in American literature from 1900 to 1999.

**ENGL 349. Contemporary American Literature. 3 Hours.**

Completes the American literature sequence with an examination of stories, novels, poetry and drama (stage and screen) of the period from 1960 to present.

**ENGL 351. Folk Literature. 3 Hours.**

A close study of a range of narrative folklore genres, which may include tales, myths, legends, ballads, proverbs, riddles, jokes, and other forms.

**ENGL 352. Topics in Appalachian Studies. 3 Hours.**

Studies of authors, genres, themes, or topics in Appalachian literature.

**ENGL 355. Topics in Multiethnic Literature. 3 Hours.**

PR: ENGL 102 or ENGL 103. Specialized topics course reflective of current issues in multiethnic literature and culture. Topics vary per semester.

**ENGL 356. Topics in Native American Literature. 3 Hours.**

Specialized topics courses reflecting current trends and issues in Native American literature and culture. Subjects vary per semester.

**ENGL 360. Literature of the Middle Ages. 3 Hours.**

Literature of the period 1066-1485 in relation to the cultural transformations of the time. Course emphases may include (but are not limited to) Arthurian romance, the "mystery" plays, crusade narratives, political ballads, and women's writings.

**ENGL 361. Chaucer. 3 Hours.**

Early poems, Troilus and Criseyde, and The Canterbury Tales. In addition to an understanding and appreciation of Chaucer's works, the student is expected to acquire an adequate knowledge of Chaucer's language.

**ENGL 363. Shakespeare 2. 3 Hours.**

Advanced studies in Shakespeare's plays and non-dramatic poetry. Methodological emphases vary per semester, including textual, historical, dramaturgical and postcolonial approaches.

**ENGL 364. Literature of the Seventeenth Century. 3 Hours.**

Studies from Donne to Dryden.

**ENGL 365. Milton. 3 Hours.**

All of Milton's poems and a few selected prose works.

**ENGL 366. Literature of the Eighteenth Century 1. 3 Hours.**

Literature of the period 1660-1744 in relation to social, political, and religious movements of the time.

**ENGL 367. Literature of the Eighteenth Century 2. 3 Hours.**

Continuation of ENGL 366, covering the latter half of the century. May be taken independently of ENGL 366.

**ENGL 368. The Romantic Movement. 3 Hours.**

A survey of the works of the major British Romantic writers along with an introduction to works of scholarship in British Romanticism.

**ENGL 369. Victorian Literature. 3 Hours.**

Study of Victorian poets and prose writers with an emphasis on historical, political, and cultural issues. Representative authors may include: Tennyson, the Brownings, Arnold, Dickens, the Brontes, Eliot, and Hardy.

**ENGL 371. Modern British/Irish Literature. 3 Hours.**

Studies in the late 19th- and 20th-century British and Irish literature, including the works of Yeats, Eliot, Joyce, Woolf, Auden, Beckett, Hughes, Churchill, and Heaney.

**ENGL 373. Contemporary British Literature. 3 Hours.**

The poems, plays, and fiction read in this course reflect Britain's current multicultural makeup: among them, the North and the Republic of Ireland, Scotland, Wales, England, South Africa, Pakistan, and India.

**ENGL 374. Global Anglophone Literature. 3 Hours.**

Address various issues in global Anglophone literature, including colonialism, imperialism, gender, nationalism, resistance, development, neocolonialism and diasporic identities. Examination of contemporary literary modes associated with the postcolonial project of revisionist history.

**ENGL 382. Contemporary Literary Theory. 3 Hours.**

An introduction to the predominant schools of literary theory of the twentieth century, including psychoanalytic criticism, Marxist criticism, feminist criticism, deconstruction, postmodernism, and cultural studies.

**ENGL 383. Introduction to Cultural Studies. 3 Hours.**

Students will explore the ways in which we are all simultaneously users of and used by culture, and the ways in which cultural practices influence how we think, feel, and act in everyday life.

**ENGL 384. Introduction to American Studies. 3 Hours.**

This course introduces students to methodologies of studying American popular and mass cultures in the past and present. Topics may include film, literature, performance, music, economics, and technology.

**ENGL 385. American Women Writers. 3 Hours.**

Studies in the literature of American women writers. Syllabi may vary per term; topics may include Jewish American women writers, women writers of the suffrage movement, and 20th century American women writers.

**ENGL 386. British Women Writers. 3 Hours.**

This course examines fiction, poems, essays, and drama written by British women writers, beginning with the fourteenth-century author Margery Kempe and continuing into the late twentieth century with Nadine Gordimer.

**ENGL 387. Topics in Women's Literature. 3 Hours.**

Syllabus will vary per term. Topics include women writers outside of Great Britain and the United States; comparative women writers; women's writing on a particular theme or topic.

**ENGL 388. Topics in Gay/Lesbian Studies. 3 Hours.**

Specialized topics courses reflecting current trends in studies of gay/lesbian history, literature, culture, and theory. Subjects will be taught on a rotation.

**ENGL 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ENGL 405. Young Adult Literature. 3 Hours.**

A survey of young-adult literature with special attention to literary theories and methodologies that assist its interpretation.

**ENGL 418. Creative Writing Seminar. 3 Hours.**

PR: 9 hours of creative writing and consent. Individual projects in creative writing pursued in a workshop setting.

**ENGL 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**ENGL 491. Professional Field Experience. 1-18 Hours.**

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.

**ENGL 491A. Professional Field Experience. 1-18 Hours.**

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.

**ENGL 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ENGL 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual interest to students and faculty.

**ENGL 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**ENGL 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**ENGL 497. Research. 1-6 Hours.**

Independent research projects.

**ENGL 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**ENGL 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

**ENGLISH AS A SECOND LANGUAGE (ESL)****ESL 140. English as a Second Language Academic Reading/Writing. 3 Hours.**

For undergraduate (and graduate) international students. Develops the skills necessary to improve academic reading skills to write well-organized and self-edited essays in a variety of rhetorical modes.

**ESL 160. Diversity Issues in America. 3 Hours.**

PR: Students must be enrolled in the AMP ESL program. Practice in academic vocabulary, speaking, listening, reading, and writing skills with an emphasis on lectures, note-taking, and self-reflection. Incorporates diversity, inclusion, and social justice aspects of the language learning process.

**ESL 170. Academic Language Skills and Cultural Studies. 3 Hours.**

PR: Restricted to students registered in the AMPS program. For undergraduate international students. Provides practice in academic speaking and listening skills with an emphasis on presentations, lectures, note-taking, and pronunciation. Incorporates cultural aspects of the language in the learning process.

**ESL 180. West Virginia Culture for ESL. 3 Hours.**

PR: Restricted to students registered in the AMPS program. Exploration of the history and cultures that became West Virginia through examination and discussion of literature about the region, folktales, state archives, music history of the region, and contemporary information sources.

**ESL 240. English as a Second Language Research and Writing. 3 Hours.**

Provides undergraduate and graduate international students with the skills, strategies, and procedures necessary for researching a topic and writing a well-organized and logical research paper.

**ESL 250. Speaking and Listening. 3 Hours.**

For undergraduate and graduate international students. Provides guidance and practice in general and academic speaking and listening skills and improves oral comprehensibility through pronunciation activities.

**ESL 260. English for STEM. 3 Hours.**

PR: Restricted to students registered in the AMPS program. Students will build the language skills they need to be successful STEM students in a university context. No prerequisites required.

**ESL 270. English for Environmental Science. 3 Hours.**

PR: Restricted to students registered in the AMPS program. This introduction to environmental science course for ESL students aims to introduce the topic of environmental issues with focus on sustainability and the effects that human activity has on the environment. The course will familiarize students with the ideas behind and the debates within sustainability studies.

**ESL 280. Academic Writing. 3 Hours.**

PR: Restricted to students registered in the AMPS program. The goal of this course is to prepare you to succeed in your academic classes at WVU by improving your academic writing skills. In this context, you will be expected to analyze, synthesize, and report on a variety of topics in multiple genres, both in out-of-class writing assignments, as well as for in-class timed essays or short answer questions.

**ESL 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ESL 350. International Teaching Assistants Fluency. 3 Hours.**

Designed for graduate students wishing to become International Teaching Assistants (ITAs). Course focuses on the characteristics of effective oral communication in English in order to improve SPEAK test scores and comprehensibility in the classroom.

**ESL 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**ESL 491. Professional Field Experience. 1-18 Hours.**

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.

**ESL 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ESL 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**ESL 495. Independent Study. 1-6 Hours.**

Faculty-supervised study of topics not available through regular course offerings.

**ESL 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**ESL 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## **FOREIGN CULTURE (FCLT)**

**FCLT 160. Spanish Civilization. 3 Hours.**

This course provides students with an understanding of and an appreciation for Spanish culture throughout history.

**FCLT 210. Chinese Civilization and Culture. 3 Hours.**

This is a survey course taught in English that introduces Chinese institutions, language philosophy, religion, art, literature, family and marriage, and Chinese social etiquette.

**FCLT 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FCLT 298. Honors. 1-3 Hours.**

PR: Student in Honors Program and consent by the honors director. Independent reading, study or research.

**FCLT 310. Chinese Cinema. 3 Hours.**

A study of representative Chinese films from the early twentieth century to the present; films subtitled, readings and discussion in English.

**FCLT 311. The Chinese Experience. 3 Hours.**

Faculty-led study abroad course covering Chinese culture, traditions, costumes, and the development of modern Chinese society through lectures, workshops, visits to historical landmarks, and interaction with the local Chinese people.

**FCLT 340. Italian Cinema 1945 to Present. 3 Hours.**

Introduces students to key topics of modern Italian culture and history as explored through cinema. It will focus on a selection of Italian films from World War II to the present.

**FCLT 342. The Italian Mafia: History and Legend. 3 Hours.**

Investigation of the history of the mafia, the harsh reality of life in the mafia, and the ways in which it reaches into every aspect of Italian politics. Exploration and discussions of the myths pervasive in popular culture.

**FCLT 360. Latin American Cinema. 3 Hours.**

Examination of film from Latin America in socio-cultural context.

**FCLT 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FCLT 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**FCLT 491. Professional Field Experience. 1-18 Hours.**

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.

**FCLT 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FCLT 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.



**FCLT 495. Independent Study. 1-6 Hours.**

PR: Consent. Faculty supervised study of topics not available through regular course offerings.

**FCLT 498. Honors. 1-3 Hours.**

PR: Student in Honors Program and consent by the honors director. Independent reading, study or research.

## FORENSIC AND INVESTIGATIVE SCIENCE (FIS)

**FIS 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**FIS 194. Professional Field Experience. 1-18 Hours.**

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.

**FIS 199. Orientation to Forensic Investigative Science. 1,2 Hour.**

Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

**FIS 201. Introduction to Forensic Identification. 3 Hours.**

A survey course in forensic science including overview of the various scientific disciplines that handle crime scene evidence and the systematic method of evidence analysis. Students learn about the collection, preservation, and methods of analysis of biological, chemical, and physical evidence.

**FIS 202. Crime Scene Investigation Overview. 3 Hours.**

PR: FIS 201 with a minimum grade of C-. An overview of the crime scene investigation process for the non-examiner. Course topics include: safety, evidence collection, processing, and documentation. Virtual scenarios will serve as teaching aids.

**FIS 301. Science/Technology of Fingerprint Identification. 3 Hours.**

PR: FIS 201 with a minimum grade of C- and Coreq: FIS 301L and FIS majors only. Introduces basics of fingerprint analysis and comparisons. Focuses on basis patterns used in fingerprint comparisons and classifications of each fingerprint type, including Henry, National Crime Information Center, Integrated Automated Fingerprint Identification System pattern classification codes.

**FIS 301L. Science/Technology of Fingerprint Identification Laboratory. 0 Hours.**

PR: Corequisite of FIS 301. Fingerprint Technology - FIS 301 Laboratory.

**FIS 302. Crime Scene Investigation 1. 3 Hours.**

PR: FIS 201 with a minimum grade of C- and PR or CONC: FIS 302L or FIS 303 with a minimum grade of C-, Forensic Examiner majors only. Basic competencies required for crime scene examiners. Focus on developing a consistent approach to the processing of a crime scene with a major focus on recovery/processing of physical evidence.

**FIS 302L. Crime Scene Investigation 1 Laboratory. 1 Hour.**

PR: FIS 335 and FIS 335L and PR or CONC: FIS 302 and FIS 405 and FIS 405L with a minimum grade of C- in all, Forensic Examiner majors only. Introductory laboratory of crime scene investigation, covering skills from initial scene assessment through debriefing and clean-up. Scientific and practical methods of securing, collecting and analyzing this evidence will be taught and practiced.

**FIS 305. Biological Evidence. 3 Hours.**

PR: (FIS 202 or FIS 302) with a minimum grade of C- in each and Coreq: FIS 305L. Focuses on the collection and testing of body fluids as well as death scene investigation procedures.

**FIS 305L. Biological Evidence Laboratory. 0 Hours.**

Coreq: FIS 305. Biological Evidence - FIS 305 Laboratory.

**FIS 306. Expert Testimony Perspectives. 3 Hours.**

PR: FIS 201. A comprehensive review of expert testimony that broadens perspectives of the role of the scientist in the courtroom as well as improving expert witness capabilities.

**FIS 311. Fingerprint Science. 3 Hours.**

PR: FIS 201 with a minimum grade of C-. Focuses on a comprehensive overview of the science of fingerprints and introduction to latent fingerprints. Not open to FIS Examiner majors.

**FIS 312. Applied Forensic Microscopy. 3 Hours.**

PR: FIS 201 and (PHYS 102 or PHYS 112) with a minimum grade of C- and Coreq: FIS 312L. Introduction to fundamentals of microscopy including light theory, optics, image formation and more. Forensic-specific topics will also be covered including general forensic microscopy, hair and fiber observations and comparisons, ballistics, and trace evidence examination. Students will practice proper microscope care and techniques in the laboratory and learn how to utilize the fundamentals in a forensic application.

**FIS 312L. Applied Forensic Microscopy Laboratory. 0 Hours.**

PR: FIS 201 and (PHYS 102 or PHYS 112) with a minimum grade of C- and Coreq: FIS 312. Introduction to fundamentals of microscopy including light theory, optics, image formation and more. Forensic-specific topics will also be covered including general forensic microscopy, hair and fiber observations and comparisons, ballistics, and trace evidence examination. Students will practice proper microscope care and techniques in the laboratory and learn how to utilize the fundamentals in a forensic application.

**FIS 314. Introduction to Microscopy. 3 Hours.**

PR: CHEM 234 and (CHEM 234L or CHEM 236) and (PHYS 102 or PHYS 112) with a minimum grade of C- in each and Coreq: FIS 314L. Basic skills and theory of light, chemical and polarized light microscopy. Practice of proper technique associated with micro-manipulation, sample preparation, the care and maintenance of the microscope, and the origin and significance of qualitative and quantitative observations diagnostic of forensic trace evidence.

**FIS 314L. Introduction to Microscopy Laboratory. 0 Hours.**

PR: Corequisite of FIS 314. Introduction to Microscopy - FIS 314 Laboratory.

**FIS 320. Science and Culture of Illicit Drugs. 3 Hours.**

A survey of the major drugs of recreational use and abuse in the contemporary United States. Covers the chemical production of illicit drugs; associated paraphernalia; and the biochemistry and physical symptoms of consumption. Also explores the history and cultural significance of illicit drug consumption.

**FIS 324. Molecular Genetics for Forensic Science. 3 Hours.**

PR: BIOL 219 and BIOL 219L with a minimum grade of C- and PR or CONC: FIS 324L. This course cover a range of topics in molecular genetics with a special emphasis on topics and methodology relevant to forensic biology. These include DNA extraction, DNA quantification, electrophoresis, and PCR. The course also examines the various human genetic markers used in forensic DNA analysis such as STRs, SNPs, and mtDNA in depth.

**FIS 324L. Molecular Genetics for Forensic Science Laboratory. 1 Hour.**

PR: BIOL 219 and BIOL 219L with a minimum grade of C- and PR or CONC: FIS 324. Basic methods used in molecular genetic laboratories, including extraction, quantification, amplification and sequencing. Applications are focused on the specific techniques used in forensic biology for human identification.

**FIS 330. Principles of Forensic Photography. 3 Hours.**

PR: FIS 201. Introduces basic principles of forensic photography for the non-investigator. Includes the history of photography, theories behind photography, and techniques for photographing type of crime scenes and evidence.

**FIS 335. Forensic Photography. 3 Hours.**

PR: (PHYS 102 or PHYS 112) with a minimum grade of C-, Forensic Examiner majors only, and Coreq: FIS 335L. Focuses on the use of digital photography in forensic science. Topics include the use of digital cameras, scanners, photomicrography, and macrophotography to document a range of evidence types. Students will learn how such images may be processed and enhanced without compromising legal requirements.

**FIS 335L. Forensic Photography Laboratory. 0 Hours.**

PR: Corequisite of FIS 335. Forensic Photography - FIS 335 Laboratory.

**FIS 340. Forensic Chemical Analysis. 3 Hours.**

PR: CHEM 233 and (CHEM 233L or CHEM 235) with a minimum grade of C- in each and PR or CONC: (FIS 340L or FIS 341) with a minimum grade of C-. Development of critical thinking, writing and communication skills related to fundamental concepts of analytical instrumentation and its application to the forensic discipline.

**FIS 340L. Forensic Chemical Analysis Laboratory. 1 Hour.**

PR: CHEM 233 and (CHEM 233L or CHEM 235) with a minimum grade of C- in each and PR or CONC: FIS 340 with a minimum grade of C-. Laboratory skills with analytical instrumentation as applied in forensic science.

**FIS 380. Social Relations of Forensic and Law Professionals. 3 Hours.**

PR: FIS 201 with a minimum grade of C-. Introduction to the relationships among attorneys, experts, and law enforcement professionals: how individuals work together for the investigative process from the initial investigation to the courtroom.

**FIS 385. Professional Internship Preparation. 1 Hour.**

PR: CHEM 234 and CHEM 234L and (STAT 215 or STAT 312) with a minimum grade of C- in all. Development of professionalism in forensic science. Skills for career building and professional norms and behaviors will be presented. Students learn about internship sites, protocols for application, and expectations for on-the-job roles and behavior.

**FIS 386. Forensic Identification Internship. 3-6 Hours.**

PR: FIS 385 and one of the following sets of courses: (FIS 302 and FIS 302L) or (FIS 340 and FIS 340L) or (FIS 432 and FIS 432L) with a minimum grade of C- in every course. Supervised field or research experience in a forensic, research, or law enforcement setting. Provides students with relevant professional experience based on their forensic interest, skills, and knowledge. Develops professional and networking skills.

**FIS 393. Special Topics. 1-6 Hours.**

Investigation of topics not covered in regularly scheduled courses.

**FIS 400. Population Genetics for Forensic Science. 3 Hours.**

PR: FIS 324 and FIS 324L with a minimum grade of C- in each. This course explores basic population genetics as it is applied to forensic science. The fundamental concepts of Hardy Weinberg Equilibrium (HWE) and Linkage Equilibrium (LE) will be explored, as well as the role of population genetics in the interpretation of DNA evidence in forensic science.

**FIS 401. Professional Forensic Communication. 3 Hours.**

PR: ENGL 103 or (ENGL 101 and ENGL 102) and FIS 201. Familiarizes students with forensic literature, literature searching techniques, bibliographic software; and provides students with the writing and presentation skills essential to forensic professionals.

**FIS 402. Crime Scene Investigation 2. 3 Hours.**

PR: FIS 302 and FIS 302L with a minimum grade of C- in each and Forensic Examiner majors only and Coreq: FIS 402L. Continuation of FIS 302. Outlines procedures for collection of biological and trace evidence using scientific and practical methods of securing, collecting, analyzing this evidence, in accordance with known standards.

**FIS 402L. Crime Scene Investigation 2 Laboratory. 0 Hours.**

PR: Corequisite of FIS 402. Crime Scene Investigation 2 - FIS 402 Laboratory.

**FIS 404. Law and Evidence. 3 Hours.**

PR: FIS 385 with a minimum grade C-. This course presents a comprehensive review of the Federal Rules of Evidence as they pertain to forensic practitioners and the student's ability to relate legal precedents to procedures in collecting, processing, and securing evidence used in criminal cases.

**FIS 405. Latent Fingerprint Examination and Comparison. 4 Hours.**

PR: CHEM 233 and CHEM 233L and FIS 301 with a minimum grade of C- in each and Coreq: FIS 405L. Identification techniques used in fingerprint development for processing crime scenes and evidence for latent prints, focusing on latent print development and preservation, including crime scene processing and blood prints. Focuses on latent print comparisons as stipulated by FBI and IAI standards.

**FIS 405L. Latent Fingerprint Laboratory. 0 Hours.**

PR: Corequisite of FIS 405. Latent Fingerprint - FIS 405 Laboratory.

**FIS 406L. Capstone: Courtroom Testimony and Laboratory. 3 Hours.**

PR or CONC: FIS 404. A skills intensive course that combines in-class instruction with practical experience in the area of court testimony, legal writing presentation, and creation and presentation of exhibits in an actual court setting.

**FIS 407. Gravesite Forensics. 3 Hours.**

PR: (FIS 202 or FIS 302) with a minimum grade of C- and Coreq: FIS 407L. Introduction to terrestrial carrion decomposition and to the means of locating, excavating and recovering human remains deposits. This course also covers the identification of carrion-associated insects and their use in determining minimum postmortem interval.

**FIS 407L. Gravesite Forensics Laboratory. 0 Hours.**

PR: Corequisite of FIS 407. Gravesite Forensics - FIS 407 Laboratory.

**FIS 409. Blood Stain Pattern Analysis. 3 Hours.**

PR: FIS 402 and Coreq: FIS 409L. Scientific analysis of blood patterns at crime scene investigations and their applications in solving crimes.

**FIS 409L. Bloodstain Pattern Analysis Laboratory. 0 Hours.**

PR: Corequisite of FIS 409. Bloodstain Pattern Analysis - FIS 409 Laboratory.

**FIS 414. Trace Evidence Examination. 3 Hours.**

PR: (FIS 314 and FIS 314L) and (FIS 340 and FIS 340L or FIS 341) with a minimum grade of C- and PR or CONC: (FIS 414L or FIS 416) with a minimum grade of C-. Introduction to fundamental concepts for the identification, collection, examination and interpretation of trace evidence. Forensic analysis of glass, paint, tape, hairs, fibers, inks and firearm discharge residues.

**FIS 414L. Trace Evidence Examination Laboratory. 1 Hour.**

PR: (FIS 314 and FIS 314L) and (FIS 340 and FIS 340L or FIS 341) with a minimum grade of C- in each and PR or CONC: FIS 414 with a minimum grade of C-. Development of laboratory skills for forensic examination of trace evidence, including collection, recovery, preservation, analysis, and interpretation of trace materials commonly analyzed in crime laboratories (glass, paint, tapes and adhesives, gunshot residues, inks and paper, soil, fibers and hair).

**FIS 421. Introduction to Firearms Examination. 3 Hours.**

PR or CONC: FIS 335 with a minimum grade of C- and Coreq: FIS 421L. Fundamentals of firearms-related evidence. Detailed study of design, mechanism, and manufacture of firearms as well as interior, exterior, and terminal ballistics. Includes a laboratory component.

**FIS 421L. Introduction to Firearms Examination Laboratory. 0 Hours.**

Coreq: FIS 421. Introduction to Firearms Examination - FIS 421 Laboratory.

**FIS 427. Medicolegal Forensics. 3 Hours.**

PR: FIS 201 with a minimum grade of C- and PR or CONC: (FIS 202 or FIS 302 with a minimum grade of C-) and Coreq: FIS 427L. Introduction to medicolegal death investigation from historical reference to modern day application. Course topics include overview of cause and manner of death with assessment and documentation of the body at the scene with proper use and knowledge of basic medical terminology. Warning: This course will contain graphic images and exposure to human remains.

**FIS 427L. Medicolegal Forensics Laboratory. 0 Hours.**

PR: Corequisite of FIS 427. Course emphasizes the practical and hands-on aspects of medicolegal death investigation. Topics include evidence collection and protection, scene documentation, and application of medical concepts to forensic investigation.

**FIS 432. Forensic Biology. 3 Hours.**

PR: BIOL 219 and PR or CONC: (BIOL 434 or FIS 432L). Biological applications and advances in forensic identification technologies, including advantages and limitations of different approaches. Focuses on isolation, quantification, amplification, and analysis of DNA.

**FIS 432L. Forensic Biology Laboratory. 1 Hour.**

PR or CONC: BIOL 432 or FIS 432. Prepares students in the processing of biological samples for DNA analysis, including presumptive and confirmatory testing, isolation of nuclear DNA, quantification, amplification, and analysis of DNA. Extensive hands-on practical experience and application of knowledge.

**FIS 435. Advanced Forensic Photography. 3 Hours.**

PR: FIS 335 and Coreq: FIS 435L, and restricted to Forensic Biology, Forensic Chemistry, and Forensic Examiner majors. In-depth photography course for students who wish to pursue forensic photography as a possible employment option upon graduation.

**FIS 435L. Advanced Forensic Photography Laboratory. 0 Hours.**

PR: Corequisite of FIS 435. Advanced Forensic Photography - FIS 435 Laboratory.

**FIS 450. Computational Forensics. 3 Hours.**

PR: MATH 155 or consent. An introductory-level course exposing students to non-traditional and technology driven approaches to forensic analysis, with specific emphasis on forensic imaging, analytical modeling, and computer programming.

**FIS 451. Arson and Explosives Analysis. 3 Hours.**

PR: FIS 340 and (FIS 340L or FIS 341) with a minimum grade of C- in each and PR or CONC: (FIS 451L or FIS 452) with a minimum grade of C-. Examines the chemistry of combustion and the chemical analysis of ignitable liquids, explosives and post-combustion residues. The course relies heavily on instrumental methods of analysis, including various forms of chromatography and mass spectrometry. A laboratory component provides hands-on experience with interpreting data involving ignitable liquid residues and explosives.

**FIS 451L. Arson and Explosives Analysis Laboratory. 1 Hour.**

PR: FIS 340 and (FIS 340L or FIS 341) with a minimum grade of C- in each and PR or CONC: FIS 451 with a minimum grade of C-. Develops laboratory skills related to chemical analysis of ignitable liquids, explosives and post-combustion residues. Emphasis on instrumental methods of analysis, including various forms of chromatography and mass spectrometry and extensive hands-on experience interpreting data derived from analyzing ignitable liquid residues and explosives.

**FIS 460. Analysis of Seized Drugs. 3 Hours.**

PR: FIS 340 and (FIS 340L or FIS 341) with a minimum grade of C- in each and PR or CONC: (FIS 460L or FIS 461) with a minimum grade of C-. Develops students' abilities to properly conduct seized drug analyses, including: 1) the history and origin of drugs of abuse; 2) the appropriate handling and storage of evidence/samples; 3) selecting appropriate analytical schemes for the identification of seized drugs; 4) the scheduling of controlled substances; 5) techniques to understand the synthetic pathways and distribution networks of seized drugs.

**FIS 460L. Analysis of Seized Drugs Laboratory. 1 Hour.**

PR: FIS 340 and (FIS 340L or FIS 341) with a minimum grade of C- in each and PR or CONC: FIS 460 with a minimum grade of C-. Develops laboratory skills applicable to the chemical analysis of seized drugs. Emphasis on instrumental methods of analysis, including various forms of chromatography and mass spectrometry, and extensive hands-on experience with the interpretation of data involving analysis of unknown seized drugs.

**FIS 470. Analytical Forensic Toxicology. 3 Hours.**

PR: FIS 460 and (FIS 460L or FIS 461) with a minimum grade of C- in each and PR or CONC: FIS 470L or FIS 471 with a minimum grade of C-. Application of fundamental principles of mode(s) of action of different drugs, the primary mechanisms of drug administration and distribution, drug metabolism and the excretion of xenobiotics. Current and historical cases.

**FIS 470L. Analytical Forensic Toxicology Laboratory. 1 Hour.**

PR: FIS 460 and (FIS 460L or FIS 461) with a minimum grade of C- in each and PR or CONC: FIS 470 with a minimum grade of C-. Develops laboratory skills applicable to forensic toxicological analysis of drugs. Students practice using sample preparation strategies such as liquid-liquid extraction, solid phase extraction, derivatization, and instrumental analysis techniques for screening and confirmation via chromatography and mass spectrometry.

**FIS 480. Forensic Quality Assurance. 2 Hours.**

PR: FIS 201. Quality assurance in a laboratory setting to include quality control/assurance, management, and application of statistics. ASCLD-LAB and ISO accreditation and professional certification procedures.

