Instructor: Dr. Kerri Cornell Duerr  
Office: 313 Hoyt Science Center  
Phone: 724-946-7210  
Email: duerrkc@westminster.edu  
Office hours: Mon 1:00-2:00 PM, Wed 9:20 – 10:15 AM, Thurs 9:15 – 10:15 AM

Time & Location

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Final Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>M, W, F 10:30-11:30 AM</td>
<td>Tues 2:00 – 5:00 PM</td>
<td>Monday, 06 May, 8:00 AM – 10:30 AM</td>
</tr>
<tr>
<td>HSC 152</td>
<td>HSC 342</td>
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Overview: This course is a continued introduction to the fundamental concepts in biology. Emphasis is placed upon evolution as a central concept in biology, as well as animal and plant form and function. The laboratory component of this course complements lecture material and promotes practical lab skill development and independent thought.

Course Learning Objectives:
Our world is increasingly influenced by new information and technological applications that impact all areas of life and society. Many of these new discoveries and applications have occurred in and centrally involve the life sciences. With this in mind, students who successfully complete this course shall:

1. develop an appreciation for (and a college level understanding of) evolution as a central and unifying concept in biology. This includes consideration of the historical and present-day development and understanding of the theory of evolution by natural selection, various evidences for evolution, population genetics-level evolution, speciation, and phylogeny (relationships of descent). Means of assessment – exams, quizzes, labs and problem sets

2. develop an appreciation for (and a college level understanding of) the anatomical organization and physiology that is fundamental to living organisms (gas exchange, nutrition and digestion, production and utilization of energy, nervous interaction with the environment and reproduction and development). Means of assessment - exams, quizzes, labs and problem sets

3. be familiar with systems of organism classification and be able to identify different groups of organisms based on their anatomy and physiology. Means of assessment – exams, quizzes, labs and problem sets

4. be familiar with the process of scientific inquiry and demonstrate proficiency with this method of inquiry in the field and lab (developing and testing hypotheses, collecting data, interpreting results, and discriminating among valid and invalid conclusions). Means of assessment – lab notebook, formal lab reports, statistical analysis, seminar questions; symposium presentation reviews.

5. demonstrate proficiency with reading scientific literature, science communication, and the purpose of scientific writing. Means of assessment – literature discussions, critical essays and formal presentations, and lab note books and reports.

6. be familiar with the ways in which biology is relevant to our daily lives. Means of assessment – biology seminars and symposium, literature discussions and life outside of the classroom!

The ultimate goal of all these objectives, along with the rest of your education at Westminster College, is to help you become a life scientist and a better citizen; someone who is capable of making well-informed
decisions about current and future scientific discoveries and how they relate to human culture and the surrounding community of living organisms.

**Required Materials:**

2. Lab notebook – composition style, quad-lined notebook used only for BIO 202

**Lab Manual:** There is no formal laboratory manual for this class. Each lab exercise will be available on D2L prior to each lab. You should print them and bring them with you to lab.

**Lecture slides:** My slides will be available for you on D2L after I have completed lecturing on each chapter. They are meant for you to use a guide only, and it is strongly recommended that you record your own notes during class. I recommend writing your notes, not typing them.

**Course Website:** Course information, lecture schedule, list of required readings, announcements, and handouts will be available on D2L. Students are expected to check announcements & their email each day to receive all course updates.

**Evaluation and Grading:** Students are evaluated on written assignments and examinations, and on participation in laboratory. Grade point distribution will be as follows:

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Points</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Exams (4; 100 pts. each)</td>
<td>400</td>
<td>34</td>
</tr>
<tr>
<td>Final comprehensive exam</td>
<td>100</td>
<td>8</td>
</tr>
<tr>
<td>Mastering Biology pre-lecture exercises</td>
<td>100</td>
<td>8</td>
</tr>
<tr>
<td>Lecture Quizzes (4; ~20 pts each)</td>
<td>80</td>
<td>7</td>
</tr>
<tr>
<td>Problem sets / assignments</td>
<td>50</td>
<td>4</td>
</tr>
<tr>
<td>Biology seminars (2; 15 pts. each)</td>
<td>30</td>
<td>3</td>
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<tr>
<td>URAC assignment</td>
<td>20</td>
<td>2</td>
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<tr>
<td>Lab notebook</td>
<td>80</td>
<td>7</td>
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<tr>
<td>Lab worksheets (6; ~25 pts. each)</td>
<td>150</td>
<td>13</td>
</tr>
<tr>
<td>Research papers (2; 75 pts. each)</td>
<td>150</td>
<td>13</td>
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<tr>
<td>Class Participation</td>
<td>20</td>
<td>2</td>
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<tr>
<td><strong>Total Points</strong></td>
<td>1180</td>
<td>100</td>
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<table>
<thead>
<tr>
<th>Grade</th>
<th>Point Range</th>
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<tbody>
<tr>
<td>A</td>
<td>&gt;93%</td>
</tr>
<tr>
<td>A-</td>
<td>90-92.9%</td>
</tr>
<tr>
<td>B+</td>
<td>87-89.9%</td>
</tr>
<tr>
<td>B</td>
<td>83-86.9%</td>
</tr>
<tr>
<td>B-</td>
<td>80-82.9%</td>
</tr>
<tr>
<td>C+</td>
<td>77-79.9%</td>
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<tr>
<td>C</td>
<td>73-76.9%</td>
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<tr>
<td>C-</td>
<td>70-72.9%</td>
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<tr>
<td>D+</td>
<td>67-69.9%</td>
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<tr>
<td>D</td>
<td>63-66.9%</td>
</tr>
<tr>
<td>D-</td>
<td>60-62.9%</td>
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<tr>
<td>F</td>
<td>&lt;60%</td>
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Graded Assignments:

1) **Exams**: Students are evaluated by four lecture exams (~100 pts. each) and one cumulative final exam (100 pts.). The exams will include a mixture of multiple choice, true or false, fill-in-the-blank, and short-answer or essay questions. The comprehensive final exam will include material from the entire semester.

2) **Mastering Biology pre-lecture exercises.** Students are expected to come to class prepared and ready to engage in lecture. In order to facilitate active learning by students, students are required to complete exercises on the Mastering Biology course page BEFORE lecture on a particular topic. Due dates for each chapter will be announced on the Mastering Biology Course page. Website: https://www.pearsonmylabandmastering.com/northamerica/masteringbiology/

   Course name/code: DUERRBIO202S19.

3) **Quizzes, problem sets, assignments**: There will be approximately four quizzes/problem-sets given in lecture over the course of the semester relating to the material we are covering in lecture. These quizzes are designed to help you keep up with lecture material and become familiar with exam question formats. There will also be various lab assignments for multi-week labs which will be announced in lab.

4) **Biology Seminars**: Students are required to attend two Biology Department seminars during the semester and write two questions that occurred to you as you listened to the speaker on an index card. The card should include your name, the name of the seminar speaker, and my name (Dr. Duerr). Questions will be submitted to the professor (any professor present at the seminar) immediately following the seminar (index cards submitted late will not be accepted).

5) **Undergraduate Research & Arts Celebration**: You are required to attend the Undergraduate Research Symposium on Wednesday, April 24. You will be required to evaluate one presentation at the symposium. Additional guidelines will be given in class.

6) **Lab notebooks**: Maintaining a lab notebook is an essential part of doing science. It provides you and the scientific community with documentation of your ideas, hypotheses, data, analyses, and conclusions. **Try to make it a habit to write as much as possible in your lab notebook.** Lab handouts should be read BEFORE the lab session and appropriate introductory preparation should be apparent in your lab notebook. Guidelines for lab notebook organization will be discussed during the first weeks of class. Your lab notebook will be evaluated in class at the beginning of each lab period (5 points each). If you do not have your lab notebook, or you are observed writing notes in anything other than the required lab notebook, you will receive a grade of zero for that lab period. For the research modules, notebooks will be collected after the completion of the lab and scored an additional 25 points for each of these labs (these points will assess your experimental design idea, problems with methods, hypotheses and predictions, hypothetical graphs, and data collection).

7) **Lab worksheets and Research papers**: Following the completion of each lab, you will either complete a worksheet or write a research paper. You will be given additional guidelines in class. These assignments are due at the start of the lab session following the completion of the experiment, unless instructed otherwise. Late assignments will be penalized (see Assignment Policies).

8) **Participation**: Your success in this course will depend on your engagement in the class. Correspondingly, attendance at all scheduled class meetings is expected. Students who must miss a class for legitimate reasons should contact me in advance. Unexcused absences will result in a loss of points for the class participation component of the grade. What I am looking for in participation is that you are **engaged** in the class. That means I want you to come to class prepared to talk. I want you to talk to each other, not
necessarily to me, to challenge statements you don’t agree with, to probe and to think aloud. That doesn’t mean I want you to feel you have to dominate discussions. Maybe some classes you’ll keep your ideas mostly to yourself. But poor participation, judged over the entire semester, as if you clearly just coasted through most of the time, and didn’t express interest or effort in the class and topic will result in a loss of points.

Grading rubric for writing assignments: I will use the following guidelines for assigning letter grades to essay questions and writing assignments, and corresponding point values. For example, if an essay is worth 20 points, and I consider the answer to be worth a B, the student will get 17 points for that essay (i.e., 0.85 x 20). In limited cases, and if appropriate, I will assign a +/-.

"A" work (95%)—students fulfilled the requirement (answered the assigned questions, references, etc.), all concepts are explained correctly and fully, shows depth of knowledge, was able to integrate concepts, provide appropriate examples, and developed a coherent and compelling argument, grammar, sentence structure, spelling etc. at level expected for a college student

“B” work (85%)—similar to A work but lacks depth and integration of knowledge, writing is good but some minor errors, concepts are not fully explained.

“C” work (75%)—work is merely adequate; followed assignment, information accurate but not complete, problems with writing.

