BIOL 201 – Ecology and Field Methods

Instructor - Dr. Tom Ford
Office – S-201e
Office Hours -  Tues 1:30-2:30pm; Wed 9-10am & 1:30-2:30pm; Thurs 8:30-9:30am; Fri. 11-12pm
Phone # - 304-384-5214
Email – tford@concord.edu

Course Title: BIOL 201, Ecology and Field Methods
Course CRN # and section, credit hours: 10456, sec 01, 4 hours
Semester taught: Fall 2019
Room number: S-300 (S-210 for lab)
Course time: MWF 10-10:50am (Lecture); M 1-3pm or M 3-5pm (Lab)
Course Management System: Moodle
Hardware/Software needed: no specific requirement
Pre-requisites: BIOL 101/102 or BIOL 103, MATH 103

Textbooks
Required:

Optional:

Course Description/Rationale
Examination of the interaction of organisms with their environment including population growth and regulation, interaction among species, and the structure and function of communities and ecosystems. Impact of humans on the environment and its consequences to society and human health are discussed.

Concord University Educational Goals:
Knowledge/Mastery of Content. Students will demonstrate a depth of knowledge and apply the methods of inquiry in a discipline of their choosing, and they will demonstrate a breadth of knowledge across varied disciplines.

Critical Thinking. Student will demonstrate the ability to access and interpret information, respond and adapt to changing situations, make complex decisions, solve problem, and evaluate
actions. Communication Students will demonstrate the ability to communicate clearly and effectively through inter and intra personal engagement.

**Civic, Cultural, and Global Competence.** Students will demonstrate awareness and understanding of the skills necessary to live and work in a diverse world.

**Course Learning Outcomes**

1. To understand the major concepts at each hierarchical level of ecology, including population, community, and ecosystem ecology.
2. To understand the effects of human activity on the ecology of the planet and the extent that human populations rely on natural resources.
3. To become familiar with the basic methods and equipment used in ecological research.

**Grades**

Your grade for this course will be based on the following assignments.

**Lecture and Final Exams:** Questions on the exam will be a combination of multiple choice, short answer, and essay. Many of the questions will require comprehension of ecological concepts (e.g. problem solving) covered in class rather than rote memorization.

The lecture and final exams will include material covered in lecture and reading assignments.

**Lab Reports:** You will write a 1-3 page lab report for each of the lab units during the semester. See lab schedule for due dates. The format of these reports is outlined in the lab manual. Your lab report will be graded both on content and style (format, grammar, etc.). You will be required to submit all reports to Moodle in electronic format (WORD or pdf).

**Reading/Data Analysis Assignments:** There will be 6-8 reading/data analysis assignments. You will be required to report out on the reading assignment in class or take an in-class/online quiz.

**Quizzes:** In-class and online (Moodle) quizzes may be administered throughout the semester. These quizzes can cover information from lecture, reading assignments, and/or lab. In-class quizzes will be announced at least one class period before administered. Online quizzes are open book. Collaboration with other students while taking an online quiz is not permitted; violation of this policy will be considered a severe case of cheating (see consequences below).
Below you will also find a breakdown of the possible points you can earn.

**Breakdown of Total Possible Points**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Exams (3) @ 100 pts. each</td>
<td>300 pts.</td>
</tr>
<tr>
<td>Final Exam</td>
<td>150 pts.</td>
</tr>
<tr>
<td>Lab Reports (3) @ 30 pts. each</td>
<td>90 pts.</td>
</tr>
<tr>
<td>Lab Reports (2) @ 50 pts. each</td>
<td>100 pts.</td>
</tr>
<tr>
<td>Quizzes and Reading Assignments @ 5 or 10 pts. each</td>
<td>80 pts.</td>
</tr>
<tr>
<td><strong>Total Points Possible:</strong></td>
<td><strong>720 pts.</strong></td>
</tr>
</tbody>
</table>

**Grade Scale**

<table>
<thead>
<tr>
<th>% Total Possible Points</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90.0 – 100%</td>
<td>A</td>
</tr>
<tr>
<td>80.0 – 89.9%</td>
<td>B</td>
</tr>
<tr>
<td>70.0 – 79.9%</td>
<td>C</td>
</tr>
<tr>
<td>60.0 – 69.9%</td>
<td>D</td>
</tr>
<tr>
<td>&lt; 60.0%</td>
<td>F</td>
</tr>
</tbody>
</table>

**Grading Policy**: I do not curve exam scores. The only circumstance in which I might adjust scores on an exam is if I feel one or more questions were not presented in a clear manner. If this circumstance occurs, I will add points to everyone’s score.

For the final grade, I will total the points earned over the semester and assign a letter grade based on the scale presented above. If you are within 0.5% of a higher letter grade, I will use several factors in determining whether to “bump” you up, including attendance, class participation, and evidence of improvement over the semester.