**FIS 485. Professional Ethics in Forensic Science. 3 Hours.**

Foundational ethical concepts as they relate to forensic science and other associated professional cultures. Applied case-study examples are used to analyze ethical and moral boundaries of practice.

**FIS 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**FIS 491. Professional Field Experience. 1-18 Hours.**

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.

**FIS 492. Directed Study. 1-3 Hours.**

Directed Study, reading, and/or research.

**FIS 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FIS 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**FIS 497. Research. 1-6 Hours.**

Independent research projects.

**FIS 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**FOREIGN LITERATURE IN TRANSLATION (FLIT)****FLIT 216. Chinese Literature Translation 1. 3 Hours.**

Readings in the literature of China from its beginnings through the end of the imperial era in 1922; attention to major writers and genres; focus on literary history. Readings, and discussion in English.

**FLIT 217. Chinese Literature in Translation 2. 3 Hours.**

Selected Chinese literary works since 1911; attention to major writers and genres; readings and discussion in English.

**FLIT 239. Francophone Literature in Translation. 3 Hours.**

Works by French-speaking authors from Africa and the Caribbean. French majors will read selections in the original.

**FLIT 264. Spanish Literature Translation 1. 3 Hours.**

Selected Spanish works from the twelfth century to the end of the eighteenth century. Readings and discussions in English.

**FLIT 266. Latin American Literature. 3 Hours.**

An introduction to the diverse literary traditions of Latin America, this survey explores the historical roots that gave rise to modern Latin American literature.

**FLIT 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FLIT 298. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**FLIT 315. Modern Arabic Literature. 3 Hours.**

Introduces students to major Arabic authors and acclaimed selections from Arabic literature of the 20th and 21st centuries, as well as historical landmarks that have contributed to the evolution of this literature. Taught in English.

**FLIT 316. Arab Women Writers. 3 Hours.**

Study of works by Arab women writers, created originally in Arabic and English, selected to introduce students to the literary traditions and historical contexts within which Arab women's writings are situated and to explore the themes and genre issues of those writings.

**FLIT 361. Latin American Literature and Violence. 3 Hours.**

Examination of key works of Latin American cultural production in translation related to contexts of physical and structural violence.

**FLIT 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FLIT 426. Love and War in German Literature. 3 Hours.**

Survey of German literature from 1800-1960. Readings and discussions in English.

**FLIT 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**FLIT 491. Professional Field Experience. 1-18 Hours.**

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.

**FLIT 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FLIT 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**FLIT 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**FLIT 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**FLIT 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**FRENCH (FRCH)****FRCH 101. Elementary French 1. 3 Hours.**

PR: Appropriate score on the Departmental Placement Test or departmental consent. Introduction to the sound and writing systems of the language, with emphasis on listening, speaking, reading, and writing within an authentic cultural context. (Course presumes no prior knowledge of the language.).



**FRCH 102. Elementary French 2. 3 Hours.**

PR: FRCH 101 or appropriate score on the Departmental Placement Test or departmental consent. Continuation of French 101.

**FRCH 203. Intermediate French 1. 3 Hours.**

PR: FRCH 100 or FRCH 102 or appropriate score on the Departmental Placement test. This is the third course in the basic French curriculum sequence and prepares students for FRCH 204.

**FRCH 204. Intermediate French 2. 3 Hours.**

PR: FRCH 203 or appropriate score on the Departmental Placement Test. This is the last course in the basic French curriculum sequence and serves as the foundation for advanced French study. Emphasis on written and oral communication within an authentic cultural context.

**FRCH 274. Virtual Vendee. 3 Hours.**

PR: FRCH 203 or appropriate score on the Departmental Placement Test. Taught on-line in conjunction with WVU-Vendee. Can count as FRCH 204 or as elective for French major/minor. French culture through podcasts, readings, and writings. Taught in French.

**FRCH 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FRCH 301. Language Through Civilization. 3 Hours.**

PR: FRCH 200 or FRCH 204 or FRCH 274 or adequate score on the Departmental Placement Test. Development of oral and written communicative skills in the context of the origins, development, and contributions of French and Francophone civilizations.

**FRCH 302. Language Through Culture. 3 Hours.**

PR: FRCH 200 or FRCH 204 or FRCH 274 or adequate score on the Departmental Placement Test. Development of oral and written communicative skills in the context of contemporary values, institutions and contributions of the French and Francophone world.

**FRCH 303. Structure and Communication. 3 Hours.**

PR: Frch 200 or FRCH 204 or FRCH 274 or adequate score on the Departmental Placement Test. Development of communicative competencies with emphasis on French language structures, speaking, and writing within an authentic cultural context.

**FRCH 304. Advanced Readings. 3 Hours.**

PR: FRCH 200 or FRCH 204 or FRCH 274 or adequate score on the Departmental Placement Test. Development of communicative competencies with emphasis on authentic texts and documents from the French- speaking world.

**FRCH 370. French Culture in France. 6 Hours.**

PR: FRCH 200 or FRCH 204 or adequate score on the placement test. Overview of French language and culture taught on location as part of the faculty-led summer program in France.

**FRCH 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FRCH 401. Oral Expression. 3 Hours.**

PR: Six hours at the 300-level, including either FRCH 301 or FRCH 302 or consent. Course not open to graduate students. Intensive practice of oral skills with emphasis on discussion, debate, recitation, reading aloud, etc.

**FRCH 402. Phonetics and Pronunciation. 3 Hours.**

PR: Six hours at the 300-level, including either FRCH 301 or FRCH 302 or consent.

**FRCH 413. French Popular Culture. 3 Hours.**

This course provides the students with an overview of the specificities and evolution of modern French popular culture through the exploration and analysis of major social movements and cultural artifacts, including short stories, graphic novels and films as well as realia.

**FRCH 421. Survey of Literature 1. 3 Hours.**

PR: Six hours at the 300-level, including either FRCH 303 or FRCH 304 or consent. Course not open to graduate students. A cultural and historical survey from its beginning to the end of the eighteenth century.

**FRCH 422. Survey of Literature 2. 3 Hours.**

PR: Six hours at the 300-level, including either FRCH 303 or FRCH 304 or consent. Course not open to graduate students. A cultural and historical survey from the beginning of the nineteenth century to the present.

**FRCH 431. French Civilization. 3 Hours.**

PR: Six hours at the 300-level, including either FRCH 301 or FRCH 302 or consent. A survey of major themes, movements, ideas, and figures in the development of French civilization from prehistory to the twentieth century.

**FRCH 432. Contemporary Culture. 3 Hours.**

PR: Six hours at the 300-level, including either FRCH 301 or FRCH 302 or consent.

**FRCH 433. Francophone Cultures. 3 Hours.**

PR: Six credit hours of FRCH courses at the 300-level. An examination of products, practices, and perspectives characteristic of various cultures of the French-speaking world.



**FRCH 450. French Cinema. 3 Hours.**

PR: Six hours at the 300-level, including either FRCH 301 or FRCH 302 or consent. Film literacy, vocabulary, and technique in the context of French cinema. Emphasis may vary among origins, poetic realism, surrealism, film noir, nouvelle vague, current movements. May be repeated with permission. Taught in French.

**FRCH 461. Commercial French 1. 3 Hours.**

PR: Six hours at the 300-level, including either FRCH 301 or FRCH 302 or consent. Development of advanced speaking, reading and writing skills appropriate for business contexts within the French-speaking world.

**FRCH 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**FRCH 491. Professional Field Experience. 1-18 Hours.**

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.

**FRCH 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**FRCH 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**FRCH 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**FRCH 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**FRCH 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**FRCH 498. Honors. 1-3 Hours.**

PR: Students in the Honors Program and consent by the honors director. Independent reading, study or research.

**GEOGRAPHY (GEOG)****GEOG 102. World Regions. 3 Hours.**

Comparison and relationships of world regions. Geographical perspectives of contemporary global problems. Developing regions contrasted with modernized regions and the consequences of their interactions.

**GEOG 107. Global Climate System. 3 Hours.**

Introduction to the global climate system, emphasizing change in climates across space and time, and how current climatic changes arise from interactions among the atmosphere, biosphere, hydrosphere, lithosphere, and human societies.

**GEOG 107L. Global Climate System Laboratory. 1 Hour.**

PR or CONC: GEOG 107. Introduction to global environmental systems operating on the earth's surface, emphasizing weather and climate, soils, natural vegetation, and geomorphology, and examination of human interaction with these natural processes.

**GEOG 108. Human Geography. 3 Hours.**

This course introduces students to geographic dimensions of important topics in today's world. Students will learn about multiple approaches within human geography, including: cultural, economic, political, and urban geography. Students will use these approaches to understand and think critically about current issues in the world around them, from local to global scales.

**GEOG 150. Digital Earth. 3 Hours.**

PR or CONC: GEOG 149 or GEOG 150L. Recent advances in technology and data availability have increased our knowledge about the world. This class surveys key concepts of geospatial technologies (GIS, remote sensing, spatial analysis) in the context of social and environmental change.

**GEOG 150L. Digital Earth Laboratory. 1 Hour.**

PR or CONC: GEOG 150. Introduction to geographic information systems software using basic principles of mapping and analysis of geographic information.

**GEOG 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**GEOG 199. Orientation to Geography. 1,2 Hour.**

For majors, pre-majors, and potential majors; discussion of the discipline, curriculum requirements, areas of specialization, internships and career opportunities. (1 hr. lec., pass/fail only.).

**GEOG 205. Climate and Sustainability. 3 Hours.**

Examines the sustainability of natural resources in the context of global climate change. Emphasis is on the sustainability of food, water, energy, and other resources in the United States within the context of the global environment.

**GEOG 209. Economic Geography. 3 Hours.**

PR: GEOG 108. Examination of the world economy particularly the spatial patterns of agriculture, manufacturing and services.

**GEOG 241. Geography of Europe. 3 Hours.**

PR: GEOG 108. Study of contemporary human and physical geography of Europe. Insight to political, economic and social dimensions of transition in this region.

**GEOG 243. Geography of Africa. 3 Hours.**

Systematic and regional characteristics and geographic problems of political, social, and economic development.

**GEOG 244. Geography of the Middle East. 3 Hours.**

This course is designed to provide students with a detailed understanding and ability to analyze the geography of the Middle East (including North Africa). Special topics on current geographical issues will also be covered.

**GEOG 245. Geography of Latin America. 3 Hours.**

This course introduced students to geographic approaches to studying the natural, historical, social, political, economic, and cultural issues of Latin America, analyzed from multiple perspectives of how place is created, experienced, and imagined. The course takes a focus on some of the ongoing current events that are dramatically changing the geopolitics of the region, in Cuba, Venezuela, and Puerto Rico.

**GEOG 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**GEOG 298. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent from the honors director. Independent reading, study, or research.

**GEOG 300. Geographical Data Analysis. 3 Hours.**

Quantitative techniques for collection, classification, and spatial analysis of geographical data with emphasis on map analysis and application of spatial statistics.

**GEOG 302. Political Geography. 3 Hours.**

Examines the interrelationship between politics and the environment, human territoriality, the political organization of space, geopolitical aspects of the nation-state and international problems.

**GEOG 303. Cultural Geography. 3 Hours.**

This course engages students in current research in cultural geography. What does a geographic approach contribute to understandings of culture? These perspectives are relevant to analyzing the politics of race, gender, the environment, and our place in it. Cultural geographers critically and creatively explore the ways humans develop a sense of place and their struggles over place and culture.

**GEOG 307. Biogeography: Theory and Method. 3 Hours.**

PR: GEOG 107. An introduction to the field of biogeography including the study of the distribution and diversity of life, how species migrate, the importance of natural and human disturbances in ecosystems.

**GEOG 309. Introduction to International Development. 3 Hours.**

Introduction to key concepts of international development including theoretical overview, data visualization, and development planning. Students will participate in lectures, in-class discussions, and computer software training.

**GEOG 312. Migration and Human Rights. 3 Hours.**

Examines the characteristics and causes of contemporary migration, the geopolitical dimensions of migration control, and the role of human rights in shaping human mobility.

**GEOG 333. Human Geography in Practice. 3 Hours.**

PR: ENGL 102 and (GEOG 102 or GEOG 108). The theories of science at the ground of human geography and the qualitative methods used to carry out human geographical research.

**GEOG 350. Geospatial Problem Solving. 4 Hours.**

PR: (RESM 440 or (SUST 250 and SUST 250L) with a minimum grade of C- and Coreq: GEOG 350L. Survey of a variety of spatial analysis techniques used to extract actionable information from geospatial data. Assignments make use of both commercial and open-source software and associated technologies. Students learn to develop, refine, document, and critique multi-part spatial analysis workflows.

**GEOG 350L. Geospatial Problem Solving Laboratory. 0 Hours.**

PR: Corequisite of GEOG 350. Lab component of Geography 350: Geospatial Problem Solving.

**GEOG 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**GEOG 409. Applied International Development. 3 Hours.**

PR: GEOG 309. This course will provide students with background and training in international development planning and implementation. It will utilize lessons from real-world development planning scenarios and require students to work in teams to write planning documents using the course lectures and materials.

**GEOG 411. Rural and Regional Development. 3 Hours.**

PR: GEOG 102 or GEOG 108. An investigation into rural and regional development in developed and underdeveloped regions. The relationship between development theory and policy is explored.

**GEOG 412. Geography of Gender. 3 Hours.**

PR: GEOG 108 or consent. An exploration of how gender affects spatial patterns and processes. Theoretical and empirical aspects of feminism are analyzed including women and employment, third world feminism, sexuality and space, and gender in academia.

**GEOG 415. Global Environmental Change. 3 Hours.**

PR: GEOG 107 or equivalent or consent. A geographic analysis of the Earth system emphasizing the interdependence and feedback mechanisms of the hydrologic cycle, ecosystems, climate, and human activities.

**GEOG 443. African Environment and Development. 3 Hours.**

Detailed examination of the intersection of environmental and development studies in sub-Saharan Africa with critical assessments of current practice.

**GEOG 450. Political Ecology Seminar. 3 Hours.**

PR: GEOG 300 or GEOG 333 or GEOG 350 or GEOG 455 or GEOG 462 and enrollment in the Geography major or minor. Examination of some of the world's most pressing social-ecological challenges, including the impacts of and responses to climate change and issues of environmental justice. Exploration of foundational texts, core themes and debates, and future trajectories in political ecology through extensive reading, classroom discussion, and written assignments.

**GEOG 451. Introduction to GIS Programming. 3 Hours.**

PR: GEOG 350 with a minimum grade of C-. Introduction to the computational aspects of geographic information systems and science. Covers topics in programming fundamentals such as variables, control structures, functions, and objects, as well as GIS-specific principles such as spatial data structures, functions for cartography, and creation of tools for GIS software.

**GEOG 452. Geographic Information Science: Applications. 3 Hours.**

PR: GEOG 350. GIS uses, needs, analysis, design, and implementation. Operational institutional and management topics of GIS for planning, locational decision making in business, government, and research contexts. (2 hr. lec., 1 hr. lab.) (Also listed as GEOL 452.).

**GEOG 453. Geographic Information Science: Design and Implementation. 3 Hours.**

PR: GEOG 350 and consent. Geographic database design and implementation using contemporary GIS software.

**GEOG 454. Environmental Geographic Information Systems. 3 Hours.**

Provides background and hands-on experience needed to answer scientific questions about the environment within a raster-based GIS framework. Students should have introductory-level GIS background.

**GEOG 455. Introduction to Remote Sensing. 3 Hours.**

PR: Corequisite of GEOG 455L. Theory, technology and applications of photo-interpretation and digital image analysis of aerial photography and multispectral images.

**GEOG 455L. Introduction to Remote Sensing Laboratory. 0 Hours.**

PR: Corequisite of GEOG 455. Introduction to Remote Sensing - GEOG 455 Laboratory.

**GEOG 456. Remote Sensing Applications. 3 Hours.**

PR: GEOG 455 or consent. Survey of remote sensing applications, focusing on the type of information obtained and methods used.

**GEOG 457. Open-Source Spatial Analytics. 3 Hours.**

PR: GEOG 300 or GEOG 350. Introduction to the free statistical software tool R and investigation of the use of this software for working with data in general and geographic data in particular.

**GEOG 461. Web GIS. 3 Hours.**

PR: GEOG 350. The World Wide Web has become a valuable means to display, collect, and share geographic data and maps. This course will explore the use of web technologies for developing web map applications. Students will learn to produce audience appropriate maps in the web environment using a variety of technologies and methods.

**GEOG 462. Digital Cartography. 3 Hours.**

PR: Consent. Computer-assisted mapping emphasizing the appropriate uses of software in thematic and topographic map design, annotation, symbolization, color, design, display and reproduction.

**GEOG 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**GEOG 491. Professional Field Experience. 1-18 Hours.**

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.

**GEOG 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**GEOG 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**GEOG 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**GEOG 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**GEOG 496. Senior Thesis. 3 Hours.**

PR: Consent.

**GEOG 497. Research. 1-6 Hours.**

PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.).

**GEOG 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**GEOG 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

## **GEOLOGY (GEOL)**

**GEOL 101. Planet Earth. 3 Hours.**

Composition and structure of the Earth and the physical processes that change Earth's surface.

**GEOL 101L. Planet Earth Laboratory. 1 Hour.**

PR or CONC: GEOL 101. Laboratory study of the Earth using rocks, minerals and maps.

**GEOL 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**GEOL 200. Geology for Environmental Scientists. 4 Hours.**

PR: (GEOL 110 and GEOL 111) or (GEOG 110 and GEOG 111) or (GEOL 101 and GEOL 102 and GEOL 103 and GEOL 104). Fundamentals of mineralogy, sedimentation, stratigraphy, petrology, and structural geology needed by environmental scientists to understand earth materials. (Required field trips partial student expense.) (3 hr. lec., 1 hr. lab.).

**GEOL 203. Physical Oceanography. 3 Hours.**

(Not open to upper division geology majors.) The geography and geology of ocean basins and margins, the chemical and physical properties of sea water, and the examination of the source and location of resources in the sea.

**GEOL 225. Planetary Geoscience. 3 Hours.**

An examination of the geologic and geochemical processes at work in the solar system from the perspectives supplied by space age exploration of the planets and other solar system bodies.

**GEOL 230. Fossils and Evolution. 3 Hours.**

PR: GEOL 101 or BIOL 101. Evolutionary history of plants, marine invertebrates, fish, amphibians, reptiles, dinosaurs, birds, and mammals; emphasis on unique contribution of fossil record to evolutionary theory. (2 hr. lec., 1 hr. lab.) (Credit cannot be obtained for both GEOL 103 and GEOL 230.).

**GEOL 275. Geologic Field & Computer Methods. 3 Hours.**

PR: GEOL 101 and GEOL 102 and GEOL 103 and GEOL 104. Introduction to geologic methods necessary to describe, measure, map, sample, and report on Earth materials in the field and in the laboratory. Develops communication skills necessary to organize and present data as formal, technical reports and presentations. Includes required field trips during class time and on weekends.

**GEOL 286. Introduction to Minerals & Rocks. 4 Hours.**

PR: GEOL 101 and GEOL 102 with a minimum grade of C- in each and (CHEM 110 or PR or CONC: CHEM 115 and CHEM 115L) and Coreq: GEOL 286L. An introduction to the fundamentals of mineralogy and petrology, focusing on how minerals and rocks form, and how different minerals and rocks are identified, classified, and related to one another through plate tectonic theory and physio-chemical processes. (Required weekend field trip.).

**GEOL 286L. Introduction to Minerals & Rocks Laboratory. 0 Hours.**

PR: Corequisite of GEOL 286. Introduction to Minerals & Rocks - GEOL 286 Laboratory.

**GEOL 293. Special Topics. 1-6 Hours.**

**GEOL 300. Geology of West Virginia. 3 Hours.**

PR: GEOL 103 and GEOL 104. Journey through geologic history of West Virginia with emphasis on the geology of public lands and fossil fuels. Local and overnight field trips are a required part of this course.

**GEOL 302. Geology of the National Parks. 3 Hours.**

PR: GEOL 103 and GEOL 104. Explore the geology of selected National Parks with emphasis on the plate tectonic setting and in-depth analysis of surface features. One overnight field trip is required as part of this course.

**GEOL 311. Stratigraphy and Sedimentation. 4 Hours.**

PR: GEOL 103 and (GEOL 103L or GEOL 104) and (GEOL 285 or GEOL 286 and GEOL 286L) and Coreq: GEOL 311L. Study of sediments and sedimentary rocks with an emphasis on the analysis of facies.

**GEOL 311L. Stratigraphy and Sedimentation Laboratory. 0 Hours.**

PR: Corequisite of GEOL 311. Stratigraphy and Sedimentation - GEOL 311 Laboratory.

**GEOL 321. Geomorphology. 3 Hours.**

PR: GEOL 101 or GEOG 107 or (SUST 207 and 207L). An examination of earth-surface processes and landforms, with emphasis on environmental geomorphology, streams, floods, glaciers, and landslides.

**GEOL 331. Paleontology. 3 Hours.**

PR: GEOL 103 and GEOL 104 and STAT 211. Uses of paleontological data in geology; biostratigraphy, paleoecology, evolution, extinction, and biogeography; lab emphasis on identification and utilization of marine invertebrate fossils. (Required weekend field trip at student's expense.).

**GEOL 341. Structural Geology. 3 Hours.**

PR: GEOL 286 with a minimum grade of C- and PR or CONC: PHYS 101 or PHYS 111 and Coreq: GEOL 341L. Introduction to rock deformation processes and the interpretation of geologic structure, with applications to the structure and tectonic evolution of the Appalachian Mountains. (Several one-day field trips required.).

**GEOL 341L. Structural Geology Laboratory. 1 Hour.**

PR or CONC: GEOL 341 or GEOL 342. Structural Geology - GEOL 341 Laboratory.

**GEOL 342. Structural Geology for Engineers. 3 Hours.**

PR: GEOL 101 and PHYS 111. Introduction to rock deformation processes and the development and interpretation of geologic structures. (Several one-day field trips required.).

**GEOL 351. Geomathematics. 3 Hours.**

PR: GEOL 101 and (MATH 154 or MATH 155). Mathematical methods and applications in geology, geochemistry, geophysics, and environmental science. Review of basic mathematics, differential and integral calculus. Use of computers (Excel) as geological problem-solving tools.

**GEOL 365. Environmental Geology. 3 Hours.**

PR: SUST 101 and SUST 101L. Principles, practice, and case histories in application of earth science to environmental problems. Includes: water quality; landslides; subsidence; waste disposal; legal aspects; and geological aspects of land-use planning.

**GEOL 373. Introduction to Petroleum Geology. 3 Hours.**

PR: GEOL 101. Origin, geologic distribution, methods of exploration and exploitation, uses and future reserves of petroleum and natural gas in the world.

**GEOL 376L. Research Methods Laboratory. 3 Hours.**

PR: GEOL 101 and (GEOL 101L or GEOL 102) and GEOL 103 and (GEOL 103L or GEOL 104). Research Methods is a one-semester, three-hour course in the required WVUteach sequence. It is one of several content courses specially designed to meet the needs of future teachers. WVUteach students pursuing degrees in Geology or Environmental Geoscience should register for the GEOL section of BIOL/CHEM/GEOL/PHYS 376.

**GEOL 386. Igneous and Metamorphic Petrology. 3 Hours.**

PR: GEOL 284 or GEOL 286 with a minimum grade of C-. An investigation of the processes that produce igneous, volcanic, and metamorphic rocks on Earth and the terrestrial planets, with special emphasis on how processes fit into the plate tectonic paradigm. Labs will focus on the description and interpretation of igneous and metamorphic rocks in hand specimen and thin sections. (Required weekend field trip.).

**GEOL 388. Introduction to Geochemistry. 3 Hours.**

PR: GEOL 101 and CHEM 115. This course is an introduction to the big-picture of geochemistry focused on using chemical tools to understand earth processes from the very old to very new, the very small to very large.

**GEOL 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**GEOL 400. Environmental Practicum. 1 Hour.**

PR: GEOL 200 and PR or CONC: GEOL 331 or GEOL 365 or GEOL 376 or GEOL 411 or GEOL 463 or GEOL 472 or GEOL 486 or GEOG 317 or GEOG 443 or GEOG 454 or GEOG 455 or GEOG 456 or GEOG 461. Capstone Seminar. Students prepare for a career as Environmental Geoscientists; critically reflect on the curriculum in the major; orally present their research projects carried out in the co-requisite. Research-intensive Geology and Geography course.

**GEOL 403. Geological Data Analysis. 3 Hours.**

PR or CONC: GEOL 311 and GEOL 341 and GEOG 350. Application of geological skills to real-world problems through a series of projects similar to those carried out by geological professionals. Analysis and interpretation of geological datasets using a combination of computer and traditional tools.

**GEOL 404. Geology Field Camp. 3-6 Hours.**

PR: GEOL 311 and GEOL 341 and consent. Practical experience in detailed geological field procedures and mapping. (Living expense in addition to tuition must be paid at time of registration.).



**GEOL 419. Advanced Petroleum Geology. 3 Hours.**

PR: GEOL 341 and PR or CONC: GEOL 311. Topics include petroleum source rocks, primary and secondary migration of oil, porosity and permeability development in reservoirs. Focus on the nature of hydrocarbon resources, their importance to civilization, and on the role of the petroleum professional in the industry and society.

**GEOL 454. Environmental and Exploration of Geophysics 1. 3 Hours.**

PR: PHYS 102 and (MATH 156 or GEOL 351). Basic theory, computer modeling, and use of gravitational, magnetic, resistivity, and electromagnetic methods in the evaluation or shallow targets of interest to environmental, hydrological, and hazardous waste site investigations.

**GEOL 460. Physical Volcanology. 3 Hours.**

PR: GEOL 286 with a minimum grade C- and (MATH 128 or PR or CONC: MATH 129 or MATH 153 or MATH 154 or MATH 155). An investigation of the physical processes that produce volcanic eruptions and their deposits on Earth and in our solar system. Labs will focus on the description, analysis, and interpretation of rocks and deposits, and geospatial and numerical analysis of volcanological data.

**GEOL 462. Introductory Hydrogeology. 3 Hours.**

PR: (GEOL 101 and GEOL 102) or (GEOG 110 and GEOG 111) and (MATH 126 and MATH 128) and (CHEM 110 or (CHEM 110A and CHEM 110B) or CHEM 111 or CHEM 115). Basic principles of hydrogeology, emphasizing geologic occurrence of ground water, vadose (soil) water, wells, springs, ground water interaction with streams, and ground-water chemistry, pollution, and pollution restoration.

**GEOL 463. Physical Hydrogeology. 3 Hours.**

PR: GEOL 101 and MATH 126. Principles of ground-water hydrology, emphasizing the physical occurrence and movement of ground water. Topics include aquifer properties, flow net analysis, and hydraulic aquifer testing.

**GEOL 466. Cave and Karst Geology. 3 Hours.**

PR: (GEOL 101 and GEOL 102) or (GEOG 110 and GEOG 111) and (CHEM 110 or (CHEM 110A and CHEM 110B) or CHEM 111 or CHEM 115). Study of the nature and origins of cave and karst landforms, terrains, geomorphology, hydrogeology, environmental hazards, and petroleum and mineral ore deposits. (Two required field trips.).

**GEOL 469. Applied Hydrogeology Seminar. 1 Hour.**

A review of professional practices and opportunities in hydrogeology. Seminar talks by hydrogeological professionals from WVU, industry, and government agencies. Field trips to examine hydrogeological practices and techniques.

**GEOL 472. Energy Geology. 3 Hours.**

PR: GEOL 101 and GEOL 102 and GEOL 103 and GEOL 104. Energy needs will continue to increase as the human population grows and the quality of life increases for the world. To provide these energy needs, humans draw on a wide portfolio of renewable and nonrenewable energy resources. Examination of the geologic aspects and science of energy and present a balanced view of humanity's past, present and future energy resource options.

**GEOL 479. Log Analysis-Reading the Rocks. 3 Hours.**

PR: Consent. The Geosciences require knowledge of the sub-surface properties. Students learn the theory and practice behind a range of subsurface methods. Experience with challenges in geology.

**GEOL 484. Minerals and the Environment. 3 Hours.**

PR: GEOL 284 or GEOL 200. Study of the importance of minerals in human health and the environment. Includes examples of environmental problems that are caused by minerals and solutions to environmental problems that involve minerals.

**GEOL 486. Environmental Isotopes. 3 Hours.**

PR: CHEM 111 or CHEM 115. Isotopes are excellent natural tracers and integrators of important environmental, geological and ecological processes. Topics include basic principles of stable isotope geochemistry and their applications in environmental sciences, hydrology, plant/animal ecology, climate reconstruction, and energy.

