School of Agriculture and Food

Programs of Study

The Division of Animal and Nutritional Sciences is home to programs in Animal & Nutritional Science, Human Nutrition & Food, and Biochemistry. Biochemistry is part of the Intercollegiate Undergraduate Program in Biochemistry, a collaboration between the Davis and Eberly Colleges. As a student in this division, you may pursue a degree that enables you to do graduate study, go into commercial agriculture, work for federal or state agencies, or work in the food processing industry or other areas of food and agriculture. The pre-professional program meets requirements for entry into professional school programs of veterinary and human medicine, allied health professions, and fulfills the requirements for application to an accredited dietetic internship.

Courses that you will take in the division depend on a student's particular program. The division offers classes in animal and human nutrition, animal production, biochemistry, breeding and genetics, food science, pathology, and physiology. To assist in equipping yourself for one of the varied careers in animal agriculture, you will take supporting courses in other divisions of the Davis College and in other colleges. The programs are flexible and permit you to obtain a broad background and take sufficient courses in one area during the last two years to prepare you for your first postgraduate career choice.

Pre-Professional Programs (Veterinary Medicine, Human Medicine, and Allied Health Professions)

The bachelor of science programs in Animal & Nutritional Sciences, Biochemistry, and Human Nutrition & Food provide students with the academic requirements for entry into professional schools or colleges of veterinary medicine. The West Virginia Higher Education Policy Committee has agreements for positions with the School of Veterinary Medicine at Mississippi State University and the Virginia-Maryland Regional College of Veterinary Medicine for students who have been a West Virginia resident for at least the past five years at the time of application. Because a maximum of thirteen eligible students are accepted each year, students are urged to have alternative goals.

FACULTY

DIVISION DIRECTORS
  • Matthew A. Jenks - Ph.D. (Purdue University)
    Plant and Soil Sciences
  • Robert Taylor Jr. - Ph.D. (Mississippi State University)
    Animal and Nutritional Sciences

PROFESSORS
  • Alan R. Biggs - Ph.D. (Pennsylvania State University)
    Plant Pathology, Tree Fruits
  • Gary K. Bissonnette - Ph.D. (Montana State University)
    Applied and Environmental Microbiology, Aquatic Microbiology
  • Kenneth P. Blemings - Ph.D. (University of Wisconsin)
    Nutritional biochemistry
  • Robert A. Dailey - Ph.D. (University of Wisconsin)
    Reproductive physiology
  • E. Keith Inskeep - Ph.D. (University of Wisconsin)
    Reproductive physiology
  • Jacek Jaczynski - Ph.D. (Oregon State University)
    Food science and technology
  • P. Brett Kenney - Ph.D. (Kansas State University)
    Animal science and meat science.
  • Hillar Klandorf - Ph.D. (British Council for National Academic Awards)
    Physiology
  • William L. MacDonald - Ph.D. (Iowa State University)
    Plant Pathology, Forest and Shade Tree Diseases
  • Louis M. McDonald - Ph.D. (University of Kentucky)
    Soil Science, Soil Chemistry
  • Joseph S. Moritz - Ph.D. (Kansas State University)
    Nutrition and feed manufacture
  • Joseph B. Morton - Ph.D. (Montana State University)
Plant Pathology, Mycorrhizal Interactions, Field Crop Diseases
• Daniel Panaccione - Ph.D. (Purdue State University)
  Plant Pathology, Mycology, Mycotoxins, Molecular Biology
• Alan J. Sexstone - Ph.D. (Michigan State University)
  Applied and Environmental Microbiology, Soil Microbiology
• Jeffrey Skousen - Ph.D. (Texas A&M University)
  Soil Science, Land Reclamation, Soil and Water Conservation, Watershed Restoration
• Matthew E. Wilson - Ph.D. (Iowa State University)
  Reproductive Physiology