“D” work (65%)—is not adequate in one major area (information, writing, etc.) but demonstrates adequacy in other areas.

“F” work (55%)—is unacceptable—does not follow assignment, information is incorrect or incomplete, writing is substandard, etc.

COURSE POLICIES:

Email Etiquette: Email is the best way to reach me. In the spirit of promoting healthy work-life balance, please keep in mind the following email etiquette guidelines: (1) indicate the course in the subject line and topic (e.g. BIO 202 worksheet question), (2) use proper grammar/punctuation, complete with greeting and salutation (I’m not fluent in “text talk” and it’s disrespectful to not sign on and off of email communications), (3) expect responses Monday-Friday between 9:00am and 5:00pm, with a potential 48-hour time lag, and (4) check the syllabus or D2L before asking questions. Not following these guidelines may result in my not answering your email.

Class Etiquette: Use of electronic devices for reasons unrelated to class (texting, internet browsing, phone calls, etc) disrupts the learning environment and will not be tolerated. Points will be deducted from your class participation points for any of these distractions (2 pts for the first occurrence, 4 points for the second, 6 points for the third) and students may be asked to leave the class or lab.

Grading policies: If you have questions about how I have graded an assignment, then you need to provide me with a short written description of the problem you perceive explaining the problem in light of the correct answers I provide. If the problem is that I could not read nor understand what you have written then you are unlikely to receive an adjustment to your grade. If I have simply added your points incorrectly, you do not need to provide a written statement. Regrade requests must be submitted to the instructor within two days of when the exam/assignment is returned. Requests should be submitted in my office during office hours, or by appointment.

Attendance: Attendance in lecture may be recorded periodically throughout the semester. There is a tremendous amount of material covered in the course, and a student’s overall success in learning the
material depends on their attendance. Lectures may not follow the text exactly. I will tend to be more
generous with grading for students who have attended lectures consistently, especially if they also ask
questions and participate in discussion. Sleeping and use of cell phones in class will not be tolerated and will
be considered a class absence.

Make-up Policy: **Students are required to attend all scheduled lab sessions and exams.** Taking an exam
outside of class will only be allowed under extraordinary circumstances and in accordance with Westminster
College polices (see Undergraduate Catalogue). If you know ahead of time that you cannot make a scheduled
exam (e.g. sporting event, funeral) you MUST notify me at least 1 week in advance in writing (i.e. email). If
you are gravely ill the day of the exam, you must provide a doctor’s note within 24 hours of your discharge.
The make-up exam must be taken within 48 hours of your return to campus. Any requests to make up the
missed exam due to a medical or family emergency and is made 48 hours after the exam or discharge from a
medical facility will not be tolerated.

Labs are required for the entire duration of the lab (2-5 pm). You MUST notify me in writing of any absence
from a lab for a college-sponsored activity (at least 1 week in advance) or a medical/ immediate family
emergency (with proper documentation). The student is responsible for identifying an alternate lab section
for make-up during the same week and contact the instructor of that lab section (please CC me on the email).
If a student fails to identify a conflict and/or does not make arrangements for a make-up lab, the student will
either receive a zero (e.g., worksheet lab & lab notebook score (5 points)) or be penalized for each lab missed
in research modules (e.g., 20 points subtracted from their lab notebook score on that module for each lab
missed). Any requests to make up a lab due to a medical emergency or family emergency and is made 48
hours after discharge from a medical facility (with documentation) will not be honored.

Assignment policy: The ability to meet and manage work deadlines in light of other responsibilities is a
critical component of professionalism. Any assignments handed in after the due date and without a college-
approved excuse will be penalized 5% of the total points possible for each day late (1 minute late = 1 day
late). No late work will be accepted after 72 hours following the assignment due date, unless arranged
privately with the professor.

Academic Standards and Integrity: No form of academic dishonesty will be tolerated. Students enrolled in
*BIO202* are expected to abide to the “Academic Integrity Undergraduate Pledge”. The definitions and
penalties for violations of academic integrity apply to this course (see *Westminster College Undergraduate
Catalog*). No form of academic dishonesty will be tolerated; practice of plagiarism or any other form of
academic dishonesty will result in a grade of zero for the assignment and formal notification of the offense to
the Dean of the College. Repeat violations of the integrity policy will result in a grade of F for the course and
potentially, suspension and expulsion from the College. This is especially important when dealing with
scientific writing. In the sciences, one rarely quotes text from a source. Thus, all descriptions, evaluations,
and discussions must be in your own words. The ideas that you write about should be attributed to the
original author at all times. Written labs and assignments will be scrutinized regularly using turnitin.com that
compares submitted work against and existing database.

Accessibility Statement: Westminster College actively strives for the full inclusion of all our students.
Students with disabilities who require access solutions for environmental or curricular barriers should contact
Faith Craig, Director of Disability Resources, located in 209 Thompson-Clark Hall. phone: 724-946-7192 e-
mail: craigf@westminster.edu. Students requiring disability accommodations must meet with me in person
within 1 week of the start of the semester and provide documentation (both hard & electronic copies).