**GEOL 488. Environmental Geochemistry. 3 Hours.**

PR: GEOL 351 and CHEM 116. Basic review of physical and aqueous chemistry, discussion of basic geochemical processes; calcium carbonate chemistry, diagenetic processes, weathering, the silicate and iron system.

**GEOL 489. Junior-Senior Seminar. 1 Hour.**

The presentation and discussion of topics regarding graduate school and career preparation for geology majors. Grading will be Pass/Fail.

**GEOL 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**GEOL 491. Professional Field Experience. 1-18 Hours.**

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.

**GEOL 492. Directed Study. 1-3 Hours.**

Directed study, reading and/or research.

**GEOL 493. Special Topics. 6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**GEOL 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.



**GEOL 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**GEOL 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**GEOL 497. Research. 1-6 Hours.**

Independent research projects.

**GEOL 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**GERMAN (GER)****GER 293. Special Topics. 6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**GER 301. Language and Society. 3 Hours.**

PR: GER 204 or equivalent. Advanced communication course that focuses on German history from 1800-1950. Students will develop all four language skills and review important grammatical structures.

**GER 302. Conversations in Context 2: Germany Today. 3 Hours.**

PR: GER 204. Advanced communication course that focuses on current events in Germany. Students will develop all four language skills and review important grammatical structures.

**GER 303. Youth Culture in German-Speaking Countries. 3 Hours.**

PR: GER 204. Advanced communication course that focuses on the exploration of identity, politics, history, and literature through the stories and experiences of young people in German-speaking cultures.

**GER 304. Culture and Science in German-speaking Countries. 3 Hours.**

PR: GER 204. Advanced communication course that focuses on inventors and innovations of German-speaking countries, the role of science in the lives of human beings, and the ethical implications of scientific research and advancement on individuals and global societies.

**GER 361. German for Professional Purposes. 3 Hours.**

PR: GER 204 or Consent. Advanced communication course that explores professional life in Germany. Students will develop practical communication skills while developing a broad understanding of the professional climate in Germany and the role of Germany in commerce and industry.

**GER 393. Special Topics. 1-6 Hours.**

PR: Consent Investigation of topics not covered in regularly scheduled courses.

**GER 401. TurboDeutsch: Intensive German in Review. 3 Hours.**

PR: GER 301 or GER 302 or GER 303 or GER 304. TurboDeutsch is an advanced German language course that examines the fundamentals of the German language. Students will review basic structures and learn more complex forms in the language. This structural review will be contextualized through the study of current events in Germany.

**GER 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**GER 491. Professional Field Experience. 1-18 Hours.**

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.

**GER 492. Directed Study. 1-3 Hours.**

Directed study, reading, and or research.

**GER 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**GER 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**GER 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**GER 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**GER 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## GERONTOLOGY (GERO)

### **GERO 212. Introduction to Gerontology. 3 Hours.**

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.

### **GERO 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

### **GERO 410. Rural Gerontology. 3 Hours.**

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. (Equivalent to GERO 681.).

### **GERO 412. Public Policy of Aging. 3 Hours.**

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.).

### **GERO 418. Aging, Women and Culture. 3 Hours.**

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.

### **GERO 491. Professional Field Experience. 1-18 Hours.**

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.

### **GERO 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

### **GERO 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

## HISTORY (HIST)

### **HIST 101. European History: Antiquity to 1600. 3 Hours.**

(HIST 101 does not have to precede HIST 102.) A survey of the major developments in European history beginning with the ancient Mediterranean world and concluding with Reformation Europe.

### **HIST 102. European History since 1600. 3 Hours.**

(HIST 102 may precede HIST 101). A survey of major developments in European history since 1600 with attention to Europe's emerging industrial society and changing role in world affairs.

### **HIST 104. Latin America: Past and Present. 3 Hours.**

Introduction to Latin American history, stressing the relationship between the past and present. Special emphasis is given to economic problems, political development, and social change in modern Latin America.

### **HIST 105. The Middle East. 3 Hours.**

History of the Middle East from the rise of Islam (610 C.E.) to Twentieth Century. Special attention given to religion, gender issues, political developments, economic problems, relations with the West, cultural patterns and changes in the modern era.

### **HIST 106. East Asia: An Introduction. 3 Hours.**

Focuses on modern China, Japan, and Korea. Consideration of important problems facing each nation today together with the cultural and historical developments which help explain contemporary affairs in East Asia.

### **HIST 109. Introduction to African History. 3 Hours.**

Broad and general introductory survey of the history of Africa from the ancient to the modern period. Examines the continent's history by drawing on case studies from East, Central, North, South, and West Africa. Highlights indigenous initiatives and developments as well as African responses to European contacts through the trans-Atlantic slave trade and colonialism.

### **HIST 152. Growth of the American Nation to 1865. 3 Hours.**

(HIST 152 does not have to precede HIST 153.) Examines the basic political, economic, and social forces in formation and development of the United States before 1865. Emphasis on national development from independence through the Civil War.

### **HIST 153. Making of Modern America: 1865 to the Present. 3 Hours.**

(HIST 153 may precede HIST 152.) Continues the examination of basic political, economic, and social forces in the development of the United States since the Civil War.

### **HIST 179. World History to 1500. 3 Hours.**

Comparative history of Africa, Asia, and Europe from earliest times until 1500. Political, economic, social, and religious developments with emphasis on patterns of authority, the individual, nature, and society.

### **HIST 180. World History Since 1500. 3 Hours.**

Comparative history of Africa, Asia, and Europe 1500 to the present. Political, economic, and social developments with emphasis on patterns of authority, the individual, nature, society, and the impact of the West.

**HIST 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**HIST 198. History Fundamentals. 1 Hour.**

This course introduces students to the fundamental skills necessary to successfully pursue the study of History. The course focuses on reading historical literature, expressing historical ideas in written and oral forms, note taking, time management, test taking, and study skills.

**HIST 199. Orientation to History. 1,2 Hour.**

Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

**HIST 201. History of Ancient Times: Stone Age to the Fall of Rome. 3 Hours.**

Ancient civilizations of the Near East and the Mediterranean.

**HIST 202. History of Modern Legal Thought. 3 Hours.**

Surveys the history of modern European and American legal thought focusing on the central problem of jurisprudence, "what is law?" and examines how thinkers have answered the question in the modern period, with a particular emphasis on the nineteenth and twentieth centuries.

**HIST 203. Introduction to Medieval Europe. 3 Hours.**

Treats the emergence of the distinctive culture of Western Europe from the Fall of Rome to the Renaissance, considering the transformation and interaction of politics, economics, society, religion, and ideas.

**HIST 204. Renaissance and Reformation. 3 Hours.**

Medieval antecedents; humanism and the new learning; renaissance art; Machiavellian politics; demographic and social trends; Luther and Calvin, Radical reformers, Council of Trent; popular culture; wars of religion.

**HIST 205. Absolutism & Enlightenment. 3 Hours.**

Europe from 1600-1800. End of religious wars; emergence of absolutism; nobility and court life; mercantilism; expansion; theological and philosophical crisis; empiricism and scientific revolution; philosophes and Enlightenment; French Revolution.

**HIST 207. Revolutionary Europe. 3 Hours.**

Traces the development of European history from the reign of Louis XV to the end of the Franco-Prussian War. Political and social history emphasized.

**HIST 209. Twentieth Century Europe. 3 Hours.**

Traces the major political, economic, and social developments of Europe from World War I to the present.

**HIST 210. Modern Military History. 3 Hours.**

Military history from the American Revolution to the present, stressing the evolution of warfare with particular attention to strategy, tactics, weaponry and the consequences of war.

**HIST 211. The Mediterranean 1200-1800. 3 Hours.**

Interactions between societies surrounding the Mediterranean (Christians, Muslims, and Jews from Europe, the Ottoman Empire, Egypt, the Maghrib) from the late Abbasids to Napoleon. Trade, warfare, family life, and religion.

**HIST 215. History Through Public History Sites. 3 Hours.**

Examination of history through the lens of historic places, making use of the methods and tools of public historians.

**HIST 217. History of Russia to 1917. 3 Hours.**

Medieval Russia and the development of autocracy; imperial expansion and serfdom; response to the West from Peter I to Alexander II; Great reforms, economic transformations, revolutionary movement; complex of crises after 1900.

**HIST 218. History of Russia: 1900-Present. 3 Hours.**

Revolution and reform to 1914; World War, 1917 revolutions; NEP and Stalinism to 1939; World War II and postwar Stalinism; reform under Khrushchev and Brezhnev; Gorbachev and dissolution of USSR; post-Soviet trauma.

**HIST 220. The Holocaust. 3 Hours.**

The origins and development of Nazi genocide against European Jews, focusing on the experience of the victims, the motives of the killers, and the inaction of bystanders.

**HIST 221. History of Modern Germany. 3 Hours.**

Overview of German history emphasizing eighteenth through the twentieth centuries. Special attention focuses on the development of nationalism, state-building, political culture and continuity in German history.

**HIST 224. Climate Change: A Global History. 3 Hours.**

Interdisciplinary history examination of the causes and consequences of climate change. Students learn about how the Industrial Revolution transformed the relationship of human societies with the environment, and then they draw on this history to consider the ethical and political challenges involved in solving the climate crisis today and in the future.

**HIST 225. Gandhi and Beyond: Modern History of South Asia. 3 Hours.**

History of India, Pakistan, and Bangladesh from the early modern period to the present; traditional background, Muslim conquests, British Raj, nationalist and independence movements, partitions, independent states, and current issues.

**HIST 241. Latin America: Culture, Conquest, Colonization. 3 Hours.**

History of the formative period of Latin America, emphasizing the social and economic interaction between Indians, Europeans, and blacks from the conquest to the wars for independence in the early nineteenth century.

**HIST 242. Latin America: Reform and Revolution. 3 Hours.**

History of modern Latin America, concentrating on the durability of nineteenth-century social, economic, and political institutions, and the twentieth-century reformist and revolutionary attempts to change those institutions.

**HIST 250. West Virginia. 3 Hours.**

Historical foundations and development of West Virginia, with particular emphasis upon the growth of the government, the economy, and the traditions of the state.

**HIST 256. History of the American Revolution: 1763-1790. 3 Hours.**

The immediate origins and long-range consequences of the movement for independence from Great Britain; includes the 1775-1790 controversy over the charter of new state and federal governments.

**HIST 257. Rise and Fall of the US Republic. 3 Hours.**

American history from the Revolution to the Civil War is examined in detail, with particular attention to the key personalities of the era, the development of political parties, the movement westward, the beginnings of industrialization, and the sectional struggles that culminated in war.

**HIST 259. The United States: 1865-1918. 3 Hours.**

Development of the United States during the most intensive phase of American industrialization; special emphasis on ideas of selected Americans on how to cope with the increase in poverty and social malaise which accompanied economic development; attention is also given to the roots of American imperialism.

**HIST 261. Recent America: The United States since 1918. 3 Hours.**

(Primarily for non-History majors.) The 1920's, the New Deal, World War II, and a survey of developments since World War II.

**HIST 264. American Indian History. 3 Hours.**

Surveys the history of Native peoples of what is now the United States, from pre-contact to the present. Ethnohistorical approach emphasizes cultural development as well as interactions with European and American peoples and policies.

**HIST 276. Twentieth Century American Foreign Relations. 3 Hours.**

A survey of U.S. foreign relations. Topics include security, economic, political and cultural aspects of U.S. foreign relations.

**HIST 277. Revolutions in Science and Technology. 3 Hours.**

Examines particular periods of intensified change in science and technology, to develop general understanding of scientific and technical change. Episodes may include the Scientific, Industrial, Darwinian, or other revolutions.

**HIST 281. Peasants to Agribusiness: History and Problems of Modern Agriculture. 3 Hours.**

Surveys the modernization of world agriculture from 17th century Europe to the Green Revolution, and its economic, social, and political consequences. (Alternate years.).

**HIST 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**HIST 300. Greece and Rome. 3 Hours.**

Covers the Minoan and Mycenaean civilizations, Archaic and Classical Greece, Alexander the great and the Hellenistic Age, the Roman Republic, the Etruscan and Carthaginian states, and the rise of the Roman Empire.

**HIST 301. The Great Depression. 3 Hours.**

Analyzes the causes of the Great Depression in the United States and ways in which it transformed American life, culture, and institutions.

**HIST 302. Practicing History. 3 Hours.**

Acquisition of the skills necessary to be an effective historian, including critically reading and analyzing primary and secondary sources, learning the basics of historiography, and creating an independent research topic.

**HIST 304. History of Sacred Places. 3 Hours.**

Begins by analyzing the meaning of sacred and then proceeds to a comparative historical, religious, and political discussion of selected sacred places.

**HIST 313. France from 1450 to 1750. 3 Hours.**

French history from Charles VII to Louis XV, Italian wars, religious conflict, absolutism, economic and commercial developments, philosophes. Focus on the evolution of national political and cultural unity between the Renaissance and Enlightenment.

**HIST 314. France Since 1815. 3 Hours.**

French history from the French Revolution to the present. Emphasizes the development of a modern industrial society, nineteenth-century revolutions, the impact of the World Wars, and France's role in new Europe.

**HIST 317. German Central Europe, 1648-1900. 3 Hours.**

Explores empires, states and nations in Central Europe; it includes the Habsburg Monarchy and Holy Roman Empire following the devastation of 30 years of War, Enlightenment, State- building, Industrialization and Nation-building to the Great War.

**HIST 318. Twentieth Century German Central Europe. 3 Hours.**

Explores the two World Wars, Holocaust, the Cold War, National Socialist, Communist, and Democratic regimes and Austria as well as the reunification of Germany following Revolutions of 1989.

**HIST 319. Myth and Culture in Pre-colonial Africa. 3 Hours.**

Pre-colonial history of Africa from its earliest beginning to the mid-nineteenth century. Examines aspects of the diverse social, cultural, economic, and political institutions of pre-colonial Africa, including: the peopling of Africa, interactions between people and their environment, social organization and cultural practices, and traditional and non-traditional belief systems.

**HIST 320. Pre-Colonial Africa. 3 Hours.**

History of Africa, earliest times to mid-nineteenth century. Focus on population and interaction, state formation, trade in sub-Saharan Africa, and on impact of external influences such as Christianity and Islam.

**HIST 321. Colonial Africa and Independence. 3 Hours.**

History of Africa from the middle of the nineteenth century to the 1960s. Political and economic trends will form major focus.

**HIST 325. Modern China. 3 Hours.**

Introduction to modern China (since 1839) with attention to China's Confucian heritage; the Chinese effort to modernize in the face of Western diplomatic and economic pressure; specific attention to China's nationalist and communist revolutionary traditions.

**HIST 326. Modern Japan. 3 Hours.**

Japan since 1868, development of earlier institutions and ideas, especially Tokugawa Era (1600-1868); nineteenth- and twentieth-century economic change and its social, political and diplomatic implications.

**HIST 330. History of Italy, 1200-1800. 3 Hours.**

Medieval communes and principalities, humanism and the Renaissance, Habsburg-Valois wars on the peninsula, Baroque and scientific court culture, seventeenth-century crisis, state-building and absolutism, Enlightenment and Napoleonic invasion.

**HIST 331. History of Italy since 1800. 3 Hours.**

Napoleonic occupation, regional states, Risorgimento, liberal democracy, emigration, industrialization, World War I, Mussolini and Fascism, postwar reconstruction, cinema, partyocracy, images of Italy, 1900s reforms.

**HIST 346. Women, Gender, and Kinship in Premodern Europe. 3 Hours.**

Traces key shifts in the theory and practice of European family structure, gender roles, marriage, demography, inheritance, household labor, property holding, and child-rearing from 500BC to 1700.

**HIST 348. The International Middle East. 3 Hours.**

Overview of both recent Middle Eastern history, and the Middle East's relationship with the rest of the world, and how those interactions changed over time.

**HIST 350. The Aztec, Maya, and Inca. 3 Hours.**

Survey of political, religious, and social structures of the Aztec, Maya and Inca civilizations; exploring their origins, daily lives, cultural productions, understanding of the universe, and perspectives on Europeans.

**HIST 353. 1920s America. 3 Hours.**

Analyzes the social, economic, political, and technical changes that transformed life and culture in the United States during the 1920s.

**HIST 358. United States Cultural History: 1819-1893. 3 Hours.**

Examines the cultural "panics" about identity and sensibility produced by capitalism, slavery, war and urbanization in the nineteenth-century United States.

**HIST 360. America in the 1960's. 3 Hours.**

Examines the social, cultural, political and economic events and outcomes of the 1960s, including the civil rights movement, political economy, new left, counterculture, Great Society, rights movements, and the conservative ascendancy.

**HIST 365. The Vietnam War. 3 Hours.**

United States participation in the 1946-1975 fighting in Indochina. United States involvement in the political and military conflict, and the impact of the war on the United States.

**HIST 370. Latin America and the World. 3 Hours.**

Introduces students to different ways of thinking about Latin America's relationship with the world and how it has changed over time. Given the United States' historic impact on Latin America's relationship with the world, the course focuses on the legacy of intra-hemispheric relations on Latin America alongside Latin America's impact on the wider world.

**HIST 375. Hollywood and History. 3 Hours.**

Examines twentieth century American culture, politics, and society through film. It explores the relationship between film and history using films as primary sources for understanding the past.

**HIST 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**HIST 402. Greece: From Troy to Alexander. 3 Hours.**

Formation of Greek civilization, including social and economic factors, culture, interactions with "barbarians," the Persian invasions, the Greek conquest of an Asian empire, citizenship, sex, gender, and warfare.

**HIST 403. Rome: From Romulus to Zenobia. 3 Hours.**

Formation of Roman civilization, including cultural transformations, conquest of Italy and the Mediterranean, the fall of the Republic, the entertainment and sport industry, the rise of Christianity.

**HIST 409. Field Methods in Historic Preservation. 3 Hours.**

Outlines professional historic preservation fundamentals associated with inquiry, documentation and analysis. A variety of research approaches expose students to both primary and secondary sources that are typically utilized when conducting reconnaissance or intensive level historic surveys or in preparing HABS/HAER or NRHP documentation.

**HIST 412. Introduction to Public History. 3 Hours.**

Introduction to a wide range of career possibilities for historians in areas such as archives, historical societies, editing projects, museums, business, libraries, and historic preservation. Lectures, guest speakers, field trips, individual projects.

**HIST 414. The Great War, 1914-1918. 3 Hours.**

Focuses primarily on the First World War in Europe and the Middle East while mindful of its global contexts and implications. In addition to the diplomatic, political and military history of the war, the course addresses the war on various home fronts and the vast territories that came under Central Power and Allied occupation.

**HIST 415. Early Modern Law & Society. 3 Hours.**

Examines the ways in which laws and legal practice structured social relations in Europe between the Middle Ages and the French Revolution, focusing on the historical development of legal ideas, the relation of law to political authority and governance, and how various social actors used law to pursue their interests.

**HIST 416. The French Wars of Religion. 3 Hours.**

Detailed analysis of the tangled roots of this conflict (1562-1629), the salient events of the period, and their long-term impact. Popular culture, military developments, theology, and court politics.

**HIST 417. World War II in Europe. 3 Hours.**

Impact of World War II on political culture and moral fabric; emphasis on themes of invasion, occupation, collaboration, resistance, survival, and retribution. (Alternate years).

**HIST 418. Eastern Europe Since 1945. 3 Hours.**

The social, economic, intellectual, cultural, and political history of Eastern Europe since the Second World War. Special emphasis on the causes of the East European revolutions of 1989 and the problems of post-communist transition. (Offered every third semester.).

**HIST 419. Revolutionary Russia: 1900-1953. 3 Hours.**

Crisis of late Imperial Russia, Silver Age, World War I, 1917 revolutions; Civil War, renewed empire, crisis of 1921; NEP, policy debates, succession; Stalinism to 1939; World War II, post war Stalinism; initial repudiation of Stalin.

**HIST 420. USSR and After: 1953 to Present. 3 Hours.**

Crisis of late Stalinism; Khrushchev, destalinization, reforms; Brezhnev, stabilization, militarization, corruption, stagnation; Gorbachev, perestroika, glasnost, disintegration; Yeltsin, shock therapy, criminalization, decline.

**HIST 421. Hitler and the Third Reich. 3 Hours.**

Myths and realities of Hitler's public and personal life; emphasis on rise to power, party, ideology, and propaganda techniques; position and policies as Fuehrer.

**HIST 422. Twentieth-Century Germany from Weimar to Bonn. 3 Hours.**

The Weimar Republic, the Third Reich, and the two German states created after World War II.

**HIST 423. History of Fascism. 3 Hours.**

Examines history of fascism in interwar Europe and postwar neo-fascism, using scholarship, art, propaganda, and film. Topics include origins, regime culture, the totalitarian state, and violence.

**HIST 424. Britain 1455-1603. 3 Hours.**

England from Richard II to Elizabeth I, covering developments in politics, religion and society, ranging from the War of the Roses and the plague to Protestantism and Shakespeare.

**HIST 427. East Africa to 1895. 3 Hours.**

East Africa from earliest times to the beginning of European control. Population movement and interaction, development of varying types of policy, revolutionary change, and the European scramble for East Africa form the major focus.

**HIST 428. East Africa Since 1895. 3 Hours.**

History of colonial rule and movement to independence in East Africa. Political, economic, and social changes will be examined with particular emphasis on the rise and triumph of African nationalism.



**HIST 430. Living and Dying in Medieval Europe. 3 Hours.**

Social and cultural examination of medieval Europe from 500 to 1500. Course themes include diet, relationships, labor, health and the body, material culture, and violence and law.

**HIST 432. Eighteenth Century Britain: 1715-1832. 3 Hours.**

The "Age of Aristocracy," the political, social, religious, economic, and intellectual impact of the Industrial, Agricultural, American, and French revolutions.

**HIST 433. West Africa to 1885. 3 Hours.**

West Africa from the earliest times to the imposition of colonial rule. Examines social, economic, political developments and interactions, and European scramble for West Africa. (Alternate years).

**HIST 434. West Africa from 1885. 3 Hours.**

Abolition of the transatlantic slave trade, imposition of colonial rule, colonial economic, social and administrative systems, the rise and triumph of African nationalism, West Africa since independence.

**HIST 435. History of Chinese Thought. 3 Hours.**

Explores the inception and development of the major traditions of social and political thought in China. Focuses on how certain political ideas and social practices arose in the Bronze Age and developed and interacted over millennia to inform all areas of life in premodern China.

**HIST 437. Africa in World History. 3 Hours.**

The course aims to reposition Africa and Africans in world history by recognizing their centrality and contributions to our modern heritage. It explores indigenous developments in Africa and cross-continental interactions between the continent and Asia, the Americas, Europe and Oceania that underscore the role of Africans in shaping their own history and influencing global interdependence.

**HIST 439. History of Modern Mexico. 3 Hours.**

Focusing on the 19th and 20th centuries, this course explores the peoples and cultures of Mexico from conquest to the present, including Spanish colonial period, Independence wars, early Republic, Mexican-American War, Revolution, Golden Age, and post-NAFTA period.

**HIST 440. Mexican Law from Montezuma to El Chapo. 3 Hours.**

An examination of the legal history of Mexico since the arrival of Spaniards in the early sixteenth century, exploring development of a Mexican legal culture that blended indigenous conceptions of the law with the Spanish legal framework, derived from both Roman and ecclesiastical traditions.

**HIST 441. Seventeenth Century Colonial America. 3 Hours.**

The establishment of England's American colonies and their development during a century of political, social, religious, and economic change and the interaction between events in Old and New Worlds. (Alternate years).

**HIST 442. Eighteenth Century America. 3 Hours.**

The social, political, and economic maturation of England's American colonies, the move toward independence, and the establishment of government at state and federal levels. (Alternate years).

**HIST 445. History of American Women. 3 Hours.**

Examination of the history of American women from 1607 to the present with emphasis on working conditions, women's rights, development of feminism, women's role in wartime, women in the family.

**HIST 450. Slavery and Capitalism in Antebellum America. 3 Hours.**

Examines the transatlantic economic system created by American slavery in the decades before the American Civil War, with special emphasis on the experiences of enslaved people and those who profited from enslaved people's labor as well as the cultural debates about the meanings of slavery's relationship to capitalism in this period.

**HIST 451. African-American History-1900. 3 Hours.**

African background, the slave trade and evolution of slavery in the New World. The attack on slavery and its destruction.

**HIST 452. African-American Since 1900. 3 Hours.**

Reconstruction, the age of reaction and racism, black migration, black nationalism, blacks in the world wars, and desegregation.

**HIST 453. Civil War and Reconstruction. 3 Hours.**

Causes as well as constitutional and diplomatic aspects of the Civil War; the role of American black in slavery, in war, and in freedom; and the economic and political aspects of Congressional Reconstruction.

**HIST 454. The Coming of the United States Civil War. 3 Hours.**

Analyzes social and economic transformations in the early American republic through an examination of the ideological heritage of the Revolution, capitalism, slavery, reform movements, immigration, popular culture, and political conflict before the Civil War.

**HIST 456. The Gilded Age in US History. 3 Hours.**

Examines responses of the American people and institutions to opportunities and problems of the late nineteenth century. Emphasis on rise of big business; labor organization; immigration; regular, reform, and radical politics; disappearance of the frontier; farm crisis; and origins of imperialism.

**HIST 457. The United States from McKinley to the New Deal, 1896 to 1933. 3 Hours.**

American national history from William McKinley to Franklin D. Roosevelt. Particular attention is given to great changes in American life after 1896; national political, economic, social, and cultural development; the Progressive Era in American politics; and alterations in American foreign relations resulting from the Spanish-American War and World War I.

**HIST 459. United States History: New Deal to Great Society. 3 Hours.**

Covers New Deal; World War II; Cold War, with emphasis on American social, political, technological, and cultural developments; United States domestic problems and foreign relations from 1945 to 1968.

**HIST 460. World War II in America. 3 Hours.**

Examines the American experience in World War II with an emphasis on the economic, social, and political impact of war on American society.

**HIST 463. American Foreign Relations to 1941. 3 Hours.**

American's foreign policy and involvement in international relations from the eighteenth century to the beginning of World War II.

**HIST 464. American Foreign Relations 1941 to Present. 3 Hours.**

America's foreign policy and growing involvement in international relations including the U.S. role in World War II, the Korean War and Vietnam.

**HIST 468. The Old South. 3 Hours.**

(For advanced undergraduate and graduate students.) History of the South exploring peculiar differences that led to an attempt to establish a separate nation. The geographical limitation permits a detailed study of economic and social forces within the context of the larger national history.

**HIST 469. The New South. 3 Hours.**

Integration of the South into the nation after the Civil War. Emphasis on southern attitudes toward industrialization, commercial agriculture, organized labor, and African-Americans. Special attention to the southern literary renaissance and conservative and progressive politics of the southern people.

**HIST 470. United States Civil Rights Movement. 3 Hours.**

Examines the recent scholarship, music, film and oral history of the 1950s-60s US Civil Rights Movement, examining its New Deal roots, post-Vietnam War legacies and the nature of American identity, citizenship, and political culture.

**HIST 473. Appalachian Regional History. 3 Hours.**

Historical survey of Central Appalachia's three phases of development: traditional society of the nineteenth century, the transformation of a mountain society by industrialization at the turn of the twentieth century, and contemporary Appalachia.

**HIST 474. The City in American History. 3 Hours.**

Examines aspects of urban change in nineteenth-century America, including capitalist transformation, crime, rioting, politics, popular culture, and the social conflict that emerged around efforts to regulate and reform the metropolis and its diverse populations.

**HIST 477. Working Class America. 3 Hours.**

This course is designed to introduce students to issues surrounding the American working class. It will explore changes in the modes of production, the impact of labor migrations, the emergence of working-class organizations, and the political and social ideologies of working people. Particular attention will be given to the impact of racial, ethnic and gender-based conflict on the emergence of working-class movements. Students will be encouraged to interpret historical material in the context of current workplace relations.

**HIST 478. American Immigration History. 3 Hours.**

Examines the cycles of immigration to the United States. Emphasis will be placed on the diversity of immigrant groups and their cultures, ethnic community formation, assimilation, immigration policies (especially guest worker and refugee policy), as well as anti-immigrant politics and nativism.

**HIST 484. Historical Research-Capstone. 3 Hours.**

PR: History major or consent. Capstone course which introduces historical research techniques. Completion and presentation of major research paper required.

**HIST 489. Introduction to Historic Preservation. 3 Hours.**

Introduction to historic preservation issues, including law, economics, not-for-profit organizations, site interpretation, architectural history, industrial archeology federal programs, downtown revitalization, and landmarks commissions.

**HIST 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**HIST 491. Professional Field Experience. 1-18 Hours.**

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.

**HIST 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**HIST 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**HIST 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**HIST 495. Independent Study. 1-6 Hours.**

HIST 495. Independent Study. 1-6 hr. Faculty supervised study of topics not available through regular course offerings.

**HIST 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**HIST 497. Research. 1-6 Hours.**

Independent research projects.

**HIST 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**HIST 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

**HUMANITIES (HUM)****HUM 101. Introduction to Western Civilization 1. 3 Hours.**

Presents the high points of Greco-Roman and Medieval European civilizations: their art, architecture, philosophy, religion, literature and music.

**HUM 102. Introduction to Western Civilization 2. 3 Hours.**

Presents the art, architecture, philosophy, religion, literature and music of the following periods in Western civilization: the Renaissance, the Age of Classicism and the revolutionary nineteenth and twentieth centuries.

**HUM 106. Promethean Myth, Modern Arts. 3 Hours.**

Introduces theme of Promethean individuality at the limits of humanistic pursuit, surveys archetypal characters as they have developed to the present, considering how skepticism had inspired art in diverse forms.

**HUM 107. The Humanities of Egypt. 3 Hours.**

This course will focus on the cultural history of Egypt from ancient until modern times.

**HUM 109. The Italian Renaissance. 3 Hours.**

Introduction to artistic and cultural developments during the Renaissance. In addition, the class will appreciate cross-cultural influences and examine the impact that the Renaissance had on Nineteenth-Century writers.

**HUM 112. Humanities of Greece. 3 Hours.**

Presents the art, architecture, philosophy, religion, literature, and history of Greece.

**HUM 113. Faculty Led Travel: Greece. 1 Hour.**

Learn about the art, architecture, philosophy, religion, literature, and history of Greece, through faculty led travel.

**HUM 231. Greek and Roman Civilization and Culture. 3 Hours.**

Examination of the numerous ways in which Greek and Roman cultures intersected, coincided, and at times collided. The relationship has no parallel in world history in that their contact created a unique fusion of cultural expression identified as "Greco-Roman."

**HUM 232. Greek and Roman Myths. 3 Hours.**

Introduction to the primary characters and most important stories of classical Greek and Roman mythology, with examination of key aspects of history and culture, including art, literature, philosophy, and religion.

**HUM 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**HUM 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**HUM 492. Directed Study. 1-3 Hours.**

Directed study, reading and/or research.

**HUM 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**HUM 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**HUM 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**HUM 499. Global Service Learning. 1-3 Hours.**

PR: Consent Theory and practice of global service learning. The main objective will be to pair the experimental aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

## INTERNATIONAL STUDIES (INTS)

### **INTS 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

### **INTS 199. Orientation to International Studies. 1,2 Hour.**

Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

### **INTS 288. Professional Development: Success After International Studies. 1 Hour.**

PR: INTS 191. Students develop professional skills, both oral and written, including resume and cover letter writing, interviewing skills, conducting a successful job search, and the graduate school application process. Designed for international studies majors.

### **INTS 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

### **INTS 300. Social Inquiry in International Studies. 3 Hours.**

PR: POLS 260. This course is an introduction to the fundamental concepts and research methods that form the foundation of international studies. Primary focus is on research design, such as the steps and data collection techniques necessary to build and execute a plan to test an idea or hypothesis in international studies.

### **INTS 360. The European Union and Contemporary European Affairs. 3 Hours.**

PR: Enrollment in the WVU Strasbourg Semester. An introduction to the European Union with a focus on its involvement in contemporary European affairs, including foreign policy, economic, and human rights concerns and issues. Taught as part of the WVU Strasbourg Semester, with site visits to EU institutions in Brussels, Strasbourg, and Luxembourg.

### **INTS 361. European Identity and French-German Cooperation along the Rhine. 3 Hours.**

Examination of European identity as the basis of cooperation between Germany and France since 1945. Class will examine the forms of cooperation through lectures and site visits in Germany and France. Emphasis is on the historical and cultural sources of cooperation after WWI and WWII as well as the rise of the European Union.

### **INTS 362. . 3 Hours.**

Examines socially responsible business practices and leadership in Europe, focusing on democratic institutions, sustainability, and intercultural communication. Taught as part of the WVU Strasbourg Semester, students will develop leadership competencies through case studies, simulations, and experiential visits.

### **INTS 388. Professional Development: The Job Search. 1 Hour.**

PR: INTS 288. Designed for international studies majors, this course will develop skills, both oral and written, including professional document preparation, conducting a successful job search, applying for a nationally competitive scholarship, and the graduate school application process.

### **INTS 488. Capstone International Studies. 1-3 Hours.**

Capstone experience required for all majors. Options include study abroad, internships, simulations, and senior research projects.

### **INTS 488A. Capstone International Studies. 1-3 Hours.**

Capstone experience required for all majors. Options include study abroad, internships, simulations, and senior research projects.

### **INTS 491. Professional Field Experience. 1-18 Hours.**

PR: Consent. (May be repeated for 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.

### **INTS 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

### **INTS 495. Independent Study. 1-6 Hours.**

Faculty-supervised study of topics not available through regular course offerings.

### **INTS 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

## LANGUAGE TEACHING METHODS (LANG)

### **LANG 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

### **LANG 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LANG 321. Language Matters. 3 Hours.**

Focuses on issues regarding language, culture, and "myths," including facts about language learning, cultural dynamics in relation to the use of language, and current cross-cultural issues in the aspect of language as a medium.

**LANG 322. Second Language Acquisition. 3 Hours.**

Study of linguistic concepts, development patterns, and contributing factors relevant to second language acquisition.

**LANG 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LANG 421. The Teaching of Foreign Languages. 3 Hours.**

PR: Consent. Required of all students who are prospective foreign language teachers on the secondary level.

**LANG 422. Second Language Reading. 3 Hours.**

PR: LING 101 or LING 311 or equivalent. Study of the second language reading process, relevant research findings, curricular issues, and classroom instructional practices.

**LANG 423. Teaching English Overseas. 3 Hours.**

Teaching English Overseas is an introductory course focusing on principles and practices of teaching English as an international language, with emphasis on how these experiences are shaped by cultural, economic, educational, institutional, and social contexts.

**LANG 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**LANG 491. Professional Field Experience. 1-18 Hours.**

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.

**LANG 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**LANG 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LANG 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**LANG 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**LANG 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**LANG 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**LEADERSHIP STUDIES (LDR)****LDR 201. Principles of Leadership. 3 Hours.**

This course serves as an introduction to leadership theory and practice. The course will examine various aspects of the literature on leadership; provide practice for developing leadership skills; and offer personal experiences for self-reflection.

**LDR 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LDR 301. Problems in Leadership. 3 Hours.**

PR: LDR 201. Students will survey a series of case studies, both historical and imagined, in which leadership either succeeds or fails.

**LDR 330. Leadership and Athletics. 3 Hours.**

PR: LDR 201. Examines leadership in the context of sport with historical and contemporary examples. Different levels of sport will be discussed. Issues related to followership and organizational culture, relevance of motivational theory, and team relationships are explored.

**LDR 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LDR 401. Leadership in Action. 3 Hours.**

PR: LDR 201 and LDR 301. This course serves to demonstrate that students have learned how strong, innovative leadership leads to organizational change. Students will tailor this capstone- level/service-learning course to suit their own major and interests.

**LDR 435. Women and Leadership. 3 Hours.**

Uses academic literature related to leadership, women, and some feminist theory to analyze differences in female and male leadership characteristics, behaviors, and effectiveness.

**LDR 445. Intersections in Leadership. 3 Hours.**

The objective of this course is to examine and evaluate leadership in and among people and their environment. Topics include intersectionality, multi-cultural leadership theories, and environmental sustainability. This course serves as an elective for both the Minor in Leadership Studies and Graduate Certificate in Leadership.

**LDR 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice such as a tutor or assistant.

**LDR 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LDR 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**LDR 498. Honors. 1-3 Hours.**

PR: Students in the Honors program and consent by the honors director. Independent reading, study or research.

**LDR 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

## LINGUISTICS (LING)

**LING 202. Global Englishes. 3 Hours.**

Examination of historical, linguistic, and sociopolitical developments leading to the internalization of English and the subsequent emergence of new global Englishes. Exploration of debates around the role and status of English and how its spread has affected local languages. Perspectives from linguistics, sociolinguistics, postcolonial studies, and English language teaching will be adopted in the analysis of global Englishes.

**LING 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LING 298. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**LING 311. Introduction to Structural Linguistics. 3 Hours.**

PR: ARBC 203 or CHIN 203 or CLAS 203 or FRCH 203 or GER 203 or ITAL 203 or JAPN 203 or PORT 203 or RUSS 203 or SPAN 203 or equivalent. Required of foreign language majors. A detailed examination of language structure (phonology, morphology, and syntax) and its relation to language use (sociolinguistics).

**LING 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LING 402. Structure of Modern French. 3 Hours.**

PR: LING 311 and 18 hours of French or consent. Study of phonology, morphology, and syntax of modern French together with a contrastive analysis of French and English.

**LING 411. Phonology. 3 Hours.**

PR: LING 101 or LING 311. Description of sounds and sound systems in language. Articulatory phonetics. Structuralist and generative approaches to phonemics.

**LING 412. Syntax. 3 Hours.**

Emphasis on generative syntax in English, German, Romance and Slavic languages.

**LING 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**LING 491. Professional Field Experience. 1-18 Hours.**

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.

**LING 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**LING 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**LING 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**LING 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.



**LING 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**LING 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**MATHEMATICS (MATH)****MATH 121. Intro Concepts Of Mathematics. 3 Hours.**

(Designed for non-science majors who do not need the techniques of mathematics for other course work in their programs.) Topics in modern mathematics.

**MATH 122. Quantitative Skills and Reasoning. 3 Hours.**

PR: Satisfactory placement through ACT/SAT or ALEKS. Introductory study of quantitative and reasoning skills needed for success in science, technology, engineering, and mathematics.

**MATH 124. Algebra with Applications. 3 Hours.**

PR: Minimum ACT/SAT math score, or satisfactory performance on departmental placement examination, or MATH 122 with a minimum grade of C-, (prerequisites may vary on regional campuses). Study of algebra with an emphasis on applications for science, business, technology, and social science. Topics include graphing and solving problems using linear, quadratic, square-root, logarithmic, and exponential functions, solving equations, performing operations on matrices.

**MATH 126. College Algebra. 3 Hours.**

PR: Satisfy the minimum ACT/SAT math score, or satisfactory performance on departmental placement examination, or MATH 122 with a minimum grade of C-, (prerequisites may vary on regional campuses). Introduces the foundations of analysis designed to precede the calculus sequence with emphasis on functions and graphs. Topics include properties of absolute value, polynomial, rational, exponential, logarithmic functions, and techniques for solving equations and inequalities.

**MATH 128. Plane Trigonometry. 3 Hours.**

PR: MATH 126 with a minimum grade of C-. Study of trigonometric functions, identities, vectors, complex numbers, and trigonometric equations. (Prerequisites may vary on regional campuses).

**MATH 129. Pre-Calculus Mathematics. 4 Hours.**

PR: Satisfy the minimum ACT/SAT math score, or satisfactory performance on departmental placement test, (prerequisites may vary on regional campuses). A treatment of algebra, analytic geometry, and trigonometry.

**MATH 150. Applied Calculus. 3 Hours.**

PR: Satisfy the minimum ACT/SAT math score, or satisfactory performance on departmental placement examination, or C- in MATH 124 or MATH 126 or MATH 129. For students in other disciplines needing calculus for applications. Limits of sequences and functions, continuity derivatives, and integrals of polynomials, rational functions, and exponential and logarithmic functions, partial derivatives, maxima and minima. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

**MATH 151. Applied Calculus 2. 3 Hours.**

PR: (MATH 150 or MATH 154 or MATH 155) with a minimum grade of C-. This course covers basic techniques of integration, applications of integration, Taylor polynomials, and an introduction to ordinary differential equations. Applications will be geared towards students in Engineering Technology.

**MATH 153. Calculus 1a with Precalculus. 3 Hours.**

PR: Satisfy the minimum ACT/SAT math score, or satisfactory performance on departmental placement examination, or C- in (MATH 126 and MATH 128) or in MATH 129. Introduction to limits, continuity, derivatives, and applications of derivative.

**MATH 154. Calculus 1b with Precalculus. 3 Hours.**

PR: MATH 153 with a minimum grade of C-. Introduction to applications of derivatives, antiderivatives, and definite integrals.

**MATH 155. Calculus 1. 4 Hours.**

PR: Satisfy the minimum ACT/SAT math score, or satisfactory performance on departmental placement examination, or minimum grade of C- in MATH 129 or MATH 153, or minimum grade of C- in both MATH 126 and MATH 128. Introduction to limits, continuity, derivatives, antiderivatives, definite integrals, and applications of the derivative.

**MATH 156. Calculus 2. 4 Hours.**

PR: A minimum grade of C- in MATH 154 or MATH 155. Techniques of integration, application of the definite integral, polar coordinates, indeterminate forms, and infinite series.

**MATH 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**MATH 218. History of Mathematics. 3 Hours.**

PR: MATH 155 with a minimum grade of C-. Development of mathematics through calculus, with emphasis on mathematical theories and techniques of each period and their historical evolution. (Not offered on a regular basis.).

**MATH 232. Number and Algebra for Teachers. 3 Hours.**

PR: A minimum grade of C- in MATH 124 or MATH 126 or MATH 150 or MATH 153 or MATH 155. (Open to pre-service elementary education majors only.) Use of properties of real numbers and algebra to illuminate conceptual understanding and enhance problem solving techniques. The use of technology is infused throughout the course.

**MATH 233. Measurement and Geometry for Teachers. 3 Hours.**

PR: MATH 232 with a minimum grade of C-. (Open to pre-service elementary education majors only.) Use of properties of real numbers, algebra, measurement and geometry to illuminate conceptual understanding and enhance problem solving techniques. The use of technology and manipulatives is infused throughout the course.

**MATH 251. Multivariable Calculus. 4 Hours.**

PR: MATH 156 with a minimum grade of C-. Introduction to solid analytic geometry, vector algebra, and calculus of several variables.

**MATH 261. Elementary Differential Equations. 4 Hours.**

PR: WVU and PSC sections require MATH 251 with a minimum grade of C-, WVUIT sections require MATH 251 with a minimum grade of C- or MATH 315 with a minimum grade of B-. Ordinary differential equations, Laplace transforms, partial differential equations, Fourier series, and applications.

**MATH 293. Special Topics. 6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**MATH 298. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**MATH 303. Introduction to the Concepts of Mathematics. 3 Hours.**

PR: MATH 156 with a minimum grade of C- or consent. An introduction to mathematical thinking and writing, including the construction of proofs. Specific examples are drawn from elementary number theory, relations, calculus, and enumerative combinatorics.

**MATH 318. Perspectives on Mathematics and Science. 3 Hours.**

PR: MATH 150 or MATH 153 or MATH 155. This course explores knowledge generation in the sciences and mathematics by referencing the philosophy, history, and methods of those disciplines. It is designed to prepare future teachers with background, rationales, and strategies necessary to enhance student knowledge and interest in these areas, providing deeper understanding of the underlying mathematics in science, and of mathematics in general.

**MATH 322. Introduction to Programming and Computational Mathematics. 3 Hours.**

PR: MATH 156 with a minimum grade of C- and PR or CONC: MATH 251 with a minimum grade of C-. An introduction to programming and computation in the Matlab environment with applications to the mathematical sciences.

**MATH 338. Geometry for Teachers. 3 Hours.**

PR: MATH 156 with a minimum grade of C- and PR or CONC: MATH 303 with a minimum grade of C- or consent. Special topics from Euclidean and non-Euclidean geometries needed for teaching high school mathematics.

**MATH 341. Introduction to Algebraic Structures. 3 Hours.**

PR: MATH 303 with a minimum grade of C-. This course is designed to study fundamental algebraic structures such as groups, rings, and fields. We cover properties of integers, modular arithmetic, groups, permutation groups, subgroups, cyclic groups, cosets, Lagrange's theorem, normal subgroups, quotient groups, homomorphism and isomorphism of groups, direct product of groups, structure of finite groups, and introduction to rings, integral domains, ideals, and fields.

**MATH 343. Introduction to Linear Algebra. 3 Hours.**

PR: MATH 156 with a minimum grade of C-. Introduction to vector spaces as an algebraic system. Emphasis on axiomatic development and linear transformation. Examples from geometry and calculus.

**MATH 363. Mathematical Foundations of Actuarial Science. 3 Hours.**

PR: MATH 156 with a minimum grade of C-. Concepts from calculus and probability as they pertain to actuarial sciences. The calculus portion covers limits, derivatives, integrals, power series and polar coordinates. The probability portion covers basic and conditional probability, Bayes' theorem, discrete and continuous variables and distributions, and bivariate distributions. Focus is on word problems of the type covered by the SOA/CAS Exam P/1.

**MATH 364. Mathematics of Compound Interest. 3 Hours.**

PR: MATH 156 or MATH 150. A problem-solving course focusing on the measurement of interest, annuities, amortization schedules, and sinking funds, and the valuation of bonds and other securities.

**MATH 373. Introduction to Cryptography. 3 Hours.**

PR: MATH 155. Introduces students to the art of confidential communication the mathematical background and the practical skills in making and breaking secret codes.

**MATH 375. Applied Modern Algebra. 3 Hours.**

PR: MATH 156 with a minimum grade of C-. Finite fields, algebraic coding theory, Boolean algebras, monoids, finite state, and Turing machines.

**MATH 376. Foundations, Functions and Regression Models. 3 Hours.**

PR or CONC: MATH 156. In-depth study of topics taught by teachers of secondary school mathematics. Emphasizes development of the concept of function, exploring function patterns in data sets, and connections between these topics and topics of mathematics associated with the secondary school curriculum. Integrates use of appropriate technology in developing lessons that help students master the concepts of functions, data, and real world applications.

**MATH 377. Operations Research. 3 Hours.**

PR: MATH 156. Linear programming, multi-objective optimization and goal programming, discrete dynamic programming, network flows, discrete optimization models and methods, nonlinear programming.

**MATH 378. Discrete Mathematics. 3 Hours.**

PR: WVU Morgantown sections require MATH 303, WVU Tech sections require MATH 156. Permutations, combinations, binomial theorem, inclusion-exclusion formula, recurrence relations, generating functions, elementary graph theory (connectivity, paths, circuits, trees, vertex and edge coloring, graph algorithms) matching theory, and discrete optimization.

**MATH 381. Introduction to Analysis and Topology. 3 Hours.**

PR: MATH 303 with a minimum grade of C-. Introduction to metric and topological spaces. Topics include: continuity, convergence, separation, compactness, and connectedness.

**MATH 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**MATH 420. Numerical Analysis 1. 3 Hours.**

PR: MATH 251 and (CHE 102 or (CS 110 and CS 110L) or DSCI 221 or DSCI 222 or ENGR 102 or MAE 102 or MATH 322) with a minimum grade of C-. Computer arithmetic, roots of equations, interpolation, Gaussian elimination, numerical integration and differentiation. Numerical solution of initial value problems for ordinary differential equations. Least square approximations.

**MATH 421. Numerical Analysis 2. 3 Hours.**

PR: MATH 420 and (MATH 343 or MATH 441). Solutions of linear systems by direct and iterative methods. Calculation of eigenvalues, eigenvectors, and inverses of matrices. Applications to ordinary and partial differential equations.

**MATH 441. Applied Linear Algebra. 3 Hours.**

PR: MATH 156 with a minimum grade of C-. Methods and applications of linear algebra in various disciplines including mathematics, engineering, and science. Basic topics including linear equations, matrix algebra, determinants, vector spaces, subspaces, linear independence, basis and dimension, linear transformations, eigenvalues and eigenvectors, diagonalization, orthogonality of vectors, and projections, Cramer's rule, LU-factorization, Gram-Schmidt process, and the method of least squares.

**MATH 442. Advanced Algebraic Structures. 3 Hours.**

PR: MATH 341. Continuing study of groups, rings, and fields together with their substructures, quotients, and products. Morphisms with an emphasis on the fundamental homomorphism theorems.

**MATH 451. Introduction to Real Analysis 1. 3 Hours.**

PR: MATH 303 with a minimum grade of C-. The foundations of Calculus, with all its useful and sometimes even unexpected applications, Real Analysis is the branch of Mathematics which channels Algebra (study of structure) and Geometry (study of shape) together with the abstract notion of infinity. We cover basic topics including axiomatic theory of real numbers, sequences, limits, series of numbers, point set topology, continuity, and uniform continuity.

**MATH 452. Introduction to Real Analysis 2. 3 Hours.**

PR: MATH 451 with a minimum grade of C-. Rigorous study of the theory of functions of real variables. Covers basic topics including differentiation, Riemann integral, Riemann-Stieltjes integrals, power series, uniform convergence, improper integrals.

**MATH 456. Complex Variables. 3 Hours.**

PR: MATH 251 with a minimum grade of C-. Comprehensive introduction to complex analysis, emphasizing applications and examples that are useful in science and engineering. Covers basic topics including complex numbers, polar form, complex differentiable functions, Cauchy-Riemann equations, elementary analytic functions, mapping by elementary functions, complex integration, Cauchy's integral theorem, maximum principle, harmonic functions, series, poles, and residues.

**MATH 460. Introduction to Dynamical Systems and Applications. 3 Hours.**

PR: MATH 261 with a minimum grade of C-. Introduction to the theory of dynamical systems, whose goal is to study the behavior of systems with known laws of evolution. Exploration of basic topics including fixed points, periodic orbits, linearization, local and global behavior of solutions, bifurcations, and chaos. Applications from biology, chemistry, and physics.

**MATH 464. Mathematical Modeling. 3 Hours.**

PR: (MATH 261 or consent) and (MAE 316 or STAT 215 or STAT 461 or consent) and (CHE 102 or DSCI 221 or DSCI 222 or ENGR 102 or MAE 102 or MATH 322 or (CS 110 and CS 110L)), all with a minimum grade of C-. Topics include growth and decay models, equilibrium models, optimal control and utility, and model validation. Applications from areas such as chemistry, physics, biology, economics, and the environment will be considered.

**MATH 465. Partial Differential Equations. 3 Hours.**

PR: MATH 261 with a minimum grade of C-. Introduces students in mathematics, engineering, and the sciences to methods of applied mathematics. First and second order equations, canonical forms, wave, heat, and Laplace's equations, and representation of solutions.

**MATH 470. Introduction to Mathematical and Computational Systems Biology. 3 Hours.**

PR: MATH 261 with a minimum grade of C- and PR or CONC: (MATH 343 or MATH 441) with a minimum grade of C-. Systems biology provides a framework to predict and control behaviors of large biochemical networks based on the analysis of its modules. Its methods apply to pharmacology, population dynamics, and epidemiology. Starting from concepts and computational implementation of biochemical kinetics, parameter fitting, sensitivity analysis, we develop principles for network control and analysis, with hands-on examples of metabolic, signaling, and genetic networks.

**MATH 471. Mathematical Systems Biology 2: Stochastic Methods. 3 Hours.**

PR: MATH 470 and STAT 215 with a minimum grade of C- in each or department permission. This second course in the sequence introduces students to stochastic models and simulation methods used in molecular systems biology. The core of the course deals with the application of probabilistic (stochastic) models to a class of biological processes, with emphasis on Monte-Carlo simulations of biochemical reactions inside cells. Students will learn to implement a variety of stochastic algorithms in Matlab.

**MATH 473. Actuarial Mathematics 1. 3 Hours.**

PR: MATH 156 with a minimum grade of C-. Introduction to modeling and actuarial modeling methods. Study of useful frequency and severity models, discussion the steps involved in the modeling process to solve business problems. Covers parts of CAS Exam 4/SOA Exam STAM (Short-Term Actuarial Mathematics).

**MATH 474. Actuarial Mathematics 2. 3 Hours.**

PR: MATH 156 with a minimum grade of C-. In this course, students will be introduced to useful credibility theory, insurance and reinsurance coverage, and pricing and reserving for short-term insurance coverages. This course covers parts of the learning objectives of Short-Term Actuarial Mathematics (STAM) Exam by the Society of Actuaries (SOA).

**MATH 480. Capstone Design. 1 Hour.**

Design of a research project in consultation with advisor(s). Practice of effective written and oral communication; engagement of students in purposeful writing in mathematics.

**MATH 481. Capstone Experience. 2 Hours.**

PR: MATH 480 with a minimum grade of C-. Implementation of research project in consultation with advisor(s). Practice of effective written and oral communication; engagement of students in purposeful writing in mathematics.

**MATH 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**MATH 491. Professional Field Experience. 1-18 Hours.**

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.

**MATH 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**MATH 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**MATH 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**MATH 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**MATH 497. Research. 1-6 Hours.**

PR: Consent. Independent research projects.

**MATH 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**MULTIDISCIPLINARY STUDIES (MDS)****MDS 101. Introduction to Multidisciplinary Studies. 3 Hours.**

Introduces students to the field of multidisciplinary studies. Informs students about departmental resources and launches the degree design process.

**MDS 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**MDS 199. Orientation to MDS. 1-2 Hours.**

Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

**MDS 279. Multidisciplinary Theories and Methods. 3 Hours.**

PR or CONC: MDS 101 with a minimum grade of C-. Exposes students to important concepts, theoretical paradigms, and research methods of multidisciplinary studies. Students practice the skill of integrating different fields of knowledge.

**MDS 289. Foundations of Integrated Studies. 3 Hours.**

Introduces students to integrated studies as an academic discipline with its own terminology, research methods, and tools applicable to addressing complex 21st century problems.

**MDS 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**MDS 301. Integrative Writing. 3 Hours.**

Development of the writing process and portfolio generation, adapted for three contexts: gaining course credit through RBA portfolio review, preparing for graduate school, and preparing for the job market.

**MDS 302. Portfolio Development. 3 Hours.**

PR: MDS 301 with a minimum grade of C-. Centers on guiding students through the learning and writing processes grounded in the synthesis of their studies and work experience. Highlights the importance of integrative and applied learning and of effective self-reflection and argumentation. After completing the course, students will submit a portfolio to the appropriate unit to earn credit.

**MDS 303. Independent Portfolio Development. 1 Hour.**

PR: MDS 301 with a minimum grade of C-. Self-guided development of an equivalency-credit portfolio with the instructor's support. Centers on learning and writing grounded in the synthesis of studies and work experience in the one-on-one format. Highlights the importance of integrative and applied learning and effective self-reflection and argumentation. After completing the course, the student will submit the portfolio to the appropriate unit to earn credit.

**MDS 304. People vs. the Planet: Interdisciplinary Approaches to Climate Change. 3 Hours.**

Investigates the issue of climate change through an interdisciplinary approach defined as the Environmental Humanities. Students will employ critical thinking, research, and presentation skills culminating in a community-based action project with a local non-profit or university-based organization.

**MDS 306. Medicine and the Arts. 3 Hours.**

PR: ENGL 102 with a minimum grade of C-. In Medicine and the Arts, students will learn to make connections between artistic production and the health sciences, examining the historical, linguistic, cultural and aesthetic contexts in which we engage in and with healthcare. Students will employ critical analysis and practical skills in the course. They will analyze works of art with mindfulness to modern life and healthcare.

**MDS 308. Women and Terrorism. 3 Hours.**

Comprehensive, interdisciplinary explorations of women's involvement in terrorism and counterterrorism. Engaging with the material from various disciplines and examining the roles that personal, social, and global factors play in women's decisions to join terrorist organizations as well as counterterrorist projects, the course enables students to critically engage with the public discourse on this complex problem.

**MDS 310. Approaches to Happiness. 3 Hours.**

Exploration of happiness through an interdisciplinary lens; encourages constructive approaches to well-being. Engaging with materials from multiple disciplines, examining different theories on and methods of increasing happiness, analyzing happiness myths and models from popular culture, and applying the knowledge gained in class to their personal contexts, students get to know themselves better and start their own happiness portfolios.

**MDS 311. RBA Professional Development. 1 Hour.**

Development and enhancement of academic and professional skills beneficial to RBA students; customization of the RBA degree according to student needs and goals; creation of a learning e-portfolio.

**MDS 312. Sports and Global Culture. 3 Hours.**

Explores the influence of sports on global culture, taking into consideration race, religion, nationality, gender, and politics, in amateur, college, and professional sports. Emphasis on how professional athletes use their status to influence others and guide public debate of national and international issues.

**MDS 316. Approaches to Identity: Who Am I?. 3 Hours.**

Explores the notion of identity, borrowing from various disciplines. Enables students to go beyond visible signifiers to examine how identity is shaped by environment, empowering them to question and scrutinize models of identity prescribed by others.

**MDS 320. Ethics, Technology and Artificial Intelligence. 3 Hours.**

Examinations of artificial intelligence using the ethical framework from UNESCO's Recommendations on the Ethics of Artificial Intelligence, grounded in the Universal Declaration of Human Rights. Multidisciplinary explorations of topics such as the value-embedded nature of technology, machine learning biases, AI and environment, AI and misinformation, AI and cognitive liberty, legal issues involving AI, and ways to move forward.

**MDS 322. Video Games & Human Rights. 3 Hours.**

Examines human rights as defined in the Universal Declaration of Human rights and other UN documents and places them in the context of contemporary video games. Exploration of whether video games can educate us about human rights and to what extent video games and those who create them endorse or devalue human rights.

**MDS 324. The Problem of Waste: Local Action & Global Impact. 3 Hours.**

The course explores global outcomes of our local consumption choices, particularly focusing on where our everyday objects come from and where they go after we dispose of them. The course also examines alternative models of production and consumption of these items and the value-embedded nature of our technologies.

**MDS 389. Interdisciplinary Research Methods. 3 Hours.**

PR: MDS 199. Instructs students to approach research from an interdisciplinary perspective. Students will develop skill in applying methodologies and principles from more than one academic discipline to frame perspectives and conduct research. The final research project will address a political, economic, social, scientific, or humanitarian issue with relevance to the student's post-graduate career or academic aspirations using interdisciplinary tools and analysis.

**MDS 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**MDS 401. Capstone. 3 Hours.**

PR or CONC: MDS 301. Incorporates academic, intellectual, and professional skills to complete a final project for the Bachelor of Integrated Studies. Focus is on oral communication skills, presentation skills, research skills, analysis, reasoning, resilience, collaboration, self-promotion, professional development, and lifelong learning.

**MDS 411. RBA Capstone. 1 Hour.**

PR: MDS 311. Preparation for professional life upon graduation; self-assessment of implementation of core personality strengths; career exploration with assistance from Career Services; development of job application and grad school admission documents; mock interview; completion of a learning e-portfolio.

**MDS 489. Capstone. 3 Hours.**

PR: WVU sections require PR or CONC: MDS 101 with a minimum grade of C-, WVUIT sections require MDS 199 with a minimum grade of C-. The MDS capstone instructs students on the methods and advantages of a multidisciplinary education. The capstone includes a research project, an experiential education project, professional preparation projects, and a complete e-portfolio that demonstrates student growth throughout their progress towards the degree.

**MDS 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**MDS 491. Professional Field Experience. 1-18 Hours.**

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.

**MDS 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**MDS 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**MDS 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**MDS 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**MDS 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**MDS 497. Research. 1-6 Hours.**

Independent research projects.

**MDS 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## **NATIVE AMERICAN STUDIES (NAS)**

**NAS 200. Introduction: Native American Studies. 3 Hours.**

Overview of the diverse social and cultural institutions of indigenous tribal societies in North America. Historical materials provide the background for understanding the range of issues affecting contemporary tribal groups.

**NAS 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**NAS 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**NAS 491. Professional Field Experience. 1-6 Hours.**

PR: Consent. Supervised interdisciplinary experiences focused on Native Americans. May be tribally based or related to agencies and projects serving Native Americans. This course is not open to freshman.

**NAS 492. Directed Study. 1-3 Hours.**

Directed study, reading and/or research.



**NAS 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**NAS 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**NAS 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**NAS 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

**NEUROSCIENCE (NRSC)****NRSC 101. Introduction to Neuroscience. 3 Hours.**

Introduction to neuroscience that includes a survey of the history of neuroscience and an intensive exploration of its sub-fields.

**NRSC 191. First-Year Seminar. 3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**NRSC 201. Biological Foundations of Behavior. 4 Hours.**

PR: (NRSC 101 and PSYC 101) with a minimum grade of C- in each and PR or CONC: BIOL 219 and BIOL 219L and Coreq: NRSC 201L. Introduction to the biological and psychological foundations of behavior. Survey of fundamental concepts in understanding the workings of the nervous system and resulting behavior in human and non-human animals.

**NRSC 201L. Biological Foundations of Behavior Laboratory. 0 Hours.**

PR: Corequisite of NRSC 201. Biological Foundations of Behavior - NRSC 201 Laboratory.

**NRSC 298. Honors. 1-3 Hours.**

PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

**NRSC 485L. Neuroscience Research Laboratory Capstone. 3 Hours.**

PR: BIOL 348 with a minimum grade of C-. Advanced neuroscience laboratory experience incorporating critical skills of being a research scientist, including writing grant proposals, drafting manuscripts, and presenting in a public forum. Students utilize knowledge gained throughout the neuroscience curriculum to propose, design, execute, analyze, and report an experiment with a Neuroscience focus.

**NRSC 489. Independent Research Capstone. 3 Hours.**

PR: BIOL 348 with a minimum grade of C-. Capstone research experience supervised by a faculty member with neuroscience expertise. Students will apply their training from throughout the neuroscience curriculum to develop a unique research project that contributes to the goals of a lab, culminating in formal written and oral presentations. This course fulfills the capstone requirement for Neuroscience Majors and provides a realistic exposure to performing scientific research.

**NRSC 497. Research. 1-6 Hours.**

Independent research projects.

**ORIENTATION (ORIN)****ORIN 100. Orientation to STEP. 1 Hour.**

Support of STEP students to make a successful transition from high school to college; develop a better understanding of the learning process including critical thinking; and acquire basic academic and personal survival skills.

**ORIN 110. Orientation to EXCEL. 1 Hour.**

Support for the first -year student to make a successful transition from high school to college; develop a better understanding of the learning process including critical thinking; and acquire basic academic and personal survival skills.

**ORIN 151. Choosing a Major and Career. 1 Hour.**

Provide guidance and clarity to students that are unsure about a major and career. Course addresses first time freshman undecided and those students that discover that their initial major or career choice does not match their personal and professional aspirations. Students will be guided through a formal assessment of their personal characteristics, consider possible career choices and identify associated majors.

**ORIN 152. Learning Career Skills. 1 Hour.**

To provide students with information and resources necessary to begin building a strong foundation toward "Career Readiness" and an understanding of the importance of developing a comprehensive career plan. Students will be introduced to the advantages of developing an effective resume and associated career documents and the importance of beginning to define their career goals.

**ORIN 161. Exploring Career Options. 1 Hour.**

This course helps students explore the career that is best for them. Students receive individual counseling as well as an opportunity to talk with career mentors.

**ORIN 162. Becoming Career Ready. 1 Hour.**

This course helps students identify the personal and professional skill requirements of their selected career. The course involves a mix of group explorations, one-on-one discussions, and self-improvement exercises.

**ORIN 164. Finding the First Job. 1 Hour.**

This class helps students develop and execute a strategy for obtaining a first job that is consistent with the student's career interests.

**ORIN 165. Starting Your Career. 1 Hour.**

This class helps students prepare for the issues they will encounter early in their careers.

**ORIN 175. Western Europe Study Trip. 3 Hours.**

Exploration of Western European (Belgium, France, Germany, Luxembourg, Netherlands) history, culture, and politics with an emphasis on relevance and links to the U.S.

**ORIN 220. Leadership Development. 2 Hours.**

PR: Sophomore standing. Primarily for sophomores and juniors. A practical survey of leadership techniques taught by various instructors. Major emphasis placed upon improvement of leadership abilities within the WVU campus structure and problems particular to student organizations. (Pass/fail grading only.).

**ORIN 251. Preparing for Success. 1 Hour.**

Inform students of the various opportunities available to them through co- and extra-curricular activities that best meet the needs of their individual career planning and professional development. Students will evaluate and select opportunities in study abroad, leadership, professional organizations and service learning that will improve their competitiveness as they prepare for the job search process.

**ORIN 252. Professional Development. 1 Hour.**

Provide students with knowledge, skills and the ability to successfully launch a comprehensive job search. Students will learn how to search for potential employment opportunities and to utilize the latest available job search resources. Understanding the importance of professional branding, career development, and financial planning to meet life-long goals will also be covered.

**ORIN 260. Preparation for Graduate Education. 1 Hour.**

This course offers a comprehensive view into the graduate school application process. Assignments will mimic those required for actual admission into graduate programs.

**ORIN 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ORIN 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**ORIN 491. Professional Field Experience. 1-18 Hours.**

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.

**ORIN 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**ORIN 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**ORIN 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**ORIN 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**ORIN 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## **PHILOSOPHY (PHIL)**

**PHIL 100. Problems of Philosophy. 3 Hours.**

An elementary examination of such philosophical problems as the mind-body problem, the existence of God, freedom and determinism, and the nature of persons and their knowledge.

**PHIL 120. Introduction to Ethics. 3 Hours.**

Topics include the nature of the good life, whether ethics is relative or there are universal moral truths, the relationship between self-interest and morality, virtues and vices, and the nature of right and wrong.

**PHIL 130. Current Moral Problems. 3 Hours.**

An examination of current moral problems. Topics include some of the following: abortion, euthanasia, sexism and sexual equality, preferential treatment, animal rights, sexual morality, pornography, economic justice, paternalism, punishment, and nuclear deterrence.

**PHIL 140. Historical Introduction to Philosophy. 3 Hours.**

An introductory survey of the major philosophers and philosophical movements from ancient times to the present.

**PHIL 147. Philosophy and Film. 3 Hours.**

An introduction to philosophical questions and problems through the medium of film. Questions emphasized and films viewed will vary by semester and instructor.

**PHIL 170. Introduction to Critical Reasoning. 3 Hours.**

An elementary study of critical thinking and reasoning. For students who want to improve their skills in recognizing fallacious patterns of reasoning, constructing acceptable arguments, and criticizing faulty lines of reasoning.

**PHIL 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**PHIL 212. Philosophy of Sport. 3 Hours.**

Compare and evaluate issues, ideas and arguments on the Nature of Sport, Aesthetic value in Sport, and Ethics in Sport. The course also explores the history and language of sport as it relates to understanding Sport.

**PHIL 244. History of Ancient Philosophy. 3 Hours.**

PR: 3 hours in philosophy. An introduction to the philosophies of the pre-Socratics, Plato, Aristotle, the Epicureans, and the Stoics.

**PHIL 248. History of Modern Philosophy. 3 Hours.**

PR: 3 hours in philosophy. A study of selected writings by major philosophers of the Western world from Descartes to Kant.

**PHIL 260. Introduction to Symbolic Logic. 3 Hours.**

An introduction to modern symbolic logic (basically, propositional logic and the predicate calculus) for students who want to acquire the skill to represent symbolically the form of deductive arguments and to test formally for validity.

**PHIL 285. Ethics Bowl. 3 Hours.**

PR: PHIL 100. (May be repeated for a maximum of 9 credit hours.) Students learn skills related to researching, planning, and presenting oral and written arguments on various contemporary ethical debates. Students also prepare to compete in an ethics bowl competition.

**PHIL 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PHIL 301. Metaphysics. 3 Hours.**

PR: 3 hours of philosophy. Traditional problems associated with reality and experience, universals and particulars, causality, space and time, matter and mind, and the nature of the self.

**PHIL 302. Theory of Knowledge. 3 Hours.**

PR: 3 hours of philosophy. The nature and scope of human knowledge. Topics may include perception, belief, truth, evidence, certainty, and skepticism.

**PHIL 303. Brains, Minds, and Experiments. 3 Hours.**

Introduction to philosophy of mind and philosophy of science by way of reflection on neuroscientific research. Topics may include free will and neural determinism, craniometry and biases in intelligence research, neurological disorders and moral psychology, levels of neuropsychological explanation, neural mechanisms and natural kinds, methodological issues in PET and fMRI research, and the search for neural correlates of consciousness.

**PHIL 306. Philosophy of Mind. 3 Hours.**

PR: 3 hours of philosophy or psychology major. Topics to be selected from: the mind-body problem, psychological explanation, psychology and the neurosciences, personal identity, consciousness, artificial intelligence, mental representation, emotions intentionality, folk psychology, and other minds.

**PHIL 308. Philosophy of Religion. 3 Hours.**

PR: 3 hours of philosophy or religious studies interdepartmental major. Examines questions of belief in God's existence, life after death, the problem of evil, determinism and divine fore knowledge, or other topics bearing upon the nature of a religious orientation to life.

**PHIL 309. Asian Philosophy. 3 Hours.**

Focuses on Asian thought at its most fundamental level by examining how philosophical questions have been considered, critiqued, and compared in the major Asian traditions including Chinese, Japanese, and Tibetan.

**PHIL 310. Philosophy of Science. 3 Hours.**

PR: 3 hours philosophy or science major. Philosophical problems associated with the concepts and methodology of science.

**PHIL 312. Philosophy of Language. 3 Hours.**

PR: PHIL 100 or PHIL 120 or PHIL 130 or PHIL 140 or PHIL 170 or PHIL 212 or PHIL 260. An Introduction to the philosophical study of language focusing on questions and puzzles about reference, meaning, truth and necessity.

**PHIL 313. Philosophy of Race. 3 Hours.**

An examination of metaphysical and ethical questions about race. Topics may include the nature of race, social construction, the varieties of racism (personal, institutional, and systemic), racial cognition and implicit bias, the (mis)use of the concept of race in medicine and science, affirmative action, reparations, and integration.

**PHIL 314. Philosophy of Sex and Gender. 3 Hours.**

PR: PHIL 100 or PHIL 130 or PHIL 170 or WGST 170. An examination of historical and contemporary philosophical debates about the nature of and ethical issues related to sex, gender, and sexuality. Topics covered include the nature of biological sex, the construction of gender, historical and contemporary works in feminist philosophy, and the ethics of sexual activities such as prostitution.

**PHIL 315. Free Will and Moral Responsibility. 3 Hours.**

PR: 3 hours of philosophy. Examines the concept of free will and the question of whether human beings are free in a way that allows them to be responsible for their behavior. Topics include the compatibility of freedom and determinism, the relationship between free will and moral responsibility, whether social factors and psychological impairments undermine freedom and responsibility, and the relationship between responsibility and punishment.

**PHIL 320. Aesthetics and Philosophy of Art. 3 Hours.**

Examines historical and contemporary philosophical questions about the nature and value of art and aesthetic sensibility. Topics may include the definition of art and aesthetic concepts like beauty and the sublime; the role of taste and interpretation in aesthetic experience; the role of art in society; issues in everyday and environmental aesthetics.

**PHIL 321. Ethical Theory. 3 Hours.**

PR: 3 hours of philosophy. Topics to be selected from the following: an examination of major ethical theories, justification in ethics, moral truth, ethical skepticism, moral rights and duties, and the meaning of ethical concepts.

**PHIL 323. Social and Political Philosophy. 3 Hours.**

PR: 3 hours philosophy or political science major. An examination of the relationships among the individual, society and the state. Possible topics include justifications of the state, justice, rights, liberty, equality, and arguments for socialism and capitalism.

**PHIL 325. Philosophy of Law. 3 Hours.**

PR: 3 hours of philosophy or pre-law student. An introduction to the philosophical study of law; topics to be selected from: theories of the nature of law, legal obligation, responsibility, punishment, free speech, paternalism, legal moralism, and legal ethics.

**PHIL 331. Health Care Ethics. 3 Hours.**

PR: 3 hours philosophy or pre-med or health sciences student. Topics: Clinician- patient relationship, life-sustaining treatment, physician assisted death, physician-nurse conflicts, confidentiality, research, reproductive technology, abortion, maternal/fetal conflicts, genetics, rationing, and access.

**PHIL 332. Environmental Ethics. 3 Hours.**

PR: Prior coursework in philosophy or a major in the sciences. Examines traditional and non-traditional ethical theories concerning our moral obligations toward other humans, non-human organisms, and ecosystems. Topics include competing theories of intrinsic value (anthropocentric, biocentric, and ecocentric), justice and the global environment, and proposals to promote environmental sustainability.

**PHIL 341. Philosophy and Death. 3 Hours.**

PR: One previous Philosophy course. An examination of historically and philosophically significant views on the nature and significance of death. Topics may include: criteria for defining and determining death; the possibility and desirability of immortality; the rationality of fearing death; the role of death in determining life's meaning and significance; and the ethical or moral dimensions of death.

**PHIL 346. History of Ethics. 3 Hours.**

PR: 3 hours philosophy. An examination of such issues as the nature of the good life, the just society, and our moral responsibilities. Such major philosophers as Plato, Aristotle, Aquinas, Kant, and Mill will be studied.

**PHIL 351. Topics in Medieval Philosophy. 3 Hours.**

PR: 3 hours of philosophy. Introduction to the philosophies of St. Augustine, St. Thomas Aquinas, Peter Abelard, William of Occam, and other selected figures from the Medieval period.

**PHIL 354. Themes in Continental Philosophy. 3 Hours.**

Nineteenth and twentieth-century French and German philosophers such as Hegel, Marx, Nietzsche, Heidegger, Habermas, Sartre, Foucault, Derrida; philosophers and themes will vary.

**PHIL 355. Existentialism. 3 Hours.**

PR: 3 hours of philosophy or literature course in existentialism. Survey of the major existentialist thinkers.

**PHIL 360. Truth, Proof, and Possibility. 3 Hours.**

PR: PHIL 260. Concepts of mathematical, philosophical, and modal logic, including the proof theory, soundness and completeness of standard propositional and first order logic, trivalent and intuitionistic logics, and semantics for quantified modal logic.

**PHIL 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PHIL 480. Capstone Seminar. 3 Hours.**

PR: 12 Hours in Philosophy, 6 Hours of PHIL 300 or higher. Advanced philosophical investigation of selected problems and/or major philosophers.

**PHIL 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**PHIL 491. Professional Field Experience. 1-18 Hours.**

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.

**PHIL 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**PHIL 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PHIL 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**PHIL 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**PHIL 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**PHIL 497. Research. 1-6 Hours.**

Independent research projects.

**PHIL 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**PHYSICS (PHYS)****PHYS 101. Introductory Physics 1. 4 Hours.**

PR: MATH 124 or MATH 126 or MATH 128 or MATH 129 or MATH 150 or MATH 153 or MATH 154 or MATH 155 or MATH 156 or satisfactory performance on MATH departmental placement exam and Coreq: PHYS 101L. The fundamental philosophy and principles of physics are applied to studies of mechanics, sound, heat, and thermodynamics through demonstrations, problems, and experiments. Pre-requisites and/or co-requisites may differ on regional campuses.

**PHYS 101L. Introductory Physics 1 Laboratory. 0 Hours.**

PR: Corequisite of PHYS 101. Introductory Physics 1 - PHYS 101 Laboratory.

**PHYS 102. Introductory Physics 2. 4 Hours.**

PR: PHYS 101 and PHYS 101L and Coreq: PHYS 102L. The fundamental philosophy and principles of physics are applied to studies of electricity, magnetism, optics, light, and atomic and nuclear physics through demonstrations, problems, and experiments. Pre-requisite(s) and/or co-requisite(s) may differ on regional campuses.

**PHYS 102L. Introductory Physics 2 Laboratory. 0 Hours.**

PR: Corequisite of PHYS 102. Introductory Physics 2 - PHYS 102 Laboratory.

**PHYS 105. Conceptual Physics. 4 Hours.**

PR: Corequisite of PHYS 105L. Basic principles of physics and their relationship to our modern technological society. Major topics include properties of matter, electricity, optics, motion, heat and temperature, and energy. Nonmathematical approach emphasized.

**PHYS 105L. Conceptual Physics Laboratory. 0 Hours.**

PR: Corequisite of PHYS 105. Conceptual Physics - PHYS 105 Laboratory.

**PHYS 107. Physics of Music. 3 Hours.**

For all students including those in the liberal and fine arts. (No science or music prerequisites.) The physical and psychophysical principles underlying the nature, production, transmission, reception, and reproduction of sound.

**PHYS 111. General Physics 1. 4 Hours.**

PR: MATH 155 or PR or CONC: MATH 154 with a minimum grade of C- in all and Coreq: PHYS 111L. Survey of classical mechanics, thermodynamics and waves.

**PHYS 111L. General Physics 1 Laboratory. 0 Hours.**

PR: Corequisite of PHYS 111. General Physics 1 - PHYS 111 Laboratory.

**PHYS 112. General Physics 2. 4 Hours.**

PR: PHYS 111 and PHYS 111L and Coreq: PHYS 112L. Survey of electricity, magnetism, and optics.

**PHYS 112L. General Physics 2 Laboratory. 0 Hours.**

PR: Corequisite of PHYS 112. General Physics 2 - PHYS 112 Laboratory.

**PHYS 115. Physics 112 Lab Alternative. 1 Hour.**

PR: PHYS 112 with a grade of C- or higher. Laboratory component of survey of electricity magnetism and optics. (This laboratory is an alternative for students who transfer PHYS 112 without a laboratory and need to complete the lab only).

**PHYS 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**PHYS 199. Orientation to Physics. 1,2 Hour.**

Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

**PHYS 211. Introduction to Mathematical Physics. 3 Hours.**

PR: MATH 251 and PHYS 112. Review of basic calculus with application to Physics; e.g. vector calculus and Maxwell's Equations, Fourier Series and the vibrating string, eigenvalues, eigenvectors and coupled oscillators. Complex algebra, linear algebra, differential equations, practical differential equations, Bessel functions, Legendre Polynomials, and Fourier Transforms.

**PHYS 290. Teaching Practicum. 1-3 Hours.****PHYS 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PHYS 301. Computational Physics. 3 Hours.**

PR: MATH 261 and PHYS 314. Using basic numerical techniques to gain insight into physical systems. Numerical solutions for projectile motion, chaotic systems, and motion in a gravitational field (including N-body simulations). Numerical solutions to Maxwell's equations, the diffusion equation, the wave equation, Schrodinger's equation, and the hydrogen atom. Implementation of discrete Fourier Transforms and wavelet methods for analysis of time series.

**PHYS 312. Oscillations and Thermal Physics. 3 Hours.**

PR: MATH 156 and PHYS 111 and PR or CONC: PHYS 112. Introduction to wave analysis of a variety of physical systems, as well as introductory thermodynamics. Topics covered include pendula, oscillatory circuits, mechanical and sound waves, Fourier series and transforms, the Doppler effect, heat transfer, gases, fluids, entropy and the basic elements of diffraction and apertures.

**PHYS 314. Introductory Modern Physics. 4 Hours.**

PR: PHYS 112 and MATH 156. Topics of modern physics of interest to science majors and engineers; atomic and molecular structure and spectra, solid state and nuclear physics, relativity, and elementary particles.

**PHYS 321. Optics. 3 Hours.**

PR: PHYS 111 and PHYS 112 and MATH 156. A basic course in physical optics covering wave mathematics, propagation, polarization, interference, and diffraction; applications in geometrical optics and selected topics in scattering and quantum optics.

**PHYS 325. Atomic Physics. 3 Hours.**

PR: PHYS 314. Relativistic mechanics, atomic structure, and spectra.

**PHYS 326. Medical Imaging Physics. 3 Hours.**

Introduces the physics of medical imaging and is intended for non-physics majors. The fundamental concepts and clinical applications of the major imaging techniques are presented. The subject matter is ideal for pre-med majors.

**PHYS 331. Theoretical Mechanics 1. 3 Hours.**

PR: PHYS 111 and PHYS 112 or equiv. PR or Conc: MATH 261. Scalar, vector, and tensor fields; curvilinear coordinate systems. Kinematics and dynamics of particles, systems of particles and rigid bodies.

**PHYS 332. Theoretical Mechanics 2. 3 Hours.**

PR or CONC: MATH 261 and PHYS 331 or equivalent. Scalar, vector, tensor fields; curvilinear coordinate systems. Lagrangian and Hamiltonian formulation. Relativistic motion.

**PHYS 333. Electricity and Magnetism 1. 3 Hours.**

PR: PHYS 111 and PHYS 112 or equiv. and PR or Conc.: MATH 261. Electrostatics, electrostatics in matter, magnetostatics, magnetostatics in matter.

**PHYS 334. Electricity and Magnetism. 3 Hours.**

PR or CONC: PHYS 333 or equiv. and MATH 261. Maxwell's equations, reflection and refraction, wave guides and cavities.

**PHYS 340. Experimental Space Physics. 3 Hours.**

PR: PHYS 112. Laboratory course consisting of an experimental project designed to acquaint students with current techniques for the design and construction of scientific payloads for suborbital and orbital space missions.

**PHYS 341L. Advanced Physics 1 Laboratory. 3 Hours.**

PR: PHYS 111 and PHYS 112 and PHYS 314. Experiments in physics designed to complement theory courses, give experience in data taking and instrumentation, and learn methods of data evaluation and error analysis. This course focuses on learning foundational lab techniques using guided experiments.

**PHYS 342L. Advanced Physics Laboratory 2. 1-3 Hours.**

PR: Consent. Experiments in physics designed to complement theory courses, give experience in data taking and instrumentation, and learn methods of data evaluation, error analysis, and documentation and reporting. Emphasis on developing independence in the physics laboratory.



**PHYS 351. Introduction to Quantum Computing. 3 Hours.**

PR: MATH 156 and PHYS 112. An overview of the foundations of quantum computing, including quantum states, qubits, superposition, measurement, entanglement, interference, and decoherence. Application of concepts to quantum computing, communication, and sensing.

**PHYS 376L. Research Methods Laboratory. 3 Hours.**

PR: PHYS 112 and PR or CONC: ARSC 220. An introduction to the tools and mathematics that scientists use to solve scientific problems. Mathematical modeling, experimental design, hypothesis formulation, data collection, use of statistics, reading and evaluating the scientific literature, writing and reviewing scientific papers, and oral presentation of scientific research.

**PHYS 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PHYS 451. Introductory Quantum Mechanics. 3 Hours.**

PR: PHYS 314 and MATH 261. Fundamental principles of quantum mechanics; state functions in position and momentum space, operators, Schrodinger's equation, applications to one-dimensional problems, approximation methods, the hydrogen atom, angular momentum and spin.

**PHYS 452. Quantum Mechanics 2. 3 Hours.**

PR: PHYS 451 and MATH 261. Angular momentum operators, including spin, and time-dependent perturbation theory. Applications of quantum mechanics, including the properties of atoms (hydrogen and multi-electron atoms), molecules, solids, identical particles of atoms (hydrogen and multi-electron atoms), molecules, solids, identical particles (e.g. black-body spectrum, Bose-Einstein condensation, and the free electron gas), and quantum effects of adiabatic changes.

**PHYS 461. Thermodynamics and Statistical Mechanics. 3 Hours.**

PR: PHYS 314 or equiv and MATH 251. Introduction to the statistical foundations of thermodynamics; applications of the fundamental laws of thermodynamics to physical and chemical systems.

**PHYS 463. Nuclear Physics. 3 Hours.**

PR: PHYS 314 and MATH 251. Study of characteristic properties of nuclei and their structure as inferred from nuclear decays and reactions, leading to a knowledge of nuclear forces and models.

**PHYS 471. Solid State Physics. 3 Hours.**

PR: PHYS 314 or equiv and MATH 251. Properties of crystalline solids; includes crystal structure, interatomic binding, lattice vibrations, electron theory of metals, and the band theory of solids with some applications.

**PHYS 481. Plasma Physics. 3 Hours.**

PR: PHYS 111 and PHYS 112 and PR or Conc: PHYS 334. Introductory course in the physics of ionized gases; particle and fluid treatment of plasmas, waves, equilibrium and stability, kinetic theory, and nonlinear effects.

**PHYS 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**PHYS 491. Professional Field Experience. 1-18 Hours.**

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.

**PHYS 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PHYS 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**PHYS 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**PHYS 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**PHYS 497. Research. 1-6 Hours.**

PR: Consent. Independent research projects.

**PHYS 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**POLITICAL SCIENCE (POLS)****POLS 102. Introduction to American Government. 3 Hours.**

General survey of American national government and politics.

**POLS 103. Global Political Issues. 3 Hours.**

Analysis of issues in post-cold war international politics, ranging from traditional major power diplomacy and intervention to the newer problems of economic interdependence and development, human rights, population pressures on limited resources, and the environment.

**POLS 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**POLS 199. Orientation to Political Science. 1,2 Hour.**

Orientation to degree programs and requirements, departmental resources, curriculum options, student responsibilities and opportunities.

**POLS 210. Law and the Legal System. 3 Hours.**

Introductory course on the role of law in the political system. Includes a survey of subfields in United States law and an examination of participants, processes, and policy making in the United States legal system.

**POLS 220. State and Local Government. 3 Hours.**

The legal basis, structure, politics and operation of state and local governments, in the content of the American federal system.

**POLS 230. Introduction to Policy Analysis. 3 Hours.**

Examination of the causes and consequences of public policies. Substantive policies examined include: civil rights, housing, social services, environment, health, law enforcement, education, and taxation.

**POLS 240. Introduction to Public Administration. 3 Hours.**

The development, organization, and processes in governmental administration in the United States.

**POLS 250. Introduction to Comparative Politics. 3 Hours.**

An introduction to the political and governmental systems of industrialized and developing countries. Focuses on approaches to comparative political study, political cultures and participation, and government structures, processes, and policy performance.

**POLS 260. Introduction to International Relations. 3 Hours.**

Theories and concepts in international politics and their application to contemporary world politics.

**POLS 261. Introduction to National Security. 3 Hours.**

Introduction to theories related to security studies and national security. Includes discussions of intelligence, strategy, military operations, terrorism, and civil/military affairs, along with current events.

**POLS 270. Concepts in Political Theory. 3 Hours.**

Introduction to political theory using texts from antiquity through modernity. Themes include citizenship, power, justice, and political obligation.

**POLS 271. History of Political Thought 2. 3 Hours.**

Major political philosophers and ideas of the 17th, 18th, and 19th centuries, including Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Hegel, and Marx.

**POLS 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**POLS 298. Honors. 1-3 Hours.**

PR: Student in Honors Program and consent by the honors director. Independent reading, study or research.

**POLS 300. Empirical Political Analysis. 3 Hours.**

Designed to provide a basic understanding of how to read and conduct empirical political science research. Topics include research design, hypotheses testing, data collection, and statistical analysis. No prior knowledge of computers or statistics required.

**POLS 301. Introduction to Intelligence Analysis. 3 Hours.**

PR: POLS 260. A professionally-oriented survey of the history, logic, and methods of intelligence analysis as applied to policy-making in foreign policy and national security.

**POLS 302. Intelligence Analysis Methods. 3 Hours.**

PR: POLS 260 and POLS 301. An advanced course in the understanding and use of skills, processes, and tools currently used by intelligence analysts in the national security community.

**POLS 310. American Presidency. 3 Hours.**

Institutional, behavioral, and societal forces which have given rise to the modern presidency; factors which enhance and constrain the exercise of presidential power over those constituencies with which the president must interact; the nature and consequences of the presidential decision-making process; desirability and/or feasibility of reforming the presidency.

**POLS 311. Political Parties & Elections. 3 Hours.**

Parties and elections in America; emphasis on nomination and general election processes, campaigns, the mass media, campaign finance, voting, the electoral college, and parties in government.

**POLS 313. American Constitutional Law. 3 Hours.**

The role of the Constitution in the American political system. Topics include the political concept of constitutionalism; the role of the Supreme Court in the political process; division of powers among the three branches of government; and the constitutional relation between the national government and the states.

**POLS 314. Civil Liberties in the United States. 3 Hours.**

Issues in constitutional law concerning personal liberties against government action. Topics include free speech, press and association; religious freedoms; abortion; the right to privacy; due process of law; and criminal procedure safeguards.

**POLS 315. Law and Public Policy. 3 Hours.**

PR: POLS 210 or consent. Advanced examination of the role of trial courts in policymaking, including agenda-setting and policy formulation by courts, the outcomes of policy litigation, and the politics of legal reform.

**POLS 316. Public Opinion and Politics. 3 Hours.**

In-depth treatment of the origins, content, and impact of public opinion in American politics; political ideology, partisanship, socialization, mass media, opinion polls, and survey research techniques.

**POLS 317. Interest Groups and Democracy. 3 Hours.**

The role of interest groups in American politics, focusing on their distribution and internal dynamics, their involvement in campaigns and elections, their influence on public policy, and their place in a democratic system.

**POLS 318. Legislative Process. 3 Hours.**

Structure, organization and processes of legislative bodies; powers of the legislature; detailed study of law-making processes and procedures.

**POLS 320. American Federalism and Policy. 3 Hours.**

Examines the history and philosophical justification of federalism, the relationships among the federal, state and local levels of government, and the contemporary debate over what those governmental relationships should be in America today.

**POLS 321. West Virginia Government. 3 Hours.**

Organization and operation of the state government of West Virginia.

**POLS 323. Religion & Politics. 3 Hours.**

Examines how religion and religious institutions affect political outcomes and vice versa. The focus is on American politics, but the effects of religion on politics in other nations will also be discussed.

**POLS 324. Sexuality, Law, and Politics. 3 Hours.**

PR: Sophomore standing. Examines politically significant legal debates regarding sex, sexuality, sexual orientation, and gender identity, focusing primarily on the United States from the middle of the twentieth century to the present.

**POLS 331. Criminal Law Policy and Administration. 3 Hours.**

Legal and administrative approach to policy issues in criminal justice. Focuses on the criminal law, police, court decisions, and the implementation of law and policy in the criminal field.

**POLS 333. Politics of Social Welfare. 3 Hours.**

Questions of poverty and inequality: who are the poor; what causes economic inequality; what have been governmental and private solutions to the problem of poverty; and what successes and failures have there been in the war against poverty.

**POLS 334. Politics of Economic Policy. 3 Hours.**

An examination of U.S. economic policy, with an emphasis on the political considerations that influence policy development and implementation in government regulation, taxation, and spending.

**POLS 335. Civil Rights, Policy, and Politics. 3 Hours.**

Analysis of the law, politics, and policy related to discrimination in public accommodations, voting, education, housing and employment based on race, gender, national origin, handicapped status, and age.

**POLS 336. Energy Policy and Politics. 3 Hours.**

Investigates energy policy and politics from security, political economy, and environmental perspective. Focuses on various types of energy and regions of the world.

**POLS 337. Gender/Politics and Policy. 3 Hours.**

Comparative study of how gender differences affect politics across the world. Emphasis on advanced industrial democracies. Topics include: political attitudes and behavior, gender differences in political recruitment, and the impact of gender on public policy.

**POLS 338. Environmental Policy. 3 Hours.**

Explores the formulation and implementation of environmental policy, using both a policy process approach and policy analysis. Includes a discussion of the scientific, technological, risk, economic, and political variables which affect policy making in this area.

**POLS 339. National Security Analysis. 3 Hours.**

Introduction to the analysis of national security issues. Examines historical development of defense and military policy, arms procurement and transfers, deterrence, the application of game theory, and intelligence analysis.

**POLS 340. Social Movements in Fiction and Film. 3 Hours.**

In this course, students engage social movement theory through a varied selection of novels and film, which are used to illustrate abstract concepts related to political activism. The course is organized around three central themes: identity politics and activism, networked social movements, and social movement outcomes. It emphasizes liberal social movements in the American political context.

**POLS 342. Bureaucratic Politics. 3 Hours.**

Analysis of the nature and processes of American public administration (political, legal, economic, and social), including the role of bureaucracy in a democracy.

**POLS 345. Electoral Systems and Political Parties Around the World. 3 Hours.**

Analyzes electoral systems and their effects in theory and practice, addressing questions such as: What are the advantages/disadvantages of different decision rules? What are the origins and functions of political parties? By the end of the term, students should hone their skills in the research process, fact-checking, cooperative learning, and public speaking.

**POLS 346. The Electoral Process. 3 Hours.**

This course addresses election administration and its effects in theory and practice, asking questions such as: What are the infrastructure requirements for elections and how are they satisfied? How are ballots and other election systems designed to ensure security, privacy, and accuracy of the vote? What are the threats to election integrity and how are they mitigated?.

**POLS 347. Representation. 3 Hours.**

Examines the connections between voting, public opinion, representation, and policy outcomes.

**POLS 348. Field Research and Community Engagement in Elections and Campaigns. 3 Hours.**

Students will participate in experiential learning activities related to elections. They will participate as civic activists in get-out-the-vote efforts, campaign staffers, poll workers, or in other approved activities. Students will submit logs of their activities along with a course paper addressing the experience. The course will be treated as an independent study course.

**POLS 350. Government of Japan. 3 Hours.**

Survey of political institutions and governmental processes in Japan with special emphasis on the analysis of political problems in the post-war period.

**POLS 351. Russian and Post-Soviet Politics. 3 Hours.**

PR: POLS 250 or POLS 260. Survey of the politics and government in Russia and post-Soviet states.

**POLS 352. Politics of the European Union. 3 Hours.**

PR: POLS 250. Examination of the evolution of European integration and the political and institutional dynamics of the contemporary European Union.

**POLS 353. Western Democratic Governments. 3 Hours.**

Cross-national and/or country based analysis of selected western democracies, such as Canada, Great Britain, France, Italy, and the European Union.

**POLS 354. Government of China. 3 Hours.**

Survey of political institutions and governmental process in the People's Republic of China with special emphasis on the analysis of political problems since 1949.

**POLS 355. Governments of Latin America. 3 Hours.**

Comparative study of the government and politics of the Latin American states.

**POLS 356. Politics of the Middle East. 3 Hours.**

Survey of the domestic and international political dynamics of the Middle East.

**POLS 357. Comparative Law and Politics. 3 Hours.**

An introduction to the comparative analysis of law and politics. Examines the forms of law, legal communities, judiciaries, and justice systems of polities other than the United States.

**POLS 358. Politics of Africa. 3 Hours.**

Historical legacies and current political processes of tropical African countries.

**POLS 359. Politics of Terrorism. 3 Hours.**

Terrorism is a method used against civilian population to affect political change. To understand this, the course will examine the ideology, history and tactics used of those engaged in violence.

**POLS 360. International Political Economy. 3 Hours.**

Analysis of the relationship between international relations and economics. Topics include free trade, globalization, regionalism, and development.

**POLS 361. International Law and Institutions. 3 Hours.**

Analysis of the development of international organizations, norms, and law, as well as the creation and functioning of the United Nations and the European Union.

**POLS 362. Comparative Foreign Policy. 3 Hours.**

PR: POLS 260. Introduction to comparative foreign policy focused on political structures and processes in advanced industrial democracies, transitional polities, and Third World states. Includes three weeks international system simulation.

**POLS 363. International Law. 3 Hours.**

Law governing relations among nations, including development of rules, means of enforcement, and conflict between theory and practice.

**POLS 364. American Foreign Relations. 3 Hours.**

PR: POLS 260 or consent. Examination of contemporary U.S. foreign policy and its historical, cultural, and domestic political roots. Substantive and theoretical issues in understanding foreign relations since WW II, including both continuity and change in the emerging post-cold war system.

**POLS 365. Foreign Policy Decision-Making. 3 Hours.**

PR: POLS 260. An advanced course examining the psychological and political dynamics by which decision-making formulates foreign policy with emphasis on American national security. Includes three weeks' simulation.

**POLS 368. Politics of War and Peace. 3 Hours.**

PR: POLS 260 or consent. Analysis of great power politics in the international system. Examination of theories of war, historical patterns of the balance of power, and origins of the 20th century's major conflicts: WW I, WW II, and the Cold War.

**POLS 369. Far East International Affairs. 3 Hours.**

International relations of countries of the Far East with emphasis on historic roots of recent conflicts, the roles of the United States and other major powers, confrontation between the countries in the region, and the regional cooperation and security problems in the post-World War II period.

**POLS 370. Dictatorship and Democratization. 3 Hours.**

Examines the politics of authoritarian rule by focusing on dictators and their demise. Compares current scholarship with real-world accounts of a variety of dictatorships, differentiating among governing strategies and long-term impacts. Students will gain the ability to analyze trends and outcomes, as well as comprehension of different approaches to the study of dictatorship.

**POLS 371. History of Political Thought 2. 3 Hours.**

Major political philosophers and ideas of the 17th, 18th, and 19th centuries, including Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Hegel, and Marx.

**POLS 373. American Political Philosophy. 3 Hours.**

Major American political ideas and their influence upon American society and government from the 17th century to the present.

**POLS 374. Ancient Political Thought. 3 Hours.**

Focuses on ancient Greek, Roman, and near-eastern political thought, while arguing for the contemporary relevance of ancient texts.

**POLS 376. Contentious Politics. 3 Hours.**

This course focuses on non-institutional forms of disruptive political behavior, including public demonstrations, riots, strikes, roadblocks, terrorism, and civil war. In studying these phenomena, the course explores what fuels "claim-making," the circumstances under which contentious political participation becomes more likely, and how movements organize. Case studies of current and recent contentious events are examined.

**POLS 383. Debate. 3 Hours.**

Intensive research and writing on policy options related to the annual intercollegiate debate topic. Research will focus on both the policy and political implications of enacting and implementing a variety of options.

**POLS 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**POLS 450. Elections and Political Parties Around the World. 3 Hours.**

Analyzes international election rules and their effects in theory and practice, addressing questions such as: How do groups make decisions? What are the advantages/disadvantages of different decision rules? What are the origins and functions of political parties? By the end of the term, students should hone their skills in the research process, fact-checking, cooperative learning, and public speaking.

**POLS 452. European Union Law/Legal Systems. 3 Hours.**

3 Hr. An introduction to the politics of law in Europe. Examines the forms of law, legal communities, judiciaries, and justice systems of the major European politics (Great Britain, France, and Germany.).

**POLS 453. European Union Law/Institutions. 3 Hours.**

3 Hr. An examination of the European Union with respect to the evolution of its legal framework, core decision making institutions, and current issues of constitutional prospects, further economic integration, and protection of human rights.

**POLS 460. Gender and International Relations. 3 Hours.**

PR: POLS 260. Focuses on how women affect and are affected by international conflict, development, and human rights issues, using a 'feminist' lens and methodology in studying international relations.

**POLS 461. Transformation of War. 3 Hours.**

The nature of war has changed significantly in the past half-century. This course examines the new aspects of violent conflict, specifically asymmetric war, insurgency, and Fourth Generation Warfare, through theory and case studies.

**POLS 462. Intelligence Failures. 3 Hours.**

Explores complicated attempts to understand what constitutes an intelligence failure and how policy, intelligence, and decision-makers approach these issues. Evaluates the validity of theories of intelligence failure in analyzing case studies.

**POLS 484. Capstone: Build a Politics Podcast. 3 Hours.**

PR: Political science major. Students work in teams to apply knowledge and skills they have gained as political science majors to creating podcast episodes that describe and explain political events or theories about politics to a broad audience. This course serves as a capstone for political science majors.

**POLS 487. Capstone: Senior Paper. 3 Hours.**

One of three capstone options for Political Science majors. Students choosing this option undertake a faculty-supervised independent research project culminating in a written research paper and oral presentation at a faculty/student colloquium.

**POLS 488. Capstone: Political Simulation. 3 Hours.**

One of three capstone options for Political Science majors. Students choosing this option conduct research and participate in role-playing exercises through planned political simulations involving both U.S. politics and international relations.

**POLS 489. Capstone: Citizenship Seminar. 3 Hours.**

One of three capstone options for political science majors. Students choosing this option participate in a seminar focusing on the role of citizens in a democracy, with emphasis on experimental learning through civic participation.

**POLS 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**POLS 491. Professional Field Experience. 1-18 Hours.**

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.

**POLS 491A. Professional Field Experience. 1-18 Hours.**

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.

**POLS 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**POLS 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**POLS 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**POLS 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**POLS 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**POLS 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

## **PUBLIC SERVICE AND LEADERSHIP (PSL)**

**PSL 110. Introduction to Public Service and Leadership. 3 Hours.**

Introduction to Public Service and Leadership is the introductory course for the major. Introduction of the overall goals of the major and the underlying academic disciplines to the students. Seeks to help students understand how different social groups conceptualize their social environments, and introduce the idea of leadership as a vehicle for facilitating communication between groups.

**PSL 210. Community Organization and Change. 3 Hours.**

PR: PSL 110. Presents and analyzes techniques to organize various types of communities and effect change in those communities. Explores the ethical and moral responsibilities and challenges to leading change for the public good.

**PSL 250. Servant Leadership: The Legacy of Senator Rockefeller. 3 Hours.**

Practice oriented course. Describes the characteristics and importance of servant leadership through examination of well known leaders including Sen. John D. Rockefeller IV. The impact of servant leadership on community change is examined and evaluated. Service learning component included as part of the course.

**PSL 300. Assessing Policy Change. 3 Hours.**

PR: PSL 210. Study of necessary tools to analyze and choose from among public policy alternatives that are relevant to the issue or problem they want to address. Additionally, students will evaluate the implementation of the policy alternative(s) they have chosen. Includes archival research in Sen. Rockefeller's papers at the WVU library.

**PSL 310. Community Relations and Communication. 3 Hours.**

Development of skills necessary to communicate with various audiences, with emphasis given to listening skills.

**PSL 320. Program Development and Evaluation. 3 Hours.**

Students identify a community issue for which a program can be developed; learn grant and fellowship writing skills to support programmatic development; and explore programmatic assessment and evaluation methodologies.

**PSL 380. Internship. 3-12 Hours.**

Supervised professional or research experience in a public service setting. Provides students with relevant professional experience based on their interests, skills, and knowledge within fields related to the Public Service and Leadership major. Develops professional and networking skills.



**PSL 410. Capstone: Managing Change. 3 Hours.**

PR: PSL 300 and PSL 380. Field research project. Integrates all the experiences accumulated during coursework and service experiences by developing and implementing a project to bring change to their community.

**PSL 411. Integration of Professional Experiences. 1 Hour.**

PR: PSL 380. Professional development opportunities for career preparation in the field of public service leadership.

**PSYCHOLOGY (PSYC)****PSYC 101. Introduction to Psychology. 3 Hours.**

Survey of general psychology.

**PSYC 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**PSYC 201. Psychology as a Profession. 1 Hour.**

PR: PSYC 101. Orientation to opportunities for experience, employment, and graduate and professional training in psychology.

**PSYC 203. Research Methods and Analysis 1. 3 Hours.**

PR: PSYC 101 with a minimum grade of C- and (MATH 124 or higher with a minimum grade of D- or STAT 211 with a minimum grade of D)- and Coreq: PSYC 203L. Research methods and data analysis techniques for descriptive and correlational designs in psychology. Emphasis is placed on critically evaluating published research, as well as designing, implementing, analyzing, and reporting original studies.

**PSYC 203L. Research Methods and Analysis 1 Laboratory. 0 Hours.**

PR: Corequisite of PSYC 203. Research Methods and Analysis 1 - PSYC 203 Laboratory.

**PSYC 204. Research Methods and Analysis 2. 3 Hours.**

PR: PSYC 203 and PSYC 203L with a minimum grade of C- and Coreq: PSYC 204L. Research methods and data analysis utilizing experimental and quasi-experimental designs in developmental, experimental, clinical, and social psychology in the laboratory and the natural environment.

**PSYC 204L. Research Methods and Analysis 2 Laboratory. 0 Hours.**

PR: Corequisite of PSYC 204. Research Methods and Analysis 2 - PSYC 204 Laboratory.

**PSYC 215. Research Exploration in Psychology. 1 Hour.**

PR: PSYC 203 with a minimum grade of C-. Exploration of research experiences available in the WVU psychology department. Students will learn about the focus of various faculty research labs and specific ongoing projects through a series of discussions with graduate student and faculty researchers. Opportunities to join a research team will be emphasized.

**PSYC 231. Leadership and Human Relations. 3 Hours.**

PR: PSYC 101. Concentrates on principles of psychology that can be applied to improving relations with others as well as being a more effective leader. Pragmatic orientation includes using the principles to solve problems in relationships, in small organizations, and in large systems.

**PSYC 232. Sex Roles and Behavior. 3 Hours.**

PR: PSYC 101. Relates sex-typed behavior to physiological, social, and cultural processes. Current social concerns such as rape and abortion legislation, child care, and expanded career options for both sexes are examined from a psychological perspective.

**PSYC 233. Psychology of Cinema. 3 Hours.**

This course examines film from a psychological perspective. Areas of focus include the art and science of film production, and the impact of cinema on the individual and society. Analysis of psychological themes is emphasized.

**PSYC 234. Drugs and Behavior. 3 Hours.**

PR: PSYC 101. Behavioral, neurochemical, pharmacological, historical, legal, social, and clinical aspects of commonly used and abused psychoactive drugs.

**PSYC 241. Introduction to Human Development. 3 Hours.**

PR: PSYC 101. Survey of human psychological development across the life span with emphasis on change in biological, cognitive, and social-emotional processes. Special attention given to theoretical, conceptual, methodological, and practical issues.

**PSYC 251. Introduction to Social Psychology. 3 Hours.**

PR: PSYC 101. Examination of social interaction and behavior from a psychological perspective. Topics include: attraction, social perception and cognition, attitudes and attitude change, social influence and group process, prosocial behavior and aggression, cultural influence, and prejudice.

**PSYC 281. Introduction to Psychological Disorders. 3 Hours.**

PR: PSYC 101. Introduction to major categories of psychological and behavioral disorders, including mood disorders, anxiety disorders, substance-related disorders, psychotic disorders, and personality disorders. Etiology, prevention, and treatment will be discussed.

**PSYC 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PSYC 298. Honors. 1-3 Hours.**

PR: Students in the Honors Program and consent by the honors director. Independent reading, study, or research.

**PSYC 301. Biological Foundations of Behavior. 4 Hours.**

PR: WVU sections require PSYC 204 or (PSYC 101 and PR or CONC: BIOL 219 and (BIOL 219L or BIOL 220) with a minimum grade of C- in each and Coreq: PSYC 301L, WVUIT sections require PSYC 204 with a minimum grade of C- and Coreq: PSYC 301L. Introduction to the biological and psychological foundations of animal behavior. Survey of fundamental concepts (evolution, genetics, adaptation, and learning) and research methods in understanding behavioral neuroscience.

**PSYC 301L. Biological Foundations of Behavior Laboratory. 0 Hours.**

Coreq: PSYC 301. Biological Foundations of Behavior - PSYC 301 Laboratory.

**PSYC 302. Behavior Principles. 4 Hours.**

PR: PSYC 101 with a minimum grade of C- and (PSYC 204 with a minimum grade of C- or BIOL 302 or STAT 312 and Coreq: PSYC 302L and Psychology or Neuroscience majors with junior or senior standing. Principles of behavior and learning and the significance of these principles for psychological theory and application; laboratory exercises and demonstrations.

**PSYC 302L. Behavior Principles Laboratory. 0 Hours.**

Coreq: PSYC 302. Behavior Principles - PSYC 302 Laboratory.

**PSYC 304. Critical Thinking in Psychology. 3 Hours.**

PR: PSYC 101 with a minimum grade of C- and (PSYC 232 or PSYC 234 or PSYC 241 or PSYC 251 or PSYC 281). Critical thinking skills in psychology, which include the ability to recognize patterns; to engage in scientific reasoning about psychological phenomena; to adopt different perspectives when evaluating ideas or issues; and to evaluate research findings reported in psychology journals and the mass media.

**PSYC 315. Professional Development. 2 Hours.**

PR: PSYC 101. Expand students' awareness of careers that utilize psychological concepts. Students will integrate course concepts with the application of psychology, apply best practices for career development and evaluate their fit for various careers.

**PSYC 331. History and Systems of Psychology. 3 Hours.**

PR: PSYC 202 or PSYC 203 or PSYC 204 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 or PSYC 293 and at least junior or senior standing. A survey of psychology from its origins in philosophy, biology, and physics through the early major schools of psychological thought to modern perspectives on the science of behavior and its applications to human affairs.

**PSYC 332. Multiculturalism in Psychology. 3 Hours.**

PR: PSYC 101. Theoretical and empirical issues in multicultural psychology. Topics include psychological processes and impact of bias, discrimination, racism, and privilege, as well as awareness, sensitivity, and tolerance in cross-cultural interactions.

**PSYC 341. Child Development. 3 Hours.**

PR: PSYC 101 and PSYC 241. This course focuses on cognitive, social, and emotional developmental processes in childhood. Empirical findings in child development as well as the methods used to obtain those findings will be emphasized throughout the course.

**PSYC 342. Prenatal and Infant Development. 3 Hours.**

PR: PSYC 241 and junior or senior standing. Behavior and development from conception to two years. Includes behavioral genetics and hazards of prenatal development, as well as sensory motor, cognitive, language, and socioemotional behavior during infancy.

**PSYC 343. Child and Adolescent Development. 3 Hours.**

PR: PSYC 241 and junior or senior standing. Theory and research on major psychological processes in childhood and adolescence; maturation, personality, socialization, sensory, and cognitive development.

**PSYC 344. Adolescent Development. 3 Hours.**

PR: PSYC 241. This course focuses on cognitive, social, and emotional developmental processes during adolescence. Special emphasis is placed on critical evaluation of research on adolescent development.

**PSYC 345. Adulthood and Aging. 3 Hours.**

PR: PSYC 241 and junior or senior standing. Psychological issues in the study of adulthood, with an emphasis on the characteristics of older adults. Topics include the psychosocial and biological context of aging, cognitive and personality changes from early to late adulthood, psychopathology in later life, dementia, issues in caregiving, and death and dying.

**PSYC 351. Topics in Social Psychology. 3 Hours.**

PR: PSYC 251 and junior or senior standing. Social factors that determine human behavior, survey of research in selected areas of social psychology and their implications for social phenomena.

**PSYC 362. Psychological Assessment. 3 Hours.**

PR: PSYC 202 or PSYC 204 and at least junior standing. Psychometric theory and development of psychological assessment instruments. Includes behavioral, personality, intellectual, neuropsychological, forensic, achievement, and aptitude assessment.

**PSYC 363. Personality Theory. 3 Hours.**

PR: PSYC 204 with a minimum grade of C- or PSYC 304. Theoretical and empirical readings in a survey of major perspectives in personality theory, including dynamic, cognitive, humanistic, and behavioral.

**PSYC 364. Psychology of Adjustment. 3 Hours.**

PR: PSYC 232 or PSYC 241 or PSYC 251 or PSYC 281. Dynamic principles of human personality adjustment. Focus on life factors, including sociocultural differences, that influence behavior and experience.

**PSYC 365. Forensic Psychology. 3 Hours.**

PR: PSYC 101 and junior or senior standing. Surveys role of psychology in the legal system. Issues addressed include: insanity, child custody, sexual abuse, police fitness, eye witness and jury selection.

**PSYC 367. Introduction to Clinical Psychology. 3 Hours.**

PR: PSYC 281. Surveys field of clinical psychology, including its development, important issues regarding the training and practice of clinical psychologists, some of the politics of the profession, and future directions for the field.

**PSYC 368. Ethics and Practice in Behavior Analysis. 3 Hours.**

PR: PSYC 101. Introduction to ethical guidelines and practice issues in Applied Behavior Analysis. Covers the Behavior Analysis Certification Board Compliance Code, client intake and identification of the problem, behavioral assessment, and fundamental elements of behavior change.

**PSYC 370. Emotions and Mood. 3 Hours.**

PR: PSYC 204 with a minimum grade of C- or PSYC 304. Theories, concepts and methodologies pertaining to emotions and mood. Topics also include development and socialization of emotions, and outcomes.

**PSYC 379. Community Psychology. 3 Hours.**

PR: PSYC 202 or PSYC 203 or PSYC 204 or PSYC 231 or PSYC 232 or PSYC 241 or PSYC 251 and at least junior standing. Applications of learning principles to community programs. Topics may include education, youth violence, drug abuse, behavioral safety, and organizational behavior management.

**PSYC 380. Health Psychology. 3 Hours.**

PR: PSYC 204 with a minimum grade of C- or PSYC 304. Biological, psychological, and social perspectives on health behavior and health outcomes. Covering theoretical models of health, current health and medical management policies, and real-world examples of health issues impacting psychological well-being.

**PSYC 382. Exceptional Children. 3 Hours.**

PR: PSYC 241 and junior or senior standing. Children with various diagnoses and challenges, including intellectual disability, neurodivergence, behavior disorders, and mental health disorders. History, philosophical approaches to assessment and intervention, sociocultural issues, and ethical challenges will be discussed.

**PSYC 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PSYC 401. Psychology Capstone Experience. 1 Hour.**

PR: PSYC 101 and PSYC 201 and STAT 211 and senior standing. Experience in coursework, research, or service that integrates knowledge gained as a major in psychology. To be taken concurrently with capstone experience, details of which are to be determined in consultation with advisor.

**PSYC 402. Advanced Behavior Principles. 3 Hours.**

PR: PSYC 302 with a minimum grade of C-. This course will expand and deepen students' understanding of behavior principles and the assumptions, methods, and philosophy that underlie their study; teach students how to critically evaluate scientific literature in behavior analysis; and familiarize students with some interesting research problems in behavior analysis and ways in which experimenters have tried to solve these problems.

**PSYC 411. Applying to Graduate School. 1 Hour.**

PR: Senior psychology major. Designed to guide students through the process of applying to graduate school in psychology. Students will investigate graduate training alternatives, select potential graduate programs, complete application packages, and prepare for interviews. (Course will be graded on a pass/fail basis.).

**PSYC 423. Cognition and Memory. 3 Hours.**

PR: PSYC 101 with a minimum grade of C- and (PSYC 204 with a minimum grade of C- or BIOL 302 or STAT 312 and Psychology or Neuroscience majors with junior or senior standing. Theoretical and empirical issues in cognitive psychology. Topics include mechanisms and theories of attention, memory, language, and conceptual processes.

**PSYC 424. Learning and Behavior Theory. 3 Hours.**

PR: PSYC 302 with a minimum grade of C- and junior or senior standing. Advanced course concerned with fundamental conceptual issues in the psychology of learning and behavior.

**PSYC 425. Perception. 3 Hours.**

PR: (NRSC 201 or PSYC 301) with a minimum grade of C-, Psychology or Neuroscience major with junior or senior standing. Exploration of human sensory systems, focusing on anatomy and neurophysiology of the five sensory systems (vision, audition, touch, smell, and taste), as well as the cognitive processes and psychological factors that shape perceptual experience.

**PSYC 426. Physiological Psychology. 3 Hours.**

PR: (NRSC 201 or PSYC 301) with a minimum grade of C- and junior or senior standing. Advanced study of the physiological mechanisms of behavior. Topics include neural mechanisms of behavior and issues, methods, and findings in behavioral neuroscience.

**PSYC 427. Neuroscience of Sleep. 3 Hours.**

PR: (NRSC 201 or PSYC 301) with a minimum grade of C-. Exploration of human sleep, focusing on stages of consciousness, circadian rhythms, REM vs. non-REM sleep, sleep disorders, neuroscience of dreams, and development of sleep cycles.

**PSYC 428. Hormones and Behavior. 3 Hours.**

PR: (NRSC 201 or PSYC 301) with a minimum grade of C- and Psychology or Neuroscience major. Explores the complex interactions between the endocrine system, brain, and behavior in a broad range of animals, including people. Special emphasis is placed on reproductive hormones, as well as systems of homeostasis, aggression, and biological rhythms.

**PSYC 429. Clinical Neuroscience. 3 Hours.**

PR: PSYC 281 and (NRSC 201 or PSYC 301) with a minimum grade of C- in each. Advanced study of the neural substrates of psychiatric disorders including schizophrenia, mood disorders, anxiety disorders, trauma- and stressor-related disorders, substance-related and addictive disorders, and neurodevelopmental disorders.

**PSYC 445. Health Disparities Across the Lifespan. 3 Hours.**

PR: PSYC 241 or PSYC 251. Biological, psychological, and social perspectives on health disparities and health outcomes. Examination of the impact of discrimination on health.

**PSYC 474. Applied Behavior Analysis. 3 Hours.**

PR: PSYC 302 with a minimum grade of C- and junior or senior standing. The application of basic learning principles to changes in socially significant human behavior.

**PSYC 480. Psychology Teaching Apprenticeship Capstone. 3 Hours.**

PR: PSYC 204 with a minimum grade of C- and consent. Capstone teaching apprenticeship in a psychology course. Students will work with a psychology course instructor to develop college-level teaching and course administration skills. Students will also complete a capstone project related to teaching pedagogy or factors influencing student learning. This course focuses on development of presentation and leadership skills, and fulfills the capstone requirement for Psychology majors.

**PSYC 481. Psychology Field Experience Capstone. 3 Hours.**

PR: PSYC 204 with a minimum grade of C- and consent. Capstone experience involving placement at a community agency performing work relevant to psychology. Students will gain "on-the-job" experience utilizing the skills and knowledge developed in their previous coursework, while providing insight into future career options. This course fulfills the capstone requirement for Psychology majors.

**PSYC 485. Psychology Research Capstone. 3 Hours.**

PR: PSYC 204 with a minimum grade of C- and consent. Capstone research experience supervised by a psychology faculty member. Students will apply their training from throughout the psychology curriculum to complete a research project that contributes to the goals of a faculty research lab, culminating in formal written and oral presentations. This course provides a realistic exposure to performing scientific research and fulfills the capstone requirement for Psychology Majors.

**PSYC 486. Behavior Analysis Field Experience Capstone. 1-4 Hours.**

PR: PSYC 302 with a minimum grade of C-. This course provides hands-on behavior analytic experience in applied settings, opportunities to apply and receive supervision in the implementation of behavior analytic techniques in various settings: clinics, schools, medical facilities, group homes and teletherapy. The course will focus on analysis of behavior, implementation of skill acquisition programs, procedures for behavior reduction, and development of programs, graphing templates, and data collection.

**PSYC 487. Behavior Analysis Research Experience. 1-4 Hours.**

PR: PSYC 302 with a minimum grade of C-. This course provides hands-on behavior analytic experience in a research setting. This supervised experience will provide students with opportunities to conduct research in one or more of the following settings: human operant, animal laboratory, and applied research sites. Research activities may include recruiting participants, collecting/analyzing data, designing/implementing an experiment, assisting with literature searches, and participating in lab meetings.

**PSYC 488. Psychology Honors Thesis Proposal. 3 Hours.**

PR: PSYC 204 with a minimum grade of C- and consent. First in a sequence of two semester-long courses where original psychological research is performed by a student under the direction of a faculty research mentor in the Psychology Department. Focus on writing and orally defending a research proposal, as well as starting the research project in the laboratory.

**PSYC 489. Psychology Honors Thesis. 3 Hours.**

PR: PSYC 488 with a minimum grade of C- and consent. Second in a sequence of two semester-long courses where original psychological research is performed by a student under the direction of a faculty mentor in the Psychology Department. Students will report their research in an APA-style manuscript, complete an oral thesis defense, and present their project in a capstone poster symposium. This course fulfills the capstone requirement for Psychology Majors.

**PSYC 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**PSYC 490A. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**PSYC 491. Professional Field Experience. 1-18 Hours.**

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.

**PSYC 491A. Professional Field Experience. 1-18 Hours.**

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.

**PSYC 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**PSYC 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**PSYC 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regularly scheduled courses.

**PSYC 495A. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regularly scheduled courses.

**PSYC 497. Research. 1-6 Hours.**

Independent research projects.

**PSYC 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**PSYC 498A. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**RELIGIOUS STUDIES (RELG)****RELG 102. Introduction to World Religions. 3 Hours.**

This course explores five of the most widely practiced world religions; Judaism, Christianity, Islam, Hinduism, and Buddhism. Students are introduced to the history and basic tenets of each faith.

**RELG 120. Introduction to the Study of Religion. 3 Hours.**

Religious Studies as a field is interdisciplinary in its approaches. Drawing on sociology, anthropology, psychology, theology, and other perspectives, students will explore key themes, major ideas, and important figures in the study of religion. We will examine what it means to "study religion," and explore what different perspectives might contribute to the field.

**RELG 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**RELG 219. The History of Christianity. 3 Hours.**

This course explores the birth and evolution of Christianity from its inception until the modern era. Emphasis will be placed upon the significant people and events that shaped Christianity.

**RELG 222. Origins of Judaism. 3 Hours.**

Main beliefs and practices of the Jewish religion in its formative period, 500 B.C. to 500 A.D. Selections from the late Old Testament writings, the Apocrypha and Pseudepigrapha, the Dead Sea Scrolls, and rabbinical literature.

**RELG 223. Christianity in America. 3 Hours.**

Explore the history of American Christianity, as republican ideology, democratic polity, and commitment to individual freedom create a competitive religious marketplace without an established church.

**RELG 230. Religions of India. 3 Hours.**

Proto-Indian religion, Hinduism, beginnings of Buddhism, Jainism, Sikhism; historical and theological foundations; developments of thought; and contemporary expressions and encounters with the modern world.

**RELG 231. Religions of China and Japan. 3 Hours.**

Buddhism, Confucianism, Taoism, Shintoism; historical and theological foundations; developments of thought; and contemporary expressions and encounters with the modern world.

**RELG 232. History and Practice of Islam. 3 Hours.**

Examines the origins and development of Islam from its inception in ancient Arabia to the modern era. The central beliefs, practices, and denominations associated with Islam will also be explored.

**RELG 255. Religion Across Cultures. 3 Hours.**

Introduces cross-cultural study of religion, with emphasis on non-western examples; surveys classic statements by major modern theorists, focusing on comparison in modern and secular academic setting.

**RELG 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.



**RELG 301. Studies in Asian Scriptures. 3 Hours.**

Explores the content and background of Hindu, Buddhist, and Confucian scriptures from the Vedic period through the modern era. Examines the historical, cultural, and religious settings of the texts as well as their theological concepts.

**RELG 303. Studies in Christian Scripture. 3 Hours.**

This course explores the origin and development of the Christian Bible. The historical, cultural, and religious settings of the texts, as well as their theological intent, will be examined.

**RELG 304. Studies in Hebrew Scriptures. 3 Hours.**

This course explores the origin and development of the Hebrew Bible. The historical, cultural, and religious settings of the texts, as well as their theological intent, will be examined.

**RELG 305. Biblical History/Archaeology. 3 Hours.**

Explores development of the biblical world from 2,000 BCE through the first century CE. Various cultures will be examined socially, historically, and religiously. How biblical archaeology impacts understanding of the Bible will also be discussed.

**RELG 306. Biblical History and Archeology of Israel. 1-6 Hours.**

Study abroad program in Israel. Students explore the biblical world from the Iron Age to the Roman era through participation in an archaeological dig. Examines social, historical, and religious dimensions of various ancient cultures.

**RELG 310. Historical Theology. 3 Hours.**

Explore the historical development of Judeo-Christian theology from ca. 1000 BCE through the mid-20th century. Topics will include the nature of God, Christology, and apocalypticism.

**RELG 330. Religion and Music. 3 Hours.**

Exploration of religion through music -- a source of spiritual elation, social cohesion, and empowerment in cultures around the world. Musical sound is sacred in most religions because it embodies the divine and can be shared by all participants. Application of ideas, theories, and methods to the diverse contours and contexts of post-1960s popular music.

**RELG 335. Religion and Science. 3 Hours.**

Introduction to, and survey of, the professional, popular, and academic relationships between religion and science, based on the issues raised by following questions: Where did we come from? Where are we going? In the beginning, why did the 'Big Bang' occur? Do quantum physics challenge our assumptions about reality? Is evolution God's way of creating?.

**RELG 350. Biblical Ethics/Current Issues. 3 Hours.**

Introduction to biblical ethics and its application to current issues. Issues such as war, the environment, and biotechnology are explored by interpreting biblical texts as a touchstone of ethical principles and values.

**RELG 364. Gods and Monsters. 3 Hours.**

Throughout religious history, the ideas of the sacred or divine have often been paired with questions of evil and terror. Examination of the ways good and evil - or "gods and monsters" - have been considered, addressed, and adapted to specific cultural contexts.

**RELG 365. Theories of Magic and Religion. 3 Hours.**

Exploration of ancient, pre-modern, and postmodern ideas of the relationship between magic and religion. Magic and religion are terms which are often understood in relation to each other; however, our own understanding of what these words mean impacts our understanding of how they relate to each other.

**RELG 366. Evolution of Evil & The Devil. 3 Hours.**

Explores the history of Evil and the Devil from the biblical era to the 20th century. Primarily explores Evil and the Devil from a Judeo-Christian perspective, but other world traditions' views are examined as well, including Islam, Hinduism, and Buddhism. Historical accounts, relevant contemporary texts, and media portrayals are some of the methodologies utilized.

**RELG 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**RELG 410. Apocalypse. 3 Hours.**

PR: ENGL 102 or ENGL 103. Examine the apocalyptic literature of Judaism and Christianity and consider its perspectives and functions by tracing the impact of leading theologies and interpretations of end-time prophecy.

**RELG 482. Interactions in World Religions. 3 Hours.**

PR: 12 credits of RELG course work or consent. Explores the in-depth history and interactions among major world religions and cultures from ancient times through the modern era. Emphasis upon specific geographical regions including the Middle East, Asia Minor, and the Far East.

**RELG 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**RELG 491. Professional Field Experience. 1-18 Hours.**

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.

**RELG 492. Directed Study. 1-3 Hours.**

Directed study, reading, and or research.



**RELG 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**RELG 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**RELG 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**RELG 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**RELG 497. Research. 1-6 Hours.**

Independent research projects.

**RELG 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**RUSSIAN (RUSS)****RUSS 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**RUSS 301. Conversation and Composition 1. 3 Hours.**

PR: RUSS 204. Emphasis on development of written and oral communicative skills of contemporary Russian.

**RUSS 302. Conversation and Composition 2. 3 Hours.**

PR: RUSS 301. Continuation of RUSS 301. Emphasis on development of written and oral communicative skills of contemporary Russian.

**RUSS 303. Advanced Structure and Reading 1. 3 Hours.**

PR: RUSS 204. Development of communicative skills, with emphasis on reading authentic texts and review of Russian language.

**RUSS 304. Advanced Structure and Reading 2. 3 Hours.**

PR: RUSS 303. Continuation of RUSS 303. Development of communicative skills, with emphasis on reading authentic texts and review of Russian language structures.

**RUSS 331. The Russian Short Story. 3 Hours.**

PR: RUSS 204. Reading, discussing, and writing in Russian about short stories of selected nineteenth-century Russian writers.

**RUSS 332. The Russian Short Story. 3 Hours.**

PR: RUSS 204. Reading, discussing, and writing in Russian about short stories of selected contemporary Russian writers.

**RUSS 341. Survey of Russian Literature. 3 Hours.**

PR: RUSS 204. Major works of selected Russian authors from the beginning through the nineteenth century, including those of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, and Tolstoy.

**RUSS 342. Survey of Russian Literature. 3 Hours.**

PR: RUSS 204. Major works of selected Russian authors from the beginning of the twentieth century to the present.

**RUSS 351. Russian Through Music. 3 Hours.**

PR: RUSS 204 or consent. Conducted in Russian. Course acquaints students with the diverse music styles and genres in Russian culture, and develops Russian language proficiency through exposure to authentic textual and audio-visual materials of Russian classical and contemporary songs and music pieces, as well as discussions.

**RUSS 352. Russian in Action. 3 Hours.**

PR: RUSS 204 or consent. Conducted in Russian. Course helps students improve fluency and authentic flair of speech by providing intensive practice in contemporary standard Russian pronunciation, stress, and intonation. Course helps students improve pronunciation and aural sensitivity to Russian speech.

**RUSS 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**RUSS 450. Modern Russian Society. 3 Hours.**

PR: RUSS 204 or consent. Conducted in Russian. For students in the fourth year of Russian or higher. Course improves students' reading, speaking, listening, and grammatical skills, with a particular emphasis on post-Soviet language and culture. Topics focus on idiomatic language use and contemporary society.

**RUSS 451. Russian Culture. 3 Hours.**

PR: RUSS 204. A study of Russian civilization, customs, and ethos.

**RUSS 452. Business and Political Russian. 3 Hours.**

PR: RUSS 204 or consent and recommended for students in third- or fourth-year Russian or higher. Conducted in Russian. Course advances competencies in formal communication and introduces basic concepts and topics from the business and political realms in contemporary Russian society, the Russian-speaking world, and the global workplace.

**RUSS 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**RUSS 491. Professional Field Experience. 1-18 Hours.**

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.

**RUSS 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**RUSS 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**RUSS 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**RUSS 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**RUSS 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## **SOCIOLOGY (SOC)**

**SOC 101. Introduction to Sociology. 3 Hours.**

Basic course intended to develop a perspective about the nature of social processes and the structure of society.

**SOC 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**SOC 207. Social Problems in Contemporary America. 3 Hours.**

Sociological analysis of the causes, effects and approaches to preventing and reducing social problems in American society.

**SOC 221. Families and Society. 3 Hours.**

Historical comparative approach to changing structure and functions of the family institution. Effect of economic, demographic, and cultural changes on relationships, gender roles, marriage, childcare; variations by socioeconomic status, race, ethnicity, gender, sexual orientation.

**SOC 225. Inequality and the Media. 3 Hours.**

Analyzes how media reflects and shapes inequalities in society with emphasis on race, class, gender, and sexual orientation. Content is based on research findings derived from studies of contemporary society and media.

**SOC 226. Sexuality and Society. 3 Hours.**

Examines sociological perspectives on sexuality, sexual identity, and associated attitudes and beliefs. Emphasis is given to processes through which these concepts and our understandings of them are socially constructed.

**SOC 235. Race and Ethnic Relations. 3 Hours.**

Racial and ethnic groups are examined in terms of their history, transformation over time, and the contemporary conditions and issues they face. Emphasis is on prejudice as well as systemic racism.

**SOC 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**SOC 301. Sociological Theory. 3 Hours.**

PR: SOC 101 and (STAT 201 or STAT 211) and PR or CONC: ANTH 105. Systematic analysis of major sociological theories viewed from the historical perspective and in terms of current research.

**SOC 304. Complex Organizations. 3 Hours.**

The structure and functioning of large-scale, bureaucratic organizations, including studies of industrial organizations, prisons, hospitals, and government.

**SOC 311. Social Research Methods. 3 Hours.**

PR: SOC 101 and (STAT 201 or STAT 211 or ECON 225). Logic of social research, elements of research design, and problems of measurement, with emphasis on survey research methodology and data analysis.

**SOC 312. Death and Dying. 3 Hours.**

This course explains the issues and problems associated with death in American society. Topics such as changing attitudes, grief, funeral practices, life after death, the dying patient, and widowhood are presented from a variety of perspectives.

**SOC 320. Social Psychology. 3 Hours.**

PR: SOC 101. Provides a basic but detailed knowledge of the tenets of sociological social psychology, with an emphasis on symbolic interaction. Focuses on how individual identity is formed through a social process.

**SOC 323. Sociology of Rural Life. 3 Hours.**

PR: SOC 101 or consent. Social aspects of rural living. Characteristics of rural population, social structure, and institutional arrangements: family, community, education, religion, recreation, health, welfare, and local government.

**SOC 331. Sociology of Law. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101) or consent. Development and practice of law as part of social systems; theoretical treatments of the relationship between law and social order; emphasis on issues of class, race, and gender.

**SOC 335. Sociology of Religion. 3 Hours.**

Examines relationships among religion, the economy, political structure, and social structure. Focuses on factors that shape religious beliefs, practices, and organizations and how those, in turn, affect other areas of life. Covers the rise of secularism and the rationalization of modern life as well as the factors that affect recruitment, commitment, and exit from religious groups.

**SOC 337. Sociology of American Business. 3 Hours.**

The changing role of business and the debate over its social responsibilities are the major issues of the course. Corporate structures, ownership, governance, power, policy, crime, philanthropy, and work life are examined.

**SOC 360. Sociology of Gender. 3 Hours.**

Sociological study of gender in modern society with an emphasis on gender stratification. Explores the social, structural, historical, and cultural bases of gender relations. Structured around issues of theoretical debate and discusses the myths, misconceptions, and stereotypes surrounding gender. Covers such topics as gender and work, education, politics, economics, marriage, family, and crime.

**SOC 361. Practicing Sociology and Anthropology. 1 Hour.**

Career applications of sociological and anthropological knowledge and skills and practical concerns with preparing for life after graduation. Provides for personalized career exploration and planning.

**SOC 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**SOC 405. Class, Status, and Power. 3 Hours.**

PR: Junior standing or consent. Sociological study of inequality within the U.S. with an emphasis on social class and socio-economic status; also highlights the intersection of gender, race/ethnicity, sexual orientation, place, age, ability, and poverty.

**SOC 417. Sociology of Globalization. 3 Hours.**

Examines the social origins and implications of the growing interconnectedness of our world. Emphasis is given to economic, political, cultural, and environmental dimensions of globalization.

**SOC 463. Economy and Society. 3 Hours.**

Examines the role that the economy as a social institution plays in the historical paradigms in sociology and modern social theory, as well as in organization and inequality models in sociology.

**SOC 470. Cities and Urban Life. 3 Hours.**

PR: CRIM 232 and (CRIM 234 or CJ 101). This course introduces students to the scientific study of urban social activity and urban problems, including crime. The primary goals are to present the methods, theories, and key concepts of sociological perspectives on cities.

**SOC 481. Society and Health. 3 Hours.**

Examines the social causes and consequences of health and illness, including the health care structure, as related to culture, norms and social institutions.

**SOC 488. The Capstone Experience. 3 Hours.**

PR: SOC 301 and SOC 311 and senior standing. Senior capstone seminar in which students articulate how sociologists, criminologists and/or anthropologists come to an understanding of the social world and the human condition, and the significance of that knowledge. Students conduct in-depth research projects under the guidance of the course instructor, oriented to course-specific substantive emphases and ways of engaging with theory and evidence.

**SOC 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**SOC 491. Professional Field Experience. 1-18 Hours.**

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.

**SOC 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**SOC 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**SOC 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**SOC 497. Research. 1-6 Hours.**

Independent research projects.

**SOC 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

## **SOCIAL WORK (SOWK)**

**SOWK 147. Human Diversity. 3 Hours.**

(Must be completed before applying to the major.) Covers a range of diverse populations especially those historically subjected to oppression and social and economic injustice. Addresses the causes and effects of institutionalized forms of oppression.

**SOWK 151. Introduction to Social Work. 3 Hours.**

A historical and philosophical overview of Social Work as a profession and field of study. Using case studies and real-world examples, this course examines the history of social institutions and their effectiveness in alleviating social problems including topics related to historically oppressed and marginalized populations, changes in the American family, and historical and current trends related to various social services.

**SOWK 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**SOWK 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**SOWK 297. Research. 1-6 Hours.**

Independent research projects.

**SOWK 300. Social Welfare Policy and Services 1. 3 Hours.**

PR: SOWK 151. Review of current and historical perspectives on the social welfare institution. Includes philosophical and ideological factors that influence U.S. social welfare policy and services.

**SOWK 310. Social Welfare Policy and Services 2. 3 Hours.**

PR: SOWK 300. Explores the social welfare policy-making process. Analyzes current social welfare programs and possible reforms, policy responses to social issues, and strategies for shaping and influencing policy and their impact on vulnerable populations.

**SOWK 320. Social Work Methods 1. 3 Hours.**

PR: SOWK 147 and SOWK 151. Presents a broad range of generalist practice knowledge, values and skills. Focuses on theories and interventions with individuals, and introduces evaluation of practice effectiveness. (30-hour service learning requirement.).

**SOWK 322. Social Work Methods 2. 3 Hours.**

PR: SOWK 320. Builds on Methods 1 by focusing on more specific theories, methods, and intervention models with groups, communities, and organizations. Introduces program evaluation. (30-hour service learning requirement.).

**SOWK 324. Methods 3: Organizations and Communities. 3 Hours.**

PR: SOWK 320 and SOWK 322. Focuses on applying theories and concepts of generalist social work practice at the macro (organization/community) system level with an emphasis on rural environments.

**SOWK 330. Human Behavior in the Social Environment. 3 Hours.**

PR: SOWK 147 and SOWK 151 with a minimum grade of C- in each. Overview of human behavior in the social environment. Uses a multi-theoretical approach to explore human development as well as human behavior within families, groups, organizations, and communities. Highlights diversity, intersectionality, and influence of the rural environment.

**SOWK 345. Interprofessional Social Justice Practice. 3 Hours.**

PR: SOWK 322 with a minimum grade of C-. This course focuses on the theory and practice of interprofessional practice with special attention given to issues of diversity, anti-racism, equity, and inclusion. Students will learn how to communicate effectively with other professionals in various social work settings using anti-racist and anti-oppressive practices.

**SOWK 360. Social Work Research and Statistics. 3 Hours.**

PR: SOWK 300. Introduces and applies research and statistical methods social workers use to evaluate practice and programs, to critique research, to build knowledge for practice, and to address ethical standards of scientific inquiry.

**SOWK 370. Wellness and Resilience for the Helping Professions and Beyond. 3 Hours.**

Teaching of skills to acquire resilience in the face of commonly experienced stressors and difficulties. Presents a personalized set of strategies and skills for self-care and resilience to optimize academic and collegiate experiences, including field placements, and future career in the helping professions.

**SOWK 380. Child Welfare. 3 Hours.**

Introduction to issues in the field of child welfare. Includes policies, practice, protective services, family centered services, prevention, out of home placement, and in-home placement.

**SOWK 400. Legal Issues in Social Work. 3 Hours.**

PR: SOWK 300 and SOWK 320 and SOWK 330. Explores legal and ethical issues and obligations affecting social workers and social work practice.

**SOWK 401. Social Work Practice and Human Sexuality. 3 Hours.**

PR: SOWK 320 and SOWK 330. Focus on issues of sexuality that impact direct/micro and mezzo practice, and indirect/macro social work practice.

**SOWK 402. Practice and Family Violence. 3 Hours.**

PR: SOWK 300 and SOWK 320 and SOWK 330 with a minimum grade of C- in each. Exploration of generalist Social Work practice with individuals who utilize services from the Child Protective Services and Intimate Partner Violence areas of practice. Primary focus is on learning and utilizing direct-practice skills for assessment and effective, best-practice interventions with families experiencing violence within their homes.

**SOWK 403. Social Issues of Public Health. 6 Hours.**

Examines issues related to assessment and intervention in community health/mental health in Vietnam and Cambodia.

**SOWK 404. Social Work Practice and End of Life Care. 3 Hours.**

PR: SOWK 300 and SOWK 320 and SOWK 330. Applies a multidisciplinary and multidimensional approach to the study of end of life. Addresses death, dying, and bereavement across the lifespan.

**SOWK 481. Senior Capstone. 3 Hours.**

PR: Completion of advanced SOWK courses with a grade of C- or higher in each course. Provides educational direction and support for students' field placement experience. Assists students in the integration, mastery, and application of practice theory in conjunction with placement learning activities, and provides opportunities to apply research to practice by evaluating the effectiveness of practice and programs.

**SOWK 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice such as a tutor or assistant.

**SOWK 491. Professional Field Experience. 1-12 Hours.**

PR: Consent. (May be repeated up to a maximum of 12 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.

**SOWK 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**SOWK 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**SOWK 494A. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**SOWK 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**SOWK 497. Research. 1-15 Hours.**

Independent research projects.

**SOWK 499. Global Service Learning. 1-3 Hours.**

PR: Consent. Theory and practice of global service-learning. The main objective will be to pair the experiential aspects of meaningful and sustained service in the host community with work from the student's anchor course by offering a methodological framework for cultural immersion and community service as well as adding to the content of the anchor course.

**SPANISH (SPAN)****SPAN 101. Elementary Spanish 1. 3 Hours.**

PR: Score of S1 on placement test or no prior study of the language or departmental consent. Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading and writing within an authentic cultural context. (Course presumes no prior knowledge of the language.).

**SPAN 102. Elementary Spanish 2. 3 Hours.**

PR: SPAN 101 or score of S2 on placement exam. Continuation of SPAN 101. Introduction to the sound and writing systems of the language with emphasis on listening, speaking, reading, and writing within an authentic cultural context.

**SPAN 203. Intermediate Spanish 1. 3 Hours.**

PR: SPAN 102 or score of S3 on placement exam. Continuation of SPAN 102.

**SPAN 204. Intermediate Spanish 2. 3 Hours.**

PR: SPAN 203 or score of S4 on placement exam. Foundation for advanced study of Spanish. Emphasis on oral and written communication.

**SPAN 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**SPAN 298. Honors. 1-3 Hours.**

PR: Student in Honors Program and consent by the honors director. Independent reading, study or research.

**SPAN 310. Spanish for Heritage Speakers. 3 Hours.**

Grammar, reading, writing, and culture for heritage speakers of Spanish with little or no formal education in Spanish language.

**SPAN 311. Readings in Spanish. 3 Hours.**

PR: SPAN 200 or SPAN 204 or a satisfactory score on the Spanish placement test. Major emphasis on improving reading skills in Spanish through comprehension exercises, discussion, and written analyses. Grammar review when appropriate.

**SPAN 312. Writing in the Hispanic World. 3 Hours.**

PR: SPAN 200 or SPAN 204 or a satisfactory score on the Spanish placement test. Major emphasis on improving writing skills in Spanish such as description, narration and argumentation through exposure to different types of cultural texts.

**SPAN 313. Spanish Through Media. 3 Hours.**

PR: SPAN 310 or SPAN 311 or SPAN 312. Explores Spanish language and Hispanic cultures through audio-visual materials.

**SPAN 314. Spanish Conversation. 3 Hours.**

PR: SPAN 311 or SPAN 312 or SPAN 313. Conversational skills are emphasized through class discussions and oral reports. Students cannot receive credit for both this course and SPAN 310.

**SPAN 315. Spanish for Professional Purposes. 3 Hours.**

PR: SPAN 204 or equivalent. Specialized vocabulary, grammar, and syntax for students in the legal system, public health, banking and finance fields, information technology, real estate, and human resources. Provides students with the opportunity to apply their skills to actual functional, practical, and relevant content, with particular emphasis on their areas of study.