**Classroom Conduct**

During lecture, discussion of material and questions are encouraged. However, all class discussions and questions should be directed through the instructor and not your neighbor. Talking with your friends when lecturing, answering questions, or during class discussions is disruptive to others and will not be tolerated. **Use of electronic devices (e.g. phones, laptops and tablets) for non-class related activities is not permitted.**

A warning will be given the first time a problem occurs. Subsequent occurrences may result in the offender being dropped from the class and receiving an F for the course if the action occurs after the final date for withdrawal (see the Academic Policies and Procedures section in the Academic Catalog).
Academic Honesty and Late Penalties
Cheating (especially plagiarism) will not be tolerated. In most cases, the first offense will result in a 0% (F) for the assignment. An additional offense or severe first offense will result in a 0% (F) for the course and will be reported to the University for possible further action. Please consult the plagiarism section in the lab manual. Ignorance of the policies and definitions outlined in the lab manual will not be accepted as a reason for violating them.

Late assignments may be assessed a penalty of up to 10% of the total possible points for each school day after the due date (starting immediately after the class period it is due). This penalty includes late paper submissions to Moodle.

Attendance and Make-up Policy
Please inform me as soon as possible if you anticipate missing lecture or lab. For field trips, please show up at least 10 minutes before the start of lab as we will leave campus promptly at the beginning of the lab period.

A documented excuse (from a doctor or university official) must be provided to make-up an exam. The make-up exams must be completed within one week after the original scheduled date. Unexcused absences from lecture or lab may result in penalties on lab reports or assignments associated with those classes missed. All make-up work must be completed within one week of the original due date.

Withdrawal and Audit Policies
Faculty in the College of Science, Mathematics, and Health will not sign academic exceptions for withdrawal after the deadline for students earning a grade of D or F. Academic exceptions for withdrawal after the deadline will be considered for students earning grades of A, B, or C only under highly unusual and extenuating circumstances. It is also the policy of the Division that students may not change to audit status in a course after the 10-week withdrawal deadline under any circumstances.

Students auditing this class are expected to regularly attend lecture and lab. Failure to attend class will result in being dropped from the course.

Electronic Devices Policy
Electronic devices (e.g. phones, tablets, and laptops) may only be used in class for educational purposes related to this course. Texting and use of social media during class is prohibited. Electronic device privileges may be limited or revoked if the use of devices distracts others during lecture or lab. Violation of this policy may result in the loss of device privileges.

Cell phones and other electronic devices must be turned off and placed out of sight during tests, quizzes, and other assessments during class and lab. Cell phones may NOT be used as a calculator during tests and quizzes.
General University Policies

Accessibility/Accommodations:
Concord University is committed to responding to the needs of students with disabilities as defined by the Americans with Disabilities Act. Please inform your instructor at the beginning of the class semester if you have a disability and are requesting accommodations. It is your responsibility to self-disclose that you are requesting accommodations. The University and instructor will provide you with a reasonable accommodation. You should register with CU’s Disability Services Office, located in the Athens campus Jerry and Jean Beasley Student Center, Bottom Floor, across from the Campus Post Office. The Disability Services Office phone is 304-384-6086 or you can email the Director, Nancy Ellison, at nellison@concord.edu for assistance.

Academic Dishonesty
Academic dishonesty is morally unacceptable as well as destructive to the learning and teaching atmosphere. Academic dishonesty includes the giving or receiving of improper help on examinations or assignments, falsifying documents, and plagiarism (the act of stealing and using, as one’s own, the ideas or the expression of the ideas of another). Such dishonesty can lead to a variety of penalties—including but not limited to failure of assignment, failure of course, loss of institutional privileges, or dismissal from the University. (See University Catalog Academic Policies and Procedures at http://catalog.concord.edu/content.php?catoid=10&navoid=582#Academic_Dishonesty.)

Concord University Honor Code
A Concord University Honor Code was approved by students, staff, faculty, administration, and the CU Board of Governors. The Code states:
"As a member of the Concord University Community I will act with honesty and integrity in accordance with our fundamental principles and I will respect myself and others while challenging them to do the same."
The Honor Code is intended to unite the Concord community behind a culture of honesty, integrity, and civility.

Class/Online Attendance Policy
Regular class attendance is part of a student’s academic obligation at Concord. Irregular attendance may affect academic performance adversely and is detrimental to the atmosphere of a class. (See University Catalog Academic Policies and Procedures at http://catalog.concord.edu/content.php?catoid=10&navoid=582#Class_Attendance.)

Emergency Alert System
In an effort to increase safety and security on our campus, Concord University encourages everyone to register for instant text message alerts. Alerts will only be used for security and safety notices. All students, faculty, and staff are eligible to receive text message alerts on their cell phones or email alerts. Please go to https://concord.omnilert.net/subscriber.php to sign up for the Emergency Alert System or contact the IT Help Desk for further assistance (304-384-5291).

Emergency Information
Emergency/courtesy telephones are located at the main entrance of each residence hall and at various other locations on campus. Emergency telephones can be identified by the flashing blue light and will provide the user with a direct link to Public Safety at the press of a button. To
report an on-campus emergency, call 304-384-5357 or 911. The Office of Public Safety is located on the bottom floor of the Rahall Technology Center. For further emergency information go to https://www.concord.edu/Student-Life/Office-of-Public-Safety/Alert-Systems.aspx.

Inclement Weather Policy
As a general policy, the University will remain in normal operations during adverse weather conditions. In the event of severe weather conditions, the following may occur:

**University Closure**
No students or employees are to report.

**Classes Cancelled**
Students do NOT report BUT employees are expected to report to work at their normal time.

**Operating on an Inclement Weather Delay**
Under this schedule, all 8 a.m. classes will start at 10 a.m. Students and faculty will follow the Inclement Weather Schedule. (See https://www.concord.edu/Student-Life/Office-of-Public-Safety/Inclement-Weather-Schedule.aspx for Athens/Beckley Inclement Weather Schedules.)

*Announcements invoking the late schedule or other options referenced above are aired on area radio and television stations and are sent as text and email messages to those enrolled for this service.*

Student Conduct
In classrooms, online, laboratories, and during any activities that are part of course requirements, students are expected to observe reasonable rules of conduct.

Academic Resources
The Center for Academic and Career Development is ready to assist any student with academic or personal concerns, tutoring, study skills, time management, major and career exploration, and much more. The Center for Academic and Career Development is located in Suite 243 (Atrium) of the Rahall Technology Center. Students can stop by the CACD Monday through Friday, 8:00 am until 4:00 or by appointment. The CACD may be reached by calling (304) 384-6074, (304) 384-6298, or cacd@concord.edu. Website: http://www.concord.edu/Student-Life/CACD.aspx. The drop-in tutoring schedule is posted online: https://apps.concord.edu/tutoring/. Additional academic resources are available online and on-demand. See https://www.concord.edu/Student-Life/CACD/Academic-Success-Center/Success-Resources.aspx for a list of these resources.

Mental Health Resources
Concord University recognizes that being a student can be stressful at times for a number of reasons some of which may be related to the challenge of balancing your role as a student with other facets in your life. There are a number of resources to help you cope if you find that you are overwhelmed. The first is the CU Counseling Center which is located on the third floor of the Jerry and Jean Beasley Student Center on the Athens Campus. The center is staffed by a licensed mental health professional, graduate students, and student employees. Appointments are available Mon-Fri from 9:00 AM – 4:00 PM. Appointments at the Erma Byrd Higher Education Center in Beckley may be made by arrangement. Students may call the counseling
center at 304-384-5290 or make their own appointment through the electronic scheduling system which may be found on Counseling Center section of the Student Services tab on CU’s main page. Counseling services are free of charge. Other resources available are Student Support Services and the Academic Success Center on the Athens campus.

**Sexual Harassment & Assault**

Federal law, Title IX, and Concord University policy prohibits discrimination, harassment, and violence based on sex and gender (including sexual harassment, sexual assault, domestic/dating violence, stalking, sexual exploitation, and retaliation). If you or someone you know has been harassed or assaulted, you can receive confidential counseling support through the Concord University Counseling Center (304-384-5290). Alleged Violations can be reported non-confidentially to the Concord University Title IX Coordinator at 304-384-6327 or [https://www.concord.edu/Student-Life/Title-IX.aspx](https://www.concord.edu/Student-Life/Title-IX.aspx). Reports to Campus Security can be made at (304-384-5357). As an employee at Concord University, I am a mandatory reporter which means I must report any sexual misconduct I am made aware of. This includes verbal or written (such as in an assignment) disclosures of sexual harassment or sexual assault.

**Technology Services**

Contact the CU Help Desk at extension 5291 from campus or 304-384-5291 off campus. You can find additional information at [https://www.concord.edu/About/Important-Offices-Centers/Technology-Services/Help-Desk-Support.aspx](https://www.concord.edu/About/Important-Offices-Centers/Technology-Services/Help-Desk-Support.aspx).

**Syllabus Disclaimer**

"This syllabus is subject to change based on the needs of the class. Please check it regularly."