ASSOCIATE PROFESSORS
• Kimberly M. Barnes - Ph.D. (University of Nebraska)
  Animal Science - Biochemistry
• Eugene E. Felton - Ph.D. (University of Missouri)
  Ruminant nutrition
• Marlon Knights - Ph.D. (West Virginia University)
  Reproductive physiology and animal production
• James B. Kotcon - Ph.D. (University of Wisconsin)
  Plant Pathology, Agroecology, Nematology, Organic Farming Practices
• K. Marie Krause - Ph.D. (University of Wisconsin)
  Dairy science nutrition
• Kristen E. Matak - Ph.D. (Virginia Tech)
  Food science and human nutrition
• Yong-Lak Park - Ph.D. (Iowa State University)
  Entomology, Geospatial Ecology of Insects, Integrated Pest Management, Spatial Interaction between Insect and Plant Diseases
• Susan N. Partington - Ph.D., R.D. (University of Wisconsin)
  Human nutrition and foods
• Eugenia M. Pena-Yewtuhiw - Ph.D. (University of Kentucky)
  Soil Science
• James A. Thompson - Ph.D. (University of Minnesota)
  Soil Science, Pedology and Land Use
• Janet C. L. Tou - Ph.D. (University of Toronto)
  Human nutrition and foods
• Sven Verlinden - Ph.D. (Purdue University)
  Horticulture, Post Harvest Physiology, Molecular Biology
• Jianbo Yao - Ph.D. (McGill University)
  Molecular biology-genetics

ASSISTANT PROFESSORS
• Kimberly M. Barnes - Ph.D. (University of Nebraska)
  Animal science-biochemistry
• Vagner A. Benedito - Ph.D. (Wageningen University, The Netherlands)
  Genetics and Developmental Biology, Plant Genomics, Functional Genetics and Plant Physiology
• Scott A. Bowdridge - Ph.D. (Virginia Tech)
  Food animal production, parasite immunology
• Thomas C. Griggs - Ph.D. (Texas Tech University)
  Agronomy, Field and Forage Crops
• Melissa Marra - Ph.D., R.D. (Florida International University)
  Human nutrition and foods
• Joseph W. McFadden - Ph.D. (Virginia Tech)
  Nutritional biochemistry
• Melissa Olfert - Dr.P.H., M.S., R.D. (Loma Linda University)
  Human nutrition and foods
• Nicole Waterland - Ph.D. (Ohio State University)
  Horticulture, Flower Senescence
TEACHING ASSISTANT PROFESSOR

- Megan Govindan - M.P.H., M.S., R.D. (West Virginia University)
  Human nutrition and foods
- Crystal E. Smith - M.Agr., PAS (The Pennsylvania State University)
  Equine management

CLINICAL ASSOCIATE PROFESSOR

- Margaret A. Minch - D.V.M. (Ohio State University)
  Veterinary medicine

FACULTY EMERITI

- James W. Amrine, Jr.
- Robert E. Anderson
- John A. Balasko
- John F. Baniecki
- Bradford C. Bearce
- James L. Brooks
- William B. Bryan
- Linda Butler
- William E. Collins
- Leslie Dozsa
- Betty J. Forbes
- Mannon E. Gallegly, Jr.
- Mary K. Head
- Henry W. Hogmire
- William H. Hoover
- L. Morris Ingle
- Robert F. Keefer
- Paul E. Lewis
- Joginder Nath
- M. Zafar Alam Nomani
- Ronald A. Peterson
- Edward C. Prigge
- John C. Sencindiver
- Rabindar N. Singh
- Paul M. Smith
- Charles B. Sperow, Jr.
- William Van Eck
- Wayne R. Wagner
- John Warren
- Robert J. Young
- Richard K. Zimmerman

ADJUNCT FACULTY

- Robert L. Cochrane - Reproductive physiology
- Jesse Fallon - Veterinary medicine
- Michael Glenn - Soil Science
- Ann Hubbs - Veterinary medicine
- Eric K. Johnson - Mechanical and aerospace engineering
- Lee Kass - Plant and Soil Sciences, History of Genetics
- Barbara Jean Meade - Veterinary sciences
- David D. Moran - Hydrodynamics and mathematics
- Stephen S. Miller - Horticulture
- Tong-Man Ong - Genetics
• Dale W. Porter - Toxicology
• Caird E. Rexroad III - Genetics
• George R. Seiler - Veterinary sciences
• Alfred H. Stiller - Chemistry
• Richard Z. Woodworth - Agriculture
• Paul F. Ziemkiewicz - Land Reclamation
• Thomas van der Zwet - Plant Pathology

In this section:

• Applied and Environmental Microbiology (p. 4)
• Environmental Protection (p. 5)
• Equine Studies (p. 5)
• Food Science and Technology (p. 6)
• Food Service Production (p. 6)
• Horticulture (p. 7)
• Pest Management (p. 7)
• Soil Science (p. 8)

APPLIED AND ENVIRONMENTAL MICROBIOLOGY

MINOR CODE - U082

The minor in Applied and Environmental Microbiology is designed to introduce students to the beneficial and harmful roles of microorganisms in a variety of diverse environments including plants, animals, soil, food, air, and water. Emphasis is given to the importance of microorganisms in such applied areas as public health, plant disease, pollution and pollution abatement, biological control of pests, bio-deterioration, and ecology.

A minimum GPA of 2.5 is required in all minor courses
A grade of C or higher must be earned in all minor courses

Minor Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEM 341</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>PPTH 401</td>
<td>General Plant Pathology</td>
<td>4</td>
</tr>
<tr>
<td>Minimum of seven hours selected from the following:</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>AEM 401</td>
<td>Environmental Microbiology</td>
<td></td>
</tr>
<tr>
<td>ENVP 401</td>
<td>Environmental Microbiology</td>
<td></td>
</tr>
<tr>
<td>AEM 408</td>
<td>Applied Water Microbiology</td>
<td></td>
</tr>
<tr>
<td>AEM 420</td>
<td>Soil Microbiology</td>
<td></td>
</tr>
<tr>
<td>ENVP 420</td>
<td>Soil Microbiology</td>
<td></td>
</tr>
<tr>
<td>AGRN 420</td>
<td>Soil Microbiology</td>
<td></td>
</tr>
<tr>
<td>AEM 445</td>
<td>Food Microbiology</td>
<td></td>
</tr>
<tr>
<td>AEM 449</td>
<td>Food Microbiology Lab</td>
<td></td>
</tr>
<tr>
<td>AEM 493</td>
<td>Special Topics course</td>
<td></td>
</tr>
<tr>
<td>AEM 495</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>PPTH 409</td>
<td>Nematology</td>
<td></td>
</tr>
<tr>
<td>PPTH 470</td>
<td>Forest Pest Management</td>
<td></td>
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<tr>
<td>PPTH course - Research-Airborne Fungi</td>
<td></td>
<td></td>
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<tr>
<td>PPTH 503</td>
<td>Mycology</td>
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</tr>
</tbody>
</table>

Total Hours 15

* Maximum of four hours of special topics courses (AEM 493 or PPTH 493) can be applied toward the 15-hour total and requires approval of the division director.

** Courses with the same title are equivalent to each other.
ENVIRONMENTAL PROTECTION
MINOR CODE - U061

This minor is designed to provide students the opportunity to study the science and techniques which are applied to safe-guard the quality of the environment with emphasis on water, soil and crop protection. This minor would benefit students from agronomy, horticulture, and other disciplines with significant backgrounds in chemistry and biological science, who intend to work in an area where their major is applied to environmental protection. A grade of C or higher must be earned in all minor courses.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ENVP 155</td>
<td>Elements of Environmental Protection</td>
<td>3</td>
</tr>
<tr>
<td>ENVP 460</td>
<td>Environmental Impact Assessment</td>
<td>3</td>
</tr>
<tr>
<td>AEM 408</td>
<td>Applied Water Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>ENVP 355</td>
<td>Environmental Sampling and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ENVP 401</td>
<td>Environmental Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>AEM 401</td>
<td>Environmental Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>ENVP 412</td>
<td>Pest Management</td>
<td>3</td>
</tr>
<tr>
<td>ENTO 412</td>
<td>Pest Management</td>
<td>3</td>
</tr>
<tr>
<td>ENVP 420</td>
<td>Soil Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>AEM 420</td>
<td>Soil Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>AGRN 420</td>
<td>Soil Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>ENVP 425</td>
<td>Environmental Soil Management</td>
<td>3</td>
</tr>
<tr>
<td>AGRN 425</td>
<td>Environmental Soil Management</td>
<td>3</td>
</tr>
<tr>
<td>ENVP 451</td>
<td>Principles of Weed Science</td>
<td>3</td>
</tr>
<tr>
<td>AGRN 451</td>
<td>Principles of Weed Science</td>
<td>3</td>
</tr>
<tr>
<td>ENVP 455</td>
<td>Reclamation of Disturbed Soils</td>
<td>3</td>
</tr>
<tr>
<td>AGRN 455</td>
<td>Reclamation of Disturbed Soils</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours: 15

* Courses with the same title are equivalent to each other.

EQUINE STUDIES
MINOR CODE - U069

This minor is designed for students who wish to advance their knowledge of equine management practices or wish to find employment within the equine industry. Students will gain knowledge of equine management related to reproduction, nutrition, health, training methods, design of facilities, and economy of the industry.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;VS 281</td>
<td>Introduction to Equine Care and Use</td>
<td>3</td>
</tr>
<tr>
<td>ANPR 344</td>
<td>Light Horse Science</td>
<td>4</td>
</tr>
<tr>
<td>A&amp;VS 330</td>
<td>Equine Facility Design and Management</td>
<td>3</td>
</tr>
<tr>
<td>ARE 421</td>
<td>Rural Enterprise Development</td>
<td>3</td>
</tr>
<tr>
<td>A&amp;VS 343</td>
<td>Equine Hoof and Limb</td>
<td>3</td>
</tr>
<tr>
<td>ANPR 338</td>
<td>Horse/Livestock/Poultry Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>A&amp;VS 370</td>
<td>Riding Theory and Techniques</td>
<td>3</td>
</tr>
<tr>
<td>A&amp;VS 463</td>
<td>Equine Events Management</td>
<td>3</td>
</tr>
<tr>
<td>ANNU 260</td>
<td>Animal Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>ANPH 301</td>
<td>Introduction to Animal Physiology</td>
<td>3</td>
</tr>
<tr>
<td>ANPH 440</td>
<td>Equine Exercise Physiology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours: 11-15
Select at least 2 of the following:

- A&VS 343 Equine Hoof and Limb
- ANPR 338 Horse/Livestock/Poultry Evaluation
- A&VS 370 Riding Theory and Techniques
- A&VS 497 Research

**Equine Assisted Activities and Therapies Track**

- A&VS 425 Principles of Therapeutic Horsemanship 1
- A&VS 426 Principles of Therapeutic Horsemanship 2

Select at least 2 of the following:

- A&VS 370 Riding Theory and Techniques
- A&VS 330 Equine Facility Design and Management
- ARE 421 Rural Enterprise Development
- DISB 380 Disability and the Family
- DISB 482 Disability in the Community
- PSYC 241 Introduction to Human Development
- PSYC 281 Introduction to Abnormal Psychology

**Total Hours: 18-22**

* If a student wishes to become a candidate for certification to become a PATH registered level riding instructor, the minor and the following classes must be completed: A&VS 293: Riding Theory and Techniques, A&VS 491: Professional Field Experiences (Volunteerism for EAAT), and A&VS 482 Practicum for Equine Assisted Activities and Therapies Instructor Certification.