**SPAN 330. Latin American Culture. 3 Hours.**

PR: Two courses from SPAN 310, SPAN 311, SPAN 312, SPAN 313, SPAN 314. Survey of Latin American Civilization and culture from Pre-Columbian period to the present.

**SPAN 331. Early Spanish American Literature. 3 Hours.**

PR: Two 300-level SPAN courses. Readings in Spanish American literature from the colonial period to Modernism.

**SPAN 332. Modern Spanish American Literature. 3 Hours.**

PR: Two 300-level SPAN courses. Readings in Spanish American literature from Modernism to the present.

**SPAN 333. Spanish American Literature. 3 Hours.**

PR: Two 300-level SPAN courses. Readings in Spanish American literature from the colonial period to the present.

**SPAN 334. Seminar in Spanish American Literature. 3 Hours.**

PR: Two courses from SPAN 310, SPAN 311, SPAN 312, SPAN 313, SPAN 314. In-depth study of key words of the Spanish American literary canon.

**SPAN 335. Seminar in Spanish-American Culture. 3 Hours.**

PR: 2 courses from SPAN 310, SPAN 311, SPAN 312, SPAN 313, SPAN 314. Examination of media, film, dance, music, visual arts, food, or other non-literary cultural production of Spanish America.

**SPAN 340. Culture of Spain. 3 Hours.**

PR: Two courses from SPAN 310, SPAN 311, SPAN 312, SPAN 313, SPAN 314. Survey of Spanish civilization and culture from its origins to the present day.

**SPAN 341. Early Literature of Spain. 3 Hours.**

PR: SPAN 304. Readings in Spanish literature from the medieval period to the eighteenth century.

**SPAN 342. Modern Literature of Spain. 3 Hours.**

PR: Two courses from SPAN 310, SPAN 311, SPAN 312, SPAN 313, SPAN 314. Readings in Spanish literature from the eighteenth century to the present.

**SPAN 343. Spanish Literature. 3 Hours.**

PR: Two 300-level SPAN courses. Readings in Spanish literature from the medieval period to the present.

**SPAN 345. Seminar in Spanish Culture. 3 Hours.**

PR: Two courses from SPAN 310, SPAN 311, SPAN 312, SPAN 314. Examination of media, film, dance, music, visual arts, food, or other non-literary cultural productions of Spain.

**SPAN 350. Phonetics and Pronunciation. 3 Hours.**

PR: Two of the following: SPAN 310, SPAN 311, SPAN 312, SPAN 313, SPAN 314, or consent. Introduces key concepts and terminology associated with the sound system of Spanish and prepares students to improve their pronunciation.

**SPAN 351. Spanish in the United States. 3 Hours.**

PR: ((SPAN 311 and (SPAN 312 or SPAN 313 or SPAN 314)) or ((SPAN 312 and (SPAN 313 or SPAN 314)) or (SPAN 313 and SPAN 314)). Presentation of wide variety of topics regarding the Spanish language in the United States from linguistic descriptions (at the phonetic, phonological, morphological and syntactic levels) to the social aspects of the language (bilingualism, linguistic attitudes and racism, identity issues, educational matters, etc.). Readings and in-class discussions will foster critical thinking and research from a sociolinguistic perspective.

**SPAN 360. Intensive Advanced Spanish in Latin America. 3-6 Hours.**

PR: SPAN 204. Development of advanced reading writing, listening, and speaking skills taught on location, as part of a faculty-led program in Latin America.



**SPAN 361. Commercial Spanish. 3 Hours.**

PR: Two courses from SPAN 310, SPAN 311, SPAN 312, SPAN 313, SPAN 314. Development of advanced speaking, reading, and writing skills appropriate for business contexts within the Spanish-speaking world.

**SPAN 370. Advanced Spanish Language in Spain. 3 Hours.**

PR: SPAN 204 or SPAN 200 or score of 494 or higher on placement test. Overview of reading writing, listening and speaking skills taught on location, as part of a faculty-led summer program in Spain.

**SPAN 371. Introduction to Spanish Culture in Spain. 3 Hours.**

PR: SPAN 204 or SPAN 200 or a score of 494 or higher on placement test. Overview of Spanish culture taught on location as part of the faculty-led summer program in Spain.

**SPAN 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**SPAN 401. Grammar Review. 3 Hours.**

Intensive grammar review for graduate students. (Credit does not count toward 36 hours required for master's degree.).

**SPAN 480. Issues in the Hispanic World. 3 Hours.**

PR: Completion of 21 upper division hours in Spanish. An examination of contemporary issues facing the Hispanic world, with particular attention given to cultural developments and influences.

**SPAN 481. Hispanic Presence in the World. 3 Hours.**

Completion of 21 upper-division hours in Spanish. This course is designed to provide Spanish majors with a capstone experience and offers them a more comprehensive view of the role of Spanish in the world.

**SPAN 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**SPAN 491. Professional Field Experience. 1-18 Hours.**

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.

**SPAN 492. Directed Study. 1-3 Hours.**

Directed study, reading, and/or research.

**SPAN 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**SPAN 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**SPAN 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**SPAN 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**SPAN 497. Research. 1-6 Hours.**

Independent research projects.

**SPAN 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

**STATISTICS (STAT)****STAT 101. Elementary Statistics Corequisite. 1 Hour.**

PR: Corequisite of STAT 211. This is a co-requisite support course associated with STAT 211. This course reinforces basic learning and study skills along with foundational mathematical skills necessary to succeed in elementary statistics. Based on the criteria defined by the Math Department, some students are required to register for this course based on placement.

**STAT 111. Understanding Statistics. 3 Hours.**

Introduction to basic concepts and ideas of statistics. Methodologies and case studies to prepare students to understand the use of statistics in the mass media and professional publications in their major field of study. Not open to students who have earned credit for STAT 211 or STAT 215.

**STAT 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**STAT 211. Elementary Statistical Inference. 3 Hours.**

PR: MATH 124 or higher, or advanced placement. Basic concepts of descriptive and inferential statistics: descriptive measures, random variables, sampling distributions, estimation, tests of hypotheses, chi-square tests, regression and correlation.

**STAT 215. Introduction to Probability and Statistics. 3 Hours.**

PR: MATH 156 with a minimum grade of C-. Probability, random variables, discrete and continuous probability distributions, joint probability distributions, and expected value. The central limit theorem. Point and interval estimation and tests of hypotheses. Chi-square tests, linear regression, and correlation.

**STAT 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**STAT 298. Honors. 1-3 Hours.**

PR: Students in the Honors Program and consent by the honors director. Independent reading, study or research.

**STAT 312. Intermediate Statistical Methods. 3 Hours.**

PR: (STAT 211 or STAT 215) with a minimum grade of C- or equivalent. Extension of basic concepts of statistical inference: estimation and hypothesis testing for two or more populations, multiple regression and correlation, and analysis of variance.

**STAT 313. Introductory Design and Analysis. 3 Hours.**

PR: STAT 312 with a minimum grade of C-. Introduction to the linear model, the complete and fractional factorial experiment, and the completely random, randomized complete block, Latin square, and split-plot experimental designs.

**STAT 316. Forensic Statistics. 3 Hours.**

PR: STAT 215. Probabilistic and statistical evaluation of evidence in forensic science: concepts of uncertainty/variation, discriminating power, coincidence/significance probabilities, historical overview, transfer evidence, DNA profiling, fingerprint identification, biometric identification, and selected forensic statistics topics/ case studies.

**STAT 331. Sampling Methods. 3 Hours.**

PR: STAT 211 or STAT 215 or equivalent. Methods of sampling from finite populations, choice of sampling unit and sample survey design. Estimation of confidence limits and optimum sample size. Single and multi-stage sampling procedures.

**STAT 421. Statistical Analysis System (SAS). 3 Hours.**

PR: (STAT 211 or STAT 215 or equivalent) and (CS 110 or equivalent). Introduction to the use of the Statistical Analysis System (SAS), a statistical computer program. Students will perform statistical data analysis, data file modifications, and statistical report writing.

**STAT 423. Bioinformatics Computing. 3 Hours.**

PR: STAT 312. Introduction to R computing within a bioinformatics context. Topics include: R packages, data structures, objects, and data input/output; R data Visualization; R/Perl text processing; accessing bioinformatics databases; and R interfaces to Perl, Java, and SQL databases.

**STAT 445. Introductory Regression Analysis. 3 Hours.**

PR: STAT 312 with a minimum grade of C-. Analyses of simulated or real data with a focus on the least squares matrix approach to the linear model. Use of diagnostic measures to assess and improve model adequacy leading to practical model-based inferences or predictions.

**STAT 461. Introduction to Probability Theory. 3 Hours.**

PR: MATH 251 with a minimum grade of C-. Theoretical coverage of probability, random variables, and discrete and continuous probability distributions. Expected value, moment generating functions, and special probability distributions. Random sampling, distributions of certain functions of random variables, and the central limit theorem.

**STAT 462. Theoretical Introduction to Statistical Inference. 3 Hours.**

PR: STAT 461 with a minimum grade of C-. Theoretical introduction to statistical inference. Properties of estimators and techniques of estimation. Hypotheses testing including the Neyman-Pearson Lemma and likelihood ratio tests. Regression and correlation.

**STAT 480. Capstone Design. 1 Hour.**

Design of a research project in consultation with advisor(s). Practice of effective written and oral communication; engagement of students in purposeful writing in mathematics.

**STAT 481. Capstone Experience. 2 Hours.**

PR: STAT 480 with a minimum grade of C-. Implementation of research project in consultation with advisor(s). Practice of effective written and oral communication; engagement of students in purposeful writing in mathematics.

**STAT 482. Statistics Practicum. 1 Hour.**

PR: STAT 313. A capstone experience core course. Students are expected to: research and design (optionally) a study, do independent statistical analyses of a data set, and present the results in both verbal and written forms.

**STAT 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**STAT 491. Professional Field Experience: Capstone. 1-18 Hours.**

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.

**STAT 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**STAT 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**STAT 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**STAT 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**STAT 497. Research. 1-6 Hours.**

PR: Consent. Independent research projects.

**STAT 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

## SUSTAINABILITY STUDIES (SUST)

**SUST 101. Sustainable Earth. 3 Hours.**

Introduction to Earth system processes, human impacts on the environment, and sustainability. Both human and environmental sustainability are emphasized in topics related to Earth materials, climate change, the origin of landforms, natural hazards (earthquakes, volcanoes, landslides, and floods), sustainable energy, and water resources.

**SUST 101L. Sustainable Earth Laboratory. 1 Hour.**

PR or CONC: SUST 101. Laboratory study of climate change, sustainability of natural resources, and geologic hazards through examination of data sets, case studies and critical analyses of coupled human-environment interactions.

**SUST 102. Global Sustainability. 3 Hours.**

Focuses on how individuals, communities and institutions located in regions across the world are responding to the challenges of social, economic and environmental change. Students study distinctive patterns of change in rural and urban areas as well as the response from institutions across scales from local to international levels. Students explore how individuals and organizations develop solutions to sustainability.

**SUST 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**SUST 201. Earth System Science. 3 Hours.**

PR: SUST 101 and SUST 101L and PR or CONC: SUST 201L. Scientific study of the Earth systems, including hydrosphere, lithosphere, atmosphere, cryosphere and biosphere, and their interactions. Emphasize earth materials, the use of data to predict natural hazards, how exploration and production of natural resources is conducted and the implications for environmental change and sustainability of human civilization.

**SUST 201L. Earth System Science Laboratory. 1 Hour.**

PR: SUST 101 and SUST 101L and PR or CONC: SUST 201. Application of methods used by geoscientists to study the earth, including mineral, rock and fossils identification, and data presented in maps, graphs, diagrams and models to interpret the spatial distribution and temporal development of hazards, resources and climate-induced environmental changes.

**SUST 202. Just Sustainable Development. 3 Hours.**

Advances student knowledge in the field of sustainability studies by exploring the role and responsibilities of individuals, institutions, and communities to create a future that is environmentally sustainable and socially just. Building upon a base knowledge of geographical and earth science concepts, this course prepares students to consider the ethical implications and decision-making processes that contribute to sustainable development.

**SUST 202L. Sustainable Development Laboratory. 1 Hour.**

PR or CONC: SUST 202. Application of story mapping to sustainability studies research, analysis and data visualization methods to measure progress toward and communicate about the UN Sustainable Development Goals. Students will learn geographic information and story mapping skills associated with online research, media literacy and data literacy while building a digital story map focused on measuring progress toward the UN Sustainable Development Goals.

**SUST 207. Climate System Science. 3 Hours.**

PR or CONC: SUST 207L. Investigation of the atmosphere and hydrosphere using a system science approach in the context of sustainability. Course is focused on the description, explanation, and understanding of the physical and chemical processes that govern Earth's climate and weather, atmospheric processes, and the hydrologic cycle.

**SUST 207L. Climate System Science Laboratory. 1 Hour.**

PR or CONC: SUST 207. Laboratory study of Earth's climate and hydrologic systems focused on meteorological data analysis.

**SUST 240. Earth Data Analytics. 3 Hours.**

PR: (MATH 124 or MATH 126 or MATH 129) with a minimum grade of C-. Introduction to quantitative analysis of data, including methods for extracting actionable information to guide decision-making in Earth science and Sustainability applications. Students are introduced to coding, open-source data science software packages, basic statistical methods, and best practices in undertaking reproducible science.

**SUST 250. Digital Earth and GIS. 3 Hours.**

PR or CONC: SUST 250L. Explores the concepts, principles, and practices of acquiring, storing, analyzing, displaying, and using geospatial data and investigates the science behind geographic information systems and the techniques and methods GIS scientists and professionals use to generate data, answer questions, and inform decision making. Explores the role of geospatial technologies in society and associated ethical practices.

**SUST 250L. Digital Earth and GIS Laboratory. 1 Hour.**

PR or CONC: SUST 250. Laboratory exploration of the concepts, principles, and practices of acquiring, storing, analyzing, displaying, and using geospatial data. Students gain experience working with geospatial data and software.

**SUST 260. Natural Disasters. 3 Hours.**

Introduction to natural disasters and the natural processes and human actions that cause them. This course will introduce common natural disasters (including floods, landslides, earthquakes, volcanoes, and tsunamis) and investigate their frequency, magnitude, global distribution, and impacts on society. The course will also discuss the promise and pitfalls of common natural disaster mitigation techniques.

**SUST 302. Research for Sustainable Development. 3 Hours.**

Focuses on qualitative research methods to investigate the cultural and spatial dimensions of sustainable development problems, whether at the local, regional, or international scale. Ethnographic and geospatial research skills will be emphasized. Students conduct a small study to practice new research approaches. Introduces the ethics and strategies of collaborative and participatory action research.

**SUST 305. Sustainable Governance. 3 Hours.**

PR: GEOG 205 or SUST 202. Understand and evaluate the rules, processes, and institutions involved in governance frameworks that promote social and environmental sustainability from the local to global levels. Helps prepare students for careers in politics, the nonprofit sector, consulting, and education. Students will apply skills such as interviewing, writing, and presenting results in different formats to diverse audiences.

**SUST 308. Climate Modeling. 3 Hours.**

PR: SUST 207 and SUST 240. Explores concepts and methods for generating climate models, forecasts, and predictions with a primary focus on physical process modeling. The first part of the course focuses on a deep exploration of the global climate system and associated physical processes and mathematical representations. The second part of the class focuses on computational methods used in climate modeling.

**SUST 340. Urban Sustainability. 3 Hours.**

Provides an urban perspective on environmental, socio-economic, and infrastructural sustainability problems and their consequences. Students gain a better understanding of how cities can be a culprit, but also a major part of the solution to today's sustainability challenges. Students take an active role in assessing the sustainability of cities, identifying shortcomings or future needs, and communicating potential solutions.

**SUST 372. Sustainable Energy. 3 Hours.**

Examines role and history of earth sciences in developing energy resources and assessing the sustainability impacts associated with their development, emphasizing the impact of extraction and production on the environment, from non-renewable fossil fuel sources and related greenhouse gas emissions and climate change to low or no-carbon renewable energy systems.

**SUST 388. Careers in Sustainability. 1 Hour.**

Development of career goals and preparation for entry in the job market.

**SUST 402. Climate and Environmental Justice. 3 Hours.**

Fosters a critical understanding of justice by examining the historical roots of climate and environmental inequalities worldwide. Why are some communities exposed to high levels of pollution and lack clean water while others enjoy lower environmental risks? Does inequality contribute to ecosystem degradation and climate change? What is the relationship between social and environmental justice and sustainability?.

**SUST 403. Sustainability, Planning and Development. 3 Hours.**

PR: SUST 202. Apply key issues in sustainability studies to the fields of regional planning and social action. Students learn approaches to building more sustainable communities at the local and regional level while deepening their understanding of key actors and institutions as well as approaches to shape their policies, practices, and projects to advance sustainable development goals.

**SUST 410. Critical Minerals. 3 Hours.**

PR or CONC: SUST 201. Formation of critical minerals, such as lithium, nickel, cobalt, graphite, and rare earth elements (REEs); their role in renewable energy generation, energy storage, energy transmission, and other technologies; and practices in sustainable exploration, extraction of conventional and unconventional critical mineral resources.

**SUST 420. Geothermal Energy. 3 Hours.**

PR: SUST 101. Explores the origin and distribution of Earth's internal heat and the methods used to harness it to provide clean and renewable energy for applications ranging from domestic heat pumps to large electrical power plants.

**SUST 430. Subsurface Resources for Energy Transition. 3 Hours.**

PR: SUST 201 and SUST 201L. This course covers the fundamentals of carbon dioxide (CO<sub>2</sub>) and hydrogen (H<sub>2</sub>) storage, the physical, geochemical, and biological constraints that affect the performance and safety of their storage in subsurface geological formations, and the role of storage in the decarbonization of the energy sector for the sustainable energy transition.

**SUST 480. Subsurface Methods. 3 Hours.**

PR: (SUST 201 and SUST 201L) and (PHYS 102 or PHYS 112). Students develop the skills to produce subsurface interpretations from integrated geological, geophysical, and engineering datasets using specialized software. They construct maps and 3D visualizations of subsurface structure suitable for assessing geological CO<sub>2</sub> or H<sub>2</sub> storage, geothermal exploration, or fossil fuel development.

## WOMEN AND GENDER STUDIES (WGST)

### **WGST 150. Women in Movies. 3 Hours.**

Through viewing popular Hollywood films, we will analyze femininity across the life span. Critical thinking and cultural analysis will be practiced as we study heroines, working girls, motherhood, brides, cheerleaders, and old women on screen.

### **WGST 170. Introduction to Women's and Gender Studies. 3 Hours.**

The major contexts in which gender identities have been and are defined and of the relationships between these definitions and the roles and history of women and men in society and culture.

### **WGST 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

### **WGST 200. Feminist Histories and Practices. 3 Hours.**

Definitions, implications and origins of feminism. Explores various histories and forms of feminist organizing, how intersectionality shapes/changes feminism, how global/historical/political locations inform feminism, and how feminist efforts to create change have included critically engaging with the politics of knowledge production.

### **WGST 215. African Women Writers. 3 Hours.**

Selected works by African women writers. (Also listed as FLIT 215.).

### **WGST 220. Medieval Women Mystics. 3 Hours.**

History, writings, and impact of mystics, including but not limited to, Hildegard of Bingen, Saint Clare of Assisi, Julian of Norwich, Saint Catherine of Siena, Saint Catherine of Genoa, and Saint Teresa of Avila.

### **WGST 225. Women in Appalachia. 3 Hours.**

Use variety of sources to explore how race, class, ethnicity, sex and gender impact lives of diverse Appalachian women, including portrayal of women, stereotypes, impact of stereotypes, and how women construct their own identities.

### **WGST 242. Women's Health and Fitness. 3 Hours.**

In this applied class, students will be actively learning about college-age women's health and participating in fitness activities, as well as creating a personal plan to improve one's health.

### **WGST 250. Women in Science. 3 Hours.**

History of women in science and methods of gender analysis applied to issues facing women in science in the United States.

### **WGST 260. Perspectives on Lesbian, Gay, Bisexual, Transgender, and Queer Studies. 3 Hours.**

Overview of lesbian, gay, bisexual, transgender, and queer studies. Examines the construction of gender, biological sex, sexual orientation, and gender identity, expression and performance related to lesbian, gay, bisexual, transgender, queer, questioning, intersex, asexual, pansexual, and two-spirit identities. Also examines intersections with race, ethnicity, class, nation, culture, ability, and religion.

### **WGST 293. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

### **WGST 300. Methods for Inclusive Research. 3 Hours.**

Basic and applied research concepts and methods that are essential for professionals whose work involves translational research (i.e., applied) and/or action research (i.e., involving communities who use the research). Assists students in becoming reflective evidence-based decision-makers.

### **WGST 330. Feminist Theory. 3 Hours.**

PR or CONC: WGST 200 or WGST 260 with a minimum grade of C-. Explores current feminist theory through works by diverse scholars, focusing on questions of essentialism, difference, sexuality, bodies, language, power, economic and ecological justice, intersections of race, class and gender, and global social justice struggles.

### **WGST 340. Gender and Violence. 3 Hours.**

Gender violence has implications for all members of society. This course will examine violence in the lives of women across the lifespan. Etiology, theories, effects, and prevention modalities will be evaluated.

### **WGST 345. Women in International Development. 3 Hours.**

Examines cultural diversities in the definition of women's roles and status; investigates women's access to education, health, income, credit and technology; and studies women's contributions in third world development.

### **WGST 360. Queer Theories. 3 Hours.**

PR or CONC: WGST 200 or WGST 260 with a minimum grade of C-. Provides a framework for understanding the history and contemporary applications of queer theories and interdisciplinary LGBTQ studies. Explores the relationship of queer theories to feminist theories through examining works by diverse scholars, focusing on questions of identities, bodies, policies, institutions, and popular and visual cultures.

### **WGST 393. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.



**WGST 448. Sexuality in American Culture. 3 Hours.**

Explores changes in sexuality in the United States from the seventeenth century to the present, examining social and cultural struggles and debates over the meaning of sexuality and sexual orientation in American society.

**WGST 449. Women's Movements Since 1960. 3 Hours.**

Comparison of U.S. "Second wave" and "Third Wave" feminisms; validity of the concepts of "waves" of feminism; and impact of race, class, sexual orientation, on perspectives on women's status.

**WGST 450. Sex and Science at the Movies. 3 Hours.**

Explores how bodies, sexuality, and other gendered traits are used in films to demonstrate techno-science's societal impacts. Examines the relationship between media representations and techno-scientific practice.

**WGST 460. Men and Masculinities. 3 Hours.**

PR: WGST 170 or WGST 260. An advanced seminar in women's and gender studies that critically examines the concept of masculinity and its impact on men's and women's lives. Analyzes masculinities from cultural, historical, biological, philosophical, sociological, psychological, economic, and political perspectives.

**WGST 484. Seminar:Capstone. 3 Hours.**

PR: Consent. Required of all women's studies students. Students will broaden their theoretical definitions of feminism and women's studies to include non-western models and solutions, pairing this study with a local service project informed by global activists.

**WGST 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**WGST 491. Independent Study. 1-18 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**WGST 493. Special Topics. 1-6 Hours.**

PR: Consent. Investigation of topics not covered in regularly scheduled courses.

**WGST 494. Seminar. 1-3 Hours.**

PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

**WGST 495. Independent Study. 1-6 Hours.**

Faculty supervised study of topics not available through regular course offerings.

**WGST 496. Senior Thesis. 1-3 Hours.**

PR: Consent.

**WGST 498. Honors. 1-3 Hours.**

PR: Students in Honors Program and consent by the honors director. Independent reading, study or research.

**WRITING STUDIES (WRIT)****WRIT 191. First-Year Seminar. 1-3 Hours.**

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**WRIT 201. Public Writing. 3 Hours.**

PR: (ENGL 101 and ENGL 102) or ENGL 103 with a minimum grade of C-. Focus on writing that informs or persuades a public audience. It asks writers to identify a problem in the community, thoroughly research the problem, determine the best plan for addressing the problem, and present the plan to agents of change in the community. Writers will develop well-supported arguments in a variety of ways.

**WRIT 202. Introduction to Writing Studies. 3 Hours.**

PR: ENGL 101 or ENGL 103 with a minimum grade of C-. Gateway course for both the BA in Professional Writing and Editing and the BS in Scientific and Technical Writing. Introduces writing as a field of study and allows students to explore the major.

**WRIT 301. Writing Theory and Practice. 3 Hours.**

PR: (ENGL 101 and ENGL 102) or ENGL 103. Traditional and contemporary approaches to rhetoric and writing theory for professional writing and editing students who wish to develop their abilities to analyze and produce written texts.

**WRIT 302. Editing. 3 Hours.**

A comprehensive approach to editing, including the correctness and effectiveness of a document, information design, and editorial responsibility. Students gain a realistic perspective on workplace practice through real-world scenarios, case studies, and technological applications.

**WRIT 303. Multimedia Writing. 3 Hours.**

Study of communication and design issues in multimedia composition. Focuses on communication, creative expression, persuasion, interactivity, and rhetorical principles. Practice in composing multimedia documents such as online publications, interactive literary works, and tutorials.

**WRIT 304. Business and Professional Writing. 3 Hours.**

PR: (ENGL 101 and ENGL 102) or ENGL 103. Students will analyze different writing contexts, meet the needs of different audiences, and organize and present material in letters, memos, and reports. Includes some research, Internet components, and a review of style, grammar and usage.



**WRIT 305. Technical Writing. 3 Hours.**

PR: (ENGL 101 and ENGL 102) or ENGL 103. Writing in scientific and technical fields. Introduces students to typical genres, workplace practices, document design, and conventions of writing for experts and non-experts.

**WRIT 306. Topics in Digital Humanities. 3 Hours.**

PR: WVU sections require (ENGL 101 and ENGL 102) or ENGL 103 with a minimum grade of C- in all, PSC and WVUIT sections require (ENGL 101 and ENGL 102). Introduces the digital humanities as a community of practice, a growing interdisciplinary field, and a set of approaches to research and teaching. Topics may include critical code studies, technology in the classroom, digital editions, text and network analysis, machine learning, and data visualization. Designed for students who are "tech-curious" but not yet experienced with coding or working with data.

**WRIT 402. Publishing. 3 Hours.**

PR: ENGL 101 and 102 (or ENGL 103) with a minimum grade of C-. The history, theory, and practice of publishing as well as the design and layout of documents in print and digital forms according to the needs of a specific audience.

**WRIT 403. Grant Proposal Writing for Community & Industry. 3 Hours.**

PR: (ENGL 102 or ENGL 103) with a minimum grade of C-. Introduction to activities, responsibilities, challenges, and opportunities that characterize proposals for communities, nonprofits, or research/industry. Students will learn components of the process, including how to identify appropriate funding streams, develop fundable themes, write a specific work plan and budget, and understand the grant review process. Coursework will involve readings, individual proposal analyses, and collaborative proposal writing.

**WRIT 407. The Writing of Health and Medicine. 3 Hours.**

PR: (ENGL 101 and ENGL 102) or ENGL 103 with a minimum grade of C- in each. Explores genres important to health and medicine. Students read, analyze, and write texts in these genres-considering their audiences, purposes, and conventions as well as the role specific texts play in shaping the practices and experiences of health and medicine.

**WRIT 408. Rhetoric and Science. 3 Hours.**

PR: (ENGL 101 and ENGL 102) or ENGL 103. Explores the relationship between rhetoric and science. Students will analyze the audiences, purposes, and conventions of scientific arguments as well as the role of specific texts in shaping scientific disciplines and debates. No background in science is required.

**WRIT 450. Intro to Forensic Linguistics. 3 Hours.**

Introduces students to the analysis of language for legal purposes and provides them first-hand experience in forensic linguistics. The course focuses on the application of linguistic theory, research, and procedures to issues of the law. In their final project, students review forensic linguistic case studies.

**WRIT 460. Appalachian Englishes. 3 Hours.**

PR: (ENGL 102 or ENGL 103) with a minimum grade of C-. An introduction for methods and topics in the study of the linguistic, historical, and social patterns of English language varieties in Appalachia through the examination of modern research and the analysis of public perceptions.

**WRIT 480. Capstone Internship. 3 Hours.**

PR: WRIT 202 and WRIT 301 and WRIT 302 and (WRIT 304 or WRIT 305) with a minimum grade of C- in all. Focuses practical on-the-job experience as writers within a professional organization as they apply the knowledge and skills they have developed in the major. Students also participate in a weekly seminar to discuss theories of workplace writing, ethical issues, and professionalism.

**WRIT 490. Teaching Practicum. 1-3 Hours.**

PR: Consent. Teaching practice as a tutor or assistant.

**WRIT 491. Professional Field Experience. 1-18 Hours.**

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.