Montgomery County Community College
BIO 123 FS
Field Biology of West Virginia
3-0-3

COURSE DESCRIPTION:
The course is designed for students who desire to gain insights into ecological and environmental principles and processes in the Central Appalachian mountain ecosystems, and a diversity of career options associated with their study, protection, and restoration. Students will explore the ecosystems and the impacts of humans on the environment through lectures, discussions, field work and participation in research.

Special attention will be paid to introduce students to various "applied" Biology-related career fields (e.g., forestry, land restoration, preserve management, park management and supervision, environmental policy, etc.), and for the students to interact directly with professionals in these fields. This is a two week intensive on-site field course involving significant travel around northern and central West Virginia. Some of the travel is on foot and/or off-trail, on sometimes steep or rocky terrain. No backpacking is involved, but some day hikes up to 5-8 miles may be expected.

REQUISITES:
Previous Course Requirements
None

Concurrent Course Requirements
None

COURSE COMMENTS
- Registration is by permission of instructor only, which is given only after a personal interview with the prospective student.
- High School Biology recommended

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Show a non-science major college-level understanding of ecological concepts and principles as related to the natural and human-altered ecosystems of the Central Appalachian mountains.	Site visits Lectures/presentations Readings In-field project work	Field journal Fieldwork participation Discussion Exam or other writing

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
2. Contrast various Central Appalachian ecosystems according to dominant species, and the human and abiotic forces that influence them.	Site visits Lectures/presentations Readings In-field project work Pre-trip research	Field journal Fieldwork participation Discussion Exam or other writing
3. Formulate defensible opinions concerning contemporary biological and environmental issues.	Site visits/observations Lectures/presentations Readings Research Work	Field journal Fieldwork participation Discussion Exam or other writing
4. Explore academic and professional career interests in various applied career fields in Biology, e.g., forestry, agriculture, land management, environmental protection, ecological restoration and environmental policy.	Lectures/presentations Guest interaction and discussion Readings	Field journal Fieldwork participation Discussions Exam or other writing
5. Work with team members to achieve common goals.	In-field project work	Fieldwork and campsite participation

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria*.

SEQUENCE OF TOPICS:

1. Case Study/introduction: Dolly Sods Wilderness Area
2. Local communities
    a. Contrasts in vegetation between lowland, mid-level and mountain communities
    b. Special unique communities—caves, mountain wetland/bog, etc.
    c. Dominant species identification
    d. Natural succession processes following disturbances
    e. Roles of top level predators
    f. Geological underpinnings of community development

3. Ongoing and legacy impacts of coal mining, forestry, and post-disturbance land restoration
4. Water quality monitoring
    a. Acid mine drainage
    b. Aquatic vertebrae and invertebrate ecology
5. Human impact and management of public lands
    a. Sustainability of recreational tourism use
    b. Mitigation projects, including hydrological changes
    c. Legal and jurisdictional differences between various categories of public land (National forests, State forests, Wilderness areas, Parks, etc.)
6. Environmental influences
    a. Invasive species impacts
    b. Air and water pollution impacts
    c. Modern and organic farming integration with the broader landscape
    d. Climate change impacts
    e. Impacts of development and “suburban sprawl”
7. Protecting the environment and its inhabitants
    a. Preservation and protection of land areas and waterways
    b. Land management decision-making, including game and protected species
    c. Sustainable forestry concepts
8. Career options in Environmental Biology fields

LEARNING MATERIALS:
Articles and materials provided by instructor based on field trip specifics. Students will also be provided with a “What to Bring” list, some of which may need to be purchased in advance of the course.

Other learning materials may be required and made available directly to the student and/or via the College’s Libraries and/or course management system.

COURSE APPROVAL:

Prepared by:	Jerry Coleman	Date: 5/4/2015
VPAA/Provost or designee Compliance Verification:		
	Victoria L. Bastecki-Perez, Ed.D.	Date: 5/15/2015
Revised by:	Jerry Coleman	Date: 4/2017
VPAA/Provost or designee Compliance Verification:		
	Victoria L. Bastecki-Perez, Ed.D.	Date: 4/18/2017

This course is consistent with Montgomery County Community College’s mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.