**FOOD SCIENCE AND TECHNOLOGY**

**MINOR CODE - U057**

The minor in Food Science and Technology is for students interested in pursuing careers in the food industry. The students will gain knowledge of food processing, engineering, chemistry, microbiology, and marketing. The minor will broaden career opportunities to food safety and quality assurance, food science/technology, food engineering, sensory evaluation, new food marketing research, food development, technical sales and marketing, and state or federal food inspectors. A minimum GPA of 2.0 is required in all minor courses.

**Minor Requirements**

- FDST 200 Food Science and Technology 3
- FDST 308 Food Plant Sanitation 3
- ARE 431 Marketing Agricultural Products 3

**Electives** - Select three of the following: 9

- AEM 341 General Microbiology
- ARE 204 Agribusiness Management
- ARE 406 Applied Quantitative Methods
- FDST 365 Muscle Foods Technology
- FDST 445 Food Microbiology
- or AEM 445 Food Microbiology
- FDST 491 Professional Field Experience
- HN&F 171 Introduction to Human Nutrition
- HN&F 348 Science of Food Preparation
- HN&F 350 Cross-Cultural Cuisine
- HN&F 353 Food Service Systems Management

**Total Hours: 18**

**FOOD SERVICE PRODUCTION**

**MINOR CODE - U104**

The minor in food service production is designed to provide students educational opportunities in the areas of hospitality and/or foodservice management and/or food production management. Emphasis is given to those courses that provide expanded knowledge on management, food production, and food safety. Students must obtain a 75% or higher on the ServSafe® Food Safety and Alcohol examinations offered in order to obtain the minor. A minimum GPA of 2.0 is required in all minor courses.
A grade of C or higher must be earned in all minor courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ARE 440</td>
<td>Futures Markets and Commodity Prices</td>
<td>3</td>
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<tr>
<td>FDST 200</td>
<td>Food Science and Technology</td>
<td>3</td>
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<tr>
<td>FDST 445</td>
<td>Food Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>HN&amp;F 353</td>
<td>Food Service Systems Management</td>
<td>4</td>
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Choose two of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ANPR 341</td>
<td>Beef Production</td>
<td>6</td>
</tr>
<tr>
<td>ANPR 350</td>
<td>Milk Production</td>
<td></td>
</tr>
<tr>
<td>ANPR 353</td>
<td>Pork Production</td>
<td></td>
</tr>
<tr>
<td>ANPR 356</td>
<td>Small Ruminants</td>
<td></td>
</tr>
<tr>
<td>ANPR 367</td>
<td>Poultry Production</td>
<td></td>
</tr>
<tr>
<td>ARE 204</td>
<td>Agribusiness Management</td>
<td></td>
</tr>
<tr>
<td>FDST 308</td>
<td>Food Plant Sanitation</td>
<td></td>
</tr>
<tr>
<td>FDST 365</td>
<td>Muscle Foods Technology</td>
<td></td>
</tr>
<tr>
<td>HN&amp;F 348</td>
<td>Science of Food Preparation</td>
<td></td>
</tr>
<tr>
<td>HN&amp;F 512</td>
<td>Maternal and Child Nutrition</td>
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</tbody>
</table>

Total Hours: 19

**HORTICULTURE**

**MINOR CODE - U062**

The minor in Horticulture is designed to provide students educational opportunities in the area of ornamental horticulture as it relates to current urban environments. Emphasis is given to learning about the establishment and management of herbaceous and woody plants used in commercial and home settings. The program would complement the curricula of students interested in careers in various aspects of management and care of turf, parks, and recreational areas, and in landscaping planning. A grade of C or higher must be earned in all minor courses.

A minimum GPA of 2.0 is required in all minor courses.

