BIOL134 16

Course Summary

Course : BIOL134 **Title :** General Biology II with Lab
Length of Course : 16
Prerequisites : BIOL133 **Credit Hours :** 4

Description

Course Description: This course is the second in a two part biology series that is designed for students who intend to complete a degree that requires a majors-level biology course. Topics included in this course diversity of life on Earth, plant form and function, animal form and function, and ecology and behavior. The laboratory portion of this course will include hands-on as well as virtual laboratories that complement the topics and concepts covered in the lecture component. As part of the hands-on laboratory component, students are required to perform dissection of preserved animal specimens. Some of the laboratory activities require the use of glass or sharp laboratory instruments; therefore students must have a safe work area available to perform laboratory activities. Students must also have room temperature storage available in order to maintain laboratory materials and specimens. In addition, students must be able to document their laboratory work using still pictures and/or video. NOTE: This course requires the student to purchase additional materials that are not covered by the book grant. Please refer to the Course Materials section for additional details. (Prerequisite: BIOL133)

Course Scope:

This course is the second in a two part biology series that serves as an introduction to biology and will include the following specific modules: Part V: (continues from the first course) fungi, animal diversity, protostomes, and deuterostomes. Part VI: plant forms, transport in plants, plant defense responses, sensory systems in plants, and plant reproduction. Part VII: animal body and principles of regulation and selected organ system reviews. Part VII: behavioral biology, ecology of individuals and populations, community ecologies, dynamics of ecosystems, the biosphere and conservation biology. In addition to the lecture material, this course will contain both hands on and online laboratories that will enhance and supplement the readings.

Objectives

After successfully completing this course, you will be able to:

- **CO-1:** Recognize the diversity of life including common structures, functions and development of protists, fungi, plants and animals.
- **CO-2**: Recognize the ubiquity of the structure and function relationship as an organizing pattern of

biological systems
- **CO-3**: Explain plant structure and the basic mechanisms of plant physiology
- **CO-4**: Explain the role and function of the nervous, endocrine and musculoskeletal systems in animals
- **CO-5:** Explain the role and function of the digestive and respiratory systems in animals
- **CO-6:** Explain the role and function of the circulatory and immune systems in animals
- **CO-7**: Explain the role and function of the reproductive system and animal development
- **CO-8**: Describe how organisms behave, interact and form populations and communities in nature.
- **CO-9**: Explain the major ecosystems, how their biodiversity interacts with abiotic factors and why these organisms need to be protected
- **CO-10**:Use basic scientific practices: math, graphing, writing, critical thinking, data collection and data analysis

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Outline

Week 1: Chapter 21: Viruses, Chapter 22: Prokaryotes: Bacteria and Archaea

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Learning Objectives

CO-1

CO-2

Readings

OpenStax Biology, 2e

- Ch 21 & Ch 22

Lab

Lab Assignmenet 1 - Lab Safety

Deliverables

Forum 1

Lab Assignment 1 - Lab Safety

Week 2: Chapter 23: Protists, Chapter 24: Fungi

Learning Objectives

CO-2

Readings

OpenStax Biology, 2e

- Ch 23 & Ch 24

Lab

Begin Lab Assignment 2 - Hierarchies of Life

Deliverables

Forum Week 2

Week 3: Chapter 25: Seedless Plants, Chapter 26: Seed Plants

Learning Objectives

CO-2

CO-3

Readings

OpenStax Biology, 2e

- Ch 25 & Ch 26

Lab

Complete Lab Assignment 2 - Hierarchies of Life

Deliverables

Forum Week 3

Lab Assignment 2 - Hierarchies of Life

Week 4: Chapter 27: Introduction to Animal Diversity

Learning Objectives

CO-1

CO-2

Readings

OpenStax Biology, 2e

- Ch 27

Lab

Begin Lab Assignment 3 - Unicellular Organisms

Deliverables

Forum Week 4

Exam 1: Weeks 1-4

Week 5: Chapter 28: Invertebrates, Chapter 29: Vertebrates

Learning Objectives

CO-1

CO-2

Readings

OpenStax Biology, 2e

- Ch 28 & Ch 29

Lab

Complete Lab Assignment 3 - Unicellular Organisms

Deliverables

Forum Week 5

Lab Assignment 3 - Unicellular Organisms

Week 6: Chapter 30: Plant Form and Physiology, Chapter 31: Soil and Plant Nutrition

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Learning Objectives

CO-2

CO-3

Readings

OpenStax Biology, 2e

- Ch 30 & Ch 31

Lab

Begin Lab Assignment 4 - Plant Reproduction

Deliverables

Forum Week 6

Experiment Design Plan

Week 7: Chapter 32: Plant Reproduction, Chapter 33: The Animal Body: Basic Form and Function

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Learning Objectives

CO-2

CO-3

Readings

OpenStax Biology, 2e

- Ch 32 & Ch 33

Lab

Complete Lab Assignment 4 - Plant Reproduction

Deliverables

Forum Weeks 7 & 8

Lab Assignment 4 - Plant Reproduction

Week 8: Chapter 34: Animal Nutrition and the Digestive System

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Learning Objectives

CO-2

CO-5

Readings

OpenStax Biology, 2e

- Ch 34

Lab

Begin Lab Assignment 5 - Invertebrates

Deliverables

Exam 2: Weeks 5-8

Forum Weeks 7 & 8

Week 9: Chapter 35: The Nervous System, Chapter 36: Sensory Systems

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Learning Objectives

CO-2

CO-4

Readings

OpenStax Biology, 2e

- Ch 35 & Ch 36

Lab

Complete Lab Assignment 5 - Invertebrates

Deliverables

Forum Week 9

Lab Assignment 5 - Invertebrates

Week 10: Chapter 37: The Endocrine System, Chapter 38: The Musculoskeletal System

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Learning Objectives

CO-4

Readings

OpenStax Biology, 2e

- Ch 37 & Ch 38

Lab

Begin Lab Assignment 6 - Vertebrates

Deliverables

Forum Week10

Week 11: Chapter 39: The Respiratory System, Chapter 40: The Circulatory System

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Learning Objectives

CO-5

CO-6

Readings

OpenStax Biology, 2e

- Ch 39 & Ch 40

Lab

Complete Lab Assignment 6 - Vertebrates

Deliverables

Forum Weeks 11 & 12

Lab Assignment 6 - Vertebrates

Week 12: Chapter 41: Osmotic Regulation and Excretion

Learning Objectives

CO-5

Readings

OpenStax Biology, 2e

- Ch 41

Lab

Begin Lab Assignment 7 - Zoology

Deliverables

Exam 3: Weeks 9-12

Forum Weeks 11 & 12

Week 13: Chapter 42: The Immune System, Chapter 43: Animal Reproduction and Development

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Learning Objectives

CO-6

CO-7

Readings

OpenStax Biology, 2e

- Ch 42 & Ch 43

Lab

Complete Lab Assignment 7 - Zoology

Deliverables

Forum Week 13

Lab Assignment 7 - Zoology

Week 14: Chapter 44: Ecology and the Biosphere, Chapter 45: Population and Community Ecology

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Learning Objectives

CO-8

CO-9

Readings

OpenStax Biology, 2e

- Ch 44 & Ch 45

Lab

Begin Lab Assignment 8 - Ecological Interactions

Deliverables

Forum Week 14

Experiment Report Due

Week 15: Chapter 46: Ecosystems

Learning Objectives

CO-7

Readings

OpenStax Biology, 2e

- Ch 46

Lab

Complete Lab Assignment 8 - Ecological Interactions

Deliverables

Forum Weeks 15 & 16

Lab Assignment 8 - Ecological Interactions

Week 16: Chapter 47: Conservation Biology and Biodiversity

Learning Objectives

CO-7

Readings and Labs

OpenStax Biology, 2e

- Ch 47

Lab

No lab this week.

Deliverables

Forum Weeks 15 &16

Exam 4: Weeks 13 - 16

Evaluation

Reading Assignments: There are weekly readings as described in the course outline, below. These readings are based out of the text, or will be provided to students within the resource tab in the electronic classroom.

Forum Assignments: Forum participation is required every single week of this course. Forum topics will be posted within the forum section of the class. Participation is mandatory and vigorous interaction is required. The posting requirements for these forums can be found in the forum description. Students will be evaluated by the instructor with grading guidelines attached to the forum description each week. Forums will be worth 100 points each.

Exams: There will be four exams throughout this course, during Weeks 4, 8, 12 and 16. Different exams will be weighted differently depending upon the number of chapters covered. The exams will mostly include questions in multiple formats, including multiple choice as well as short answer.

- Exam 1 will cover seven chapters and be worth 100 points.
- Exam 2 will cover seven chapters and be worth 100 points.
- Exam 3 will cover seven chapters and be worth 100 points.
- Exam 4 will cover six chapters and worth 100 points. Therefore, Exam 4 will not be cumulative.

Course Project: The Course Project is designed to focus the student on experimental design. As future scientists, the Course Project will entail designing an experiment using their Vernier instrumentation gas

pressure sensor. The students will present the result of their research in an experiment report. The Experiment Design will be due Week 7 and the Course Project Experiment Report will be due Week 15. The Course Projects will be shared to the class Week 16 in the forum, and students will be asked to comment on the experiments.

