



Oregon State University

Ecampus

Course Name: Introductory Biology III

Course Number: BI 206

Credits: 4 Credits

Prerequisites, co-requisites: previous or concurrent enrollment in (CH 121* or CH 201* or CH 221* or CH 224H*) or ((CH 231* or CH 231H*) and (CH 261* or CH 261H* or CH 271*))

Course Description

This introductory biology course will review basic plant and animal physiology from an evolutionary perspective. Topics of emphasis will include those of great importance to human society, including human and plant disease. The companion laboratory will reinforce general course content while cultivating student skills in critical thinking, scientific writing, and experimental design. Students will receive lab kits in the mail and perform some experiments in their own homes.

Catalog description: BI 206. INTRODUCTORY BIOLOGY III (4).

Basic plant and animal physiology from an evolutionary perspective. Significant emphasis on topics of importance to human society, including human and plant disease. Laboratory emphasizes skills in critical thinking, scientific writing, and experimental design. Not intended for pre-health professional students. Lec/lab. (Bacc Core Course) **PREREQS:** CH 121* or CH 201* or ((CH 231* or CH 231H*) and (CH 261* or CH 261H* or CH 271* or CH 271H*))

Communication

Please post all course-related questions in the General Discussion Forum so that the whole class may benefit from our conversation. Please email your instructor for matters of a personal nature. The instructor will reply to course-related questions and email within 24-48 hours.

Course Credits

This course combines approximately 120 hours of instruction, online laboratories, and assignments for 4 credits.

Technical Assistance

If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the [OSU Computer Helpdesk](#) online.

Course Information

Basic plant and animal physiology from an evolutionary perspective. Significant emphasis on topics of importance to human society, including human and plant disease. Laboratory emphasizes skills in critical thinking, scientific writing, and experimental design. Not intended for pre-health professional students. Lec/lab.

Learning Resources

1. Biology: How Life Works. Morris, Hartl, Knoll and Lue. 2013 Freeman Macmillan Publishing (ISBN-10: 1-319-03238-9 or ISBN-10: 1464179298, or ISBN-10: 1-319-03231-1)
2. Launchpad (Purchased as a package with "How Life Works").
3. A Student Handbook for Writing in Biology. Knisley. 2013 Sinauer Associates Inc. (ISBN-978-1-4641-5076-0)
4. Lab Kit from Carolina Biological. You will purchase a code from the bookstore and then use it to order your kit directly from Carolina Biological. The kit will be shipped to your home.
5. Calibrated Peer Review. You will receive account information via email with registration for the course.

Note to prospective students:

Please check with the OSU Bookstore for up-to-date information for the term you enroll (<http://osubeaverstore.com/Academics> or 800-595-0357). Packages of these materials are available **ONLY** from the OSU bookstore. You may choose to purchase an e-text, loose-leaf text, or hard cover text in different bundles available at the OSU bookstore.

Canvas

This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site you will access the learning materials, such as the syllabus, class discussions, assignments, projects, and quizzes. To preview how an online course works, visit the [Ecampus Course Demo](#). For technical assistance, please visit [Ecampus Technical Help](#).

Baccalaureate CORE learning objectives:

This course fills the Perspectives category of Biological and Physical Sciences.

Students will:

1. Recognize and apply concepts and theories of basic physical or biological sciences.
2. Apply scientific methodology and demonstrate the ability to draw conclusions based on observation, analysis, and synthesis.
3. Demonstrate connections with other subject areas

Course specific learning objectives:

By the end of this course, students will be able to:

1. Explain how basic units of structure define the function of all living things (BACC Core Objective 1).
2. Explain how evolution by natural selection is the driving force aligning structure and function in plants and animals (BACC Core Objective 1).
3. Compare and contrast plant and animal physiology (BACC Core Objective 1).
4. Describe how plant physiology is manipulated for agricultural systems (BACC Core Objective 1 & 3).
5. Explain how animals maintain homeostasis using different organ systems (BACC Core Objective 1).
6. Summarize the major diseases affecting humans and agricultural systems (BACC Core Objective 1 & 3).
7. Apply principles of evolutionary biology to solve problems in human health and agricultural systems (BACC Core Objective 1, 2 & 3).
8. Apply the process of science; including making observations, developing hypotheses, making predictions, and designing simple experiments to test predictions (BACC Core Objective 1, 2 & 3).
9. Demonstrate ability to use quantitative reasoning as part of the scientific process (BACC Core Objective 2).
10. Effectively communicate scientific results in written form and evaluate the writing of their peers (BACC Core Objective 1, 2 & 3).
11. Evaluate the implications of plant and animal physiology for human society (BACC Core Objective 1, 2 & 3).

Evaluation of student performance

| Assessments | Points | Total points |
|-------------------------------------------|-----------------|---------------------|
| Exams | 3 x 100 | 300 |
| Weekly homework / discussion board | 20 x 4.5 | 90 |
| Quizzes | 8 x 7.5 | 60 |
| <u>Laboratory</u> | | |
| Weekly assignments | 10 x 7.5 | 75 |
| Calibrated Peer Review | 3 x 25 | 75 |
| TOTAL | | 600 |

Grades:

| Percentage | Grade |
|-------------------|--------------|
| 91% | A |
| 90% | A- |
| 80% | B- |
| 70% | C- |
| 60% | D- |
| <60% | F |

Course Content

| Week | Topic | Reading Assignments Quizzes, and Exams | Lab activity |
|------|-------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1 | Introduction & Orientation- Evolution of multi-cellularity in plants and animals | How Life Works: Chapter 28 Quiz 1 | Experimental design Lettuce plants |
| 2 | Plant structure and function / Reproduction | How Life Works: Chapter 29 and 30 Quiz 2 | Calibrated Peer Review Assignment 1 Begin plant hormone experiments Lettuce plants |
| 3 | Reproduction continued / Plant growth and development | How Life Works: Chapter 31 Midterm I | Field trip to the supermarket Plant anatomy and virtual microscopy |
| 4 | Plant defenses | How Life Works: Chapter 32 Quiz 3 | Finish lettuce plants experiments Plant secondary metabolites and human use case study |
| 5 | Nervous system / Endocrine system | How Life works Chapter 35 and 38 Quiz 4 | Calibrated Peer Review Assignment 2 Virtual nervous system and “fight or flight” lab exercise |
| 6 | Cardiovascular and Respiratory system | How Life Works Chapter 39 Quiz 5 | Exercise and the cardiopulmonary system Human genome and personalized medicine |

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|---------------|-------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 7 | Nutrition / Renal system | How Life Works Chapter 40 and 41 Midterm II | Human nutrition case study and personal nutrition log Human genome and personalized medicine |
| 8 | Reproductive / Immune system | How Life Works Chapter 42 and 43 Quiz 6 | The hygiene hypothesis and human autoimmune disease |
| 9 | Human and plant disease | Supplemental reading Quiz 7 | Calibrated Peer Review Assignment 3 Medical applications of phylogeny---infections, HIV and cancer |
| 10 | Evolutionary Medicine and Darwinian Agriculture | Supplemental reading Quiz 8 | Artificial selection for community level traits over individual competitiveness in agriculture |
| Finals | | Final Exam | |

Course Policies

Discussion Participation

Students are expected to participate in all graded discussions. While there is great flexibility in online courses, this is not a self-paced course. You will need to participate in our discussions on at least two different days each week, with your first post due no later than Wednesday evening, and your second and third posts due by the end of each week.

Makeup Exams

Makeup exams will be given only for missed exams excused in advance by the instructor. Excused absences will not be given for airline reservations, routine illness (colds, flu, stomach aches), or other common ailments. Excused absences will generally not be given after the absence has occurred, except under very unusual circumstances.

Exam Time Limits

Exams in this class are timed; if you exceed the time limit on an exam, you will be assessed a penalty of 10% for every five minute interval beyond the time limit.

Grading appeals

We are happy to fix any errors or irregularities in grades. If you feel that there was an error in grading your quiz or assignment you must submit your request in writing (email), detailing which questions you feel are in error and why your answer(s) should receive additional credit. For instance, if there is information in the textbook or other course materials that supports your answer, quote the information and provide the page and paragraph number. If you believe that your Calibrated Peer Review score is lower than it should be because of errors made by peers in reviews of your work or because of errors in the instructions or calibration rubric, you may appeal your score. To appeal, provide a written justification for each of your answers in an email to Dr. Bouwma. All requests must be submitted in an email to Dr. Bouwma within 1 week of the posting of the answer key or the return of the assignment to be considered.

Incompletes

Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the points possible (in other words, usually everything but the final paper). If you are having any difficulty that might prevent you completing the coursework, please don't wait until the end of the term; let me know right away.

Guidelines for a Productive and Effective Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university's regulations regarding civility.

Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Statement Regarding Students with Disabilities

Accommodations are collaborative efforts between students, faculty and [Disability Access Services \(DAS\)](#) with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4098.

Accessibility of Course Materials

All materials used in this course are accessible. If you require accommodations please contact [Disability Access Services \(DAS\)](#).

Additionally, Canvas, the learning management system through which this course is offered, provides a [vendor statement](#) certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct

Student conduct is governed by the university's policies, as explained in the [Office of Student Conduct](#).

Academic Integrity

Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit [Avoiding Academic Dishonesty](#), or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.

b) It includes:

(i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

(ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

(iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

(iv) TAMPERING - altering or interfering with evaluation instruments or documents.

(v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Conduct in this Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the [university's policy on disruptive behavior](#).

Tutoring

[NetTutor](#) is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.

OSU Student Evaluation of Teaching

Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to "Student Online Services" to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.