**Minor Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PLSC 206</td>
<td>Principles of Plant Science</td>
<td>4</td>
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<tr>
<td>HORT 220</td>
<td>General Horticulture</td>
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</table>

Select three of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>HORT 420</td>
<td>Plant Propagation</td>
<td>9</td>
</tr>
<tr>
<td>HORT 441</td>
<td>Garden Center Management</td>
<td></td>
</tr>
<tr>
<td>HORT 444</td>
<td>Handling and Storage of Horticultural Crops</td>
<td></td>
</tr>
<tr>
<td>HORT 445</td>
<td>Greenhouse Management</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 16

**PEST MANAGEMENT**

**MINOR CODE - U059**

This minor is designed to introduce students to insects, plant pathogens, and weeds as pests that attack or compete with agricultural crops, ornamentals, and forest trees. Emphasis will be placed on environmentally sound management systems based on cultural, biological, and chemical strategies. This program complements current degrees and strengthens the background of students in horticulture, crops agronomy, environmental protection and other majors in biological sciences. A minimum GPA of 2.0 is required in all minor courses.

A grade of C or higher must be earned in all minor courses.

**Minor Requirements**

Select one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>ENTO 412</td>
<td>Pest Management</td>
<td>4</td>
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<tr>
<td>ENVP 412</td>
<td>Pest Management</td>
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<tr>
<td>PPTH 401</td>
<td>General Plant Pathology</td>
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</tbody>
</table>

Select at least three of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>AGRN 451</td>
<td>Principles of Weed Science</td>
<td>7</td>
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<tr>
<td>ENVP 451</td>
<td>Principles of Weed Science</td>
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</tr>
<tr>
<td>ENTO 450</td>
<td>Insect Ecology</td>
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</tbody>
</table>
ENTO 470  Forest Pest Management
PPTH 470  Forest Pest Management
PPTH 470  Forest Pest Management
PLSC 453  Organic Crop Production
PPTH 409  Nematology

ENTO 493 Special Topics course
PPTH 493 Special Topics course

**Courses with the same title are equivalent to each other.

**No more than four hours may be taken as special topics.

**SOIL SCIENCE

**MINOR CODE - U060

This minor is designed to introduce students to the relationships of soils to environmental protection and agricultural production. It serves as a means to broaden and strengthen the backgrounds of students majoring in non-soils curricula within the Davis College as well as students majoring in biological, earth science, and environmental curricula in other WVU colleges.

A grade of C or higher must be earned in all minor courses

**Minor Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AGRN 202</td>
<td>Principles of Soil Science</td>
<td>3</td>
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<tr>
<td>AGRN 203</td>
<td>Principles of Soil Science Laboratory</td>
<td>1</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>AGRN 425</td>
<td>Environmental Soil Management</td>
<td>3</td>
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<tr>
<td>ENVP 425</td>
<td>Environmental Soil Management</td>
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<tr>
<td>Select at least three of the following:</td>
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<tr>
<td>AGRN 125</td>
<td>Soil Judging</td>
<td></td>
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<tr>
<td>AGRN 410</td>
<td>Soil Fertility</td>
<td></td>
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<tr>
<td>AGRN 415</td>
<td>Soil Survey and Land Use</td>
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<tr>
<td>AGRN 417</td>
<td>Soil Genesis and Classification</td>
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<tr>
<td>AGRN 420</td>
<td>Soil Microbiology</td>
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<tr>
<td>AEM 420</td>
<td>Soil Microbiology</td>
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</tr>
<tr>
<td>ENVP 420</td>
<td>Soil Microbiology</td>
<td></td>
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<tr>
<td>AGRN 430</td>
<td>Soil Physics</td>
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<tr>
<td>AGRN 455</td>
<td>Reclamation of Disturbed Soils</td>
<td></td>
</tr>
<tr>
<td>ENVP 455</td>
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</tbody>
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**Total Hours 15

* Courses with the same title are equivalent to each other.