Laboratories: The laboratories will mostly consist of hands-on lab experiments that will be sent to the student within a kit. There will also be internet based exercises that will apply the concepts learned in the course.

Please see the Student Handbook to reference the University's grading scale.

Grading:

Name	Grade %

Materials

Book Title: BIOL134 Gen Bio eScience Kit, 2nd ed.

Author: eScience

Publication Info: eScience

ISBN: 1710

Book Title: Various resources from the APUS Library & the Open Web are used. Please visit http://apus.libguides.com/er.php to locate the course eReserve.*

Author:

Publication Info:

ISBN: ERESERVE NOTE

Book Title: Until further notice, eScience kits will ship without any action needed from students. Your shipping address on file must be current - https://apus.libanswers.com/coursematerials/faq/238652

Author:

Publication Info:

ISBN: eScience Note

Book Title: If you received a kit for a previous registration, a 2nd kit will not be provided. Please contact ecm@apus.edu for any questions.

Author:

Publication Info:

ISBN: eScience Note 2

Book Title: Gas Pressure Sensor - This item is not covered by the APUS Book Grant; available to purchase here: http://www.vernier.com/products/apus/

Author:

Publication Info: Vernier Software & Technology, LLC

ISBN: GPS-BTA

Book Title: LabQuest 2 - This item is not covered by the APUS Book Grant; available to purchase here: http://www.vernier.com/products/apus/

Author:

Publication Info: Vernier Software & Technology, LLC

ISBN: LABQ2

Book Title: LoggerPro 3 Software - This item is not covered by the APUS Book Grant; available to purchase here: http://www.vernier.com/products/apus/

Author:

Publication Info: Vernier Software & Technology, LLC

ISBN: LP

Book Title: Additional required items are available to order from the APUS Bookstore. If you buy these items from other vendors, you may not receive all the parts you need for your course. These items (as noted) are not covered by the APUS Book Grant.

Author: N/A

Publication Info: N/A

ISBN: N/A

Book Title: Bio Principles 1st ed - available online, link provided inside the classroom

Author: OpenStax

Publication Info: OpenStaxCollege

ISBN: NTMO

Book Title: Stainless Steel Temperature Probe - This item is not covered by the APUS Book Grant; available to purchase here: http://www.vernier.com/products/apus/

Author:

Publication Info: Vernier Software & Technology, LLC

ISBN: TMP-BTA

Required Technology

- See the Technology Requirements section of the undergraduate catalog for the minimum hardware and software requirements.
- Microsoft Office 365 is available to APUS students for free. To sign up, visit http://products.office.com/en-us/student. If you have questions about accessing the software, please contact Classroom support at classroomsupport@apus.edu.

Web Sites

In addition to the required course texts, the following public domain web sites are useful. Please abide by the university's academic honesty policy when using Internet sources as well. Note web site addresses are subject to change.

Site Name	Web Site URL/Address
Crash Course in Biology	http://www.youtube.com/course?list=EC3EED4C1D684D3ADF
Science Friday	http://www.sciencefriday.com/topics/biology.html#page/bytopic/1
BioSciEdNet	http://www.biosciednet.org/portal/index.php
Click and Learn	Howard Hughes Institute free mobile app, for use on iPhones and iPads only
KhanApp	Khan Academy free mobile app, for use on all smart phones

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Course Guidelines

Citation and Reference Style

- Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

Tutoring

- Tutor.com offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours* of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for 'Tutor' to create an account.

Late Assignments

- Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. The due date for each assignment is listed under each Assignment.
- Generally speaking, late work may result in a deduction up to 15% of the grade for each day late, not to exceed 5 days.
- As a working adult I know your time is limited and often out of your control. Faculty may be more flexible if they know ahead of time of any potential late assignments.

Turn It In

- Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. This is automatically processed through the Assignments area of the course.

Academic Dishonesty

- Academic Dishonesty incorporates more than plagiarism, which is using the work of others without citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

Submission Guidelines

- Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

Disclaimer Statement

- Course content may vary from the outline to meet the needs of this particular group.

Communicating on the Forum

- Forums are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the forum. The purpose of the forums is to actively participate in an on-going discussion about the assigned content.
- “Substantive” means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says “I agree” is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

Identity Verification & Live Proctoring

- Faculty may require students to provide proof of identity when submitting assignments or completing assessments in this course. Verification may be in the form of a photograph and/or video of the student’s face together with a valid photo ID, depending on the assignment format.
- Faculty may require live proctoring when completing assessments in this course. Proctoring may include identity verification and continuous monitoring of the student by webcam and microphone during testing.

University Policies

Student Handbook

- Drop/Withdrawal policy

- Extension Requests
- Academic Probation
- Appeals
- Disability Accommodations

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.