The mission of Concord University is to provide quality, liberal arts based education, to foster scholarly and creative activities and to serve the regional community ([http://www.concord.edu/academics/](http://www.concord.edu/academics/)).
# Ecology and Field Methods – BIOL 201

## Tentative Lecture and Exam Schedule – Fall 2019

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Textbook*</th>
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</thead>
</table>
| Week 1&2 | • Introduction to Course  
• Module 1.1 - Global Biodiversity and Ecosystem Services  
• Module 1.2 – Global Climate Change | Chapter 1  
Chapter 22 |
| Week 2, 3, & 4 | • Module 1.3 – Population Structure and Life Table Analysis  
• Module 1.4 – Population Growth and Regulation  
• Module 1.5 – Human Population Growth | Chapter 8 and 9  
Chapter 9 and 10 |
| Sept. 16th | Lecture Exam #1 | |
| Week 5, 6, 7, & 8 | **Species Interactions**  
• Module 2.1 - Competition  
• Module 2.2 - Predation  
• Module 2.3 - Parasitism and Disease Ecology  
• Module 2.4 - Mutualism | Chapter 11  
Chapter 12  
Chapter 13  
Chapter 14 |
| Oct. 16th | Lecture Exam #2 | |
| Week 9, 10, 11, & 12 | **Community Ecology**  
• Module 3.1 - Community Structure/Abiotic Factors  
• Module 3.2 - Food Webs and Community Dynamics  
• Module 3.3 - Community Succession | Chapters 15, 2-5  
Chapter 17 & 18  
Chapter 16 |
| Nov. 13th | Lecture Exam #3 | |
| Week 13 & 14 | **Ecosystem Ecology**  
• Module 4.1 - Productivity and Energy Flow  
• Module 4.2 - Nutrient Cycles and Biogeochemistry  
• Module 4.3 – Global Nutrient Cycles | Chapters 19&20  
Chapter 21  
Chapter 24 |
| Dec. 13th, 9am | **Comprehensive Final Exam** (1/3 new material; 2/3 material from 3 previous lecture exams) | |

*Cain’s Ecology (3rd Edition)*
Ecology and Field Methods – BIOL 201
Tentative Lab Schedule – Fall 2019

<table>
<thead>
<tr>
<th>Week</th>
<th>Lab</th>
<th>Assignments Due</th>
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<tbody>
<tr>
<td>Aug. 19</td>
<td>No Lab</td>
<td></td>
</tr>
<tr>
<td>Aug. 26</td>
<td><strong>Lichen/Moss Ecology</strong> *</td>
<td></td>
</tr>
<tr>
<td>Sept. 2</td>
<td>No Lab – Labor Day</td>
<td>Lichen/Moss Report (30 pts.)</td>
</tr>
<tr>
<td>Sept. 9</td>
<td><strong>Stream Ecology I</strong> *</td>
<td></td>
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<tr>
<td>Sept. 16</td>
<td>Stream Ecology II</td>
<td></td>
</tr>
<tr>
<td>Sept. 23</td>
<td><strong>Salamander Community I</strong> *</td>
<td></td>
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<tr>
<td>Sept. 30</td>
<td>Salamander Community II</td>
<td></td>
</tr>
<tr>
<td>Oct. 7</td>
<td><strong>Forest Ecology I</strong> *</td>
<td>Salamander Report (30 pts.)</td>
</tr>
<tr>
<td>Oct. 14</td>
<td><strong>Forest Ecology II</strong> *</td>
<td></td>
</tr>
<tr>
<td>Oct. 21</td>
<td>Forest Ecology III</td>
<td></td>
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<tr>
<td>Oct. 28</td>
<td>TBD</td>
<td>Forest Ecol Report (50 pts.)</td>
</tr>
<tr>
<td>Nov. 4</td>
<td>Independent Project I</td>
<td></td>
</tr>
<tr>
<td>Nov. 11</td>
<td>Independent Project II</td>
<td></td>
</tr>
<tr>
<td>Nov. 18</td>
<td>Independent Project III</td>
<td></td>
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<tr>
<td>Nov. 25</td>
<td>NO LAB – Thanksgiving</td>
<td></td>
</tr>
<tr>
<td>Dec. 2</td>
<td>No Lab</td>
<td>Ind Project Report (50 pts.)</td>
</tr>
</tbody>
</table>

It is VERY IMPORTANT that you read the assigned chapter in the lab manual BEFORE coming to lab. Since we have only 2 hrs. per lab, you will not have time to “figure out” what is going on.

Field Trips (* and in BOLD above)
- We will leave promptly at the start of lab from the small parking area behind University Point. Please try to arrive at least 10 minutes before the start of lab.
- Wear appropriate clothing. It is recommended that you wear hiking boots or closed toed shoes. You should expect that your shoes and clothes will get dirty … so avoid wearing those new clothes you just bought.
- Bring a water bottle.
- Be prepared for rain. Bring a rain poncho or other water-proof gear. WE WILL GO OUT REGARDLESS OF WEATHER.

Lab Reports
- All lab reports must be submitted electronically to Moodle by 5pm on Friday of the week they are due unless otherwise notified in class (see above).

See the lab manual for further information regarding the field trips and lab reports.