

Course Change Request

New Course Proposal

Date Submitted: 11/17/20 10:47 am

Viewing: **BIOL 102 : Introductory Biology I-Survey of Biodiversity and Ecology**

Transfer Course(s): BIOL U102

Last edit: 11/17/20 10:47 am

Changes proposed by: dpolayes

Are you completing this form on someone else's behalf?

No

Effective Term: Fall 2021

Subject Code: BIOL - Biology

Course Number: 102

Bundled Courses:

Is this course replacing another course? No

Equivalent Courses:

Catalog Title: Introductory Biology I-Survey of Biodiversity and Ecology

Banner Title: Introductory Biology I

Will section titles vary by semester? No

Credits: 4

Schedule Type: Lecture w/Lab

In Workflow

1. **BIOL Undergraduate Representative**
2. **SC Curriculum Committee**
3. SC Associate Dean
4. Assoc Provost- Undergraduate
5. Registrar-Courses
6. Banner

Approval Path

1. 11/17/20 10:53 am
Geraldine Grant
(ggrant1): Approved for BIOL Undergraduate Representative

Hours of Lecture or Seminar per week: 3

Hours of Lab or Studio per week: 3

Repeatable: May be only taken once for credit, limited to 3 attempts (N3) **Max Allowable Credits:** 12

Default Grade Mode: Undergraduate Regular

Recommended Prerequisite(s):

Recommended Corequisite(s):

Required Prerequisite(s) / Corequisite(s) (Updates only):

Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):

And/Or	(Course/Test Code	Min Grade/Score	Academic Level)	Concurrency?

Registration Restrictions (Updates only):

Registrar's Office Use Only - Registration Restrictions:

Field(s) of Study:

Class(es):

Level(s):

Degree(s):

School(s):

Catalog Description:

This survey course introduces students to the evolution of biological diversity on Earth and explores how organisms interact with each another and their environment. Topics include the domains of life, how new

species arise, evolution of populations and major topics in ecology and conservation. Survey course suitable for any major. Biology majors may not take after BIOL 200-level or above courses have been taken.

Justification:

BIOL102 groups together key topics on evolution, biodiversity, ecology and conservation that were previously presented in both BIOL103 and BIOL106/107. The name of the course reflects the topics presented, and so will facilitate programs and advisors directing students to the correct introductory biology course. The new topic grouping also helps students make the connection between the evolution of diversity and current societal challenges, thus bringing the class into even better alignment with the goals of the Mason Core Natural Science program. Removal of some topics on human anatomy and physiology improves the introductory biology courses by decreasing the overlap with BIOL124/125 and allowing the introductory biology courses to be a more coherent presentation of material geared toward non-majors.

Does this course cover material which crosses into another department? No

Learning Outcomes:

Biology 102 is an approved Mason Core Natural Science course with a laboratory experience. The Mason Core natural sciences courses engage students in scientific exploration; foster their curiosity; enhance their enthusiasm for science; and enable them to apply scientific knowledge and reasoning to personal, professional, and public decision-making.

To fulfill the requirements of the Mason Core program, students in BIOL 102 will

1. Understand how scientific inquiry is based on investigation of evidence from the natural world, and that scientific knowledge and understanding: a) evolves based on new evidence, and b) differs from personal and cultural beliefs.
2. Recognize the scope and limits of science.
3. Recognize and articulate the relationship between the natural sciences and society and the application of science to societal challenges (e.g., health, conservation, sustainability, energy, natural disasters, etc.).
4. Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).
5. Participate in scientific inquiry and communicate the elements of the process, including: a) making careful and systematic observations, b) developing and testing a hypothesis, c) analyzing evidence, and d) Interpreting results.

It is the instructors' aim that we enable our students to achieve these goals!

Attach Syllabus

[New-102-Syll-Fall2021.pdf](#)

Additional Attachments

[newNSLmap-BIOL102.pdf](#)

Staffing:

No new staff is needed since this is replacing our BIOL106/107 which will be deactivated

**Relationship to
Existing Programs:**

This course will give the students a broad appreciation of the diversity of life on this planet. Many programs use the Biology sequence for their natural science requirement. The new BIOL102 will give the students a broader understanding.

**Relationship to
Existing Courses:**

This is a simplified version of BIOL300 which is a biology majors course. This course is designed for non-majors to increase their general knowledge of biology and make them more informed citizens.

**Additional
Comments:**

This course will be part of the Mason Core for the Natural Sciences with lab.

**Reviewer
Comments**

Key: 17025

BIOLOGY 102: Introductory Biology I

Survey of Biodiversity and Ecology

Fall 2021 COURSE SYLLABUS

LECTURE INSTRUCTORS

001
002
etc

LAB INSTRUCTORS are listed in your lab syllabus (posted on lab blackboard)

COURSE COORDINATOR

Dr. E. Epstein
Exploratory Hall Room 2219
e-mail: eepstei@gmu.edu

REQUIRED TEXTS AND ACCESS CODE

Lecture Text or e-Text: Shuster, Vigna, and Tontonoz. 2018. *Scientific American Biology for a Changing World*. 3rd edition. Macmillian Learning, New York.

e-text Lab Manual: Epstein and Luther. 2020. *Introductory Biology for Non-majors Laboratory Manual BIO 103*. 4th Edition Hayden-McNeil Publishing, Inc., Plymouth MI.

Note: you must have the 4th edition of this lab manual, which is only sold as an e-text, for Fall2021.

Online Homework: More details below and from your instructor.

REQUIRED TECHNOLOGY FOR THIS COURSE adapted from the Stern Center

Blackboard Access. You'll need your Mason username (NetID) and password to access Blackboard. Log in to mymason.gmu.edu and select the Courses tab to locate your course. Blackboard Mobile App can help you keep track of your online courses using your mobile device.

Check your Internet Connection. To complete and turn in your assignments and other online activities, you will need consistent basic wireless or cellular connection at your home or study site.

We use an **online homework management system** for graded assignments in this course. You will be using this tool to access learning activities, do homework assignments, and take online quizzes. If you purchased your books from the GMU bookstore, it comes packaged with an access code for the homework website. If you purchased a used text or purchased your text from another source, you will need to purchase access to the homework separately. It is possible to purchase a subscription separately, but you will need it for the graded homework assignments. **Information and instructions for accessing homework will be provided by your instructor.**

BIOL 102 – DESCRIPTION, GOALS, AND LEARNING OBJECTIVES:

Biology 102 is an approved Mason Core Natural Science course with a laboratory experience. **The Mason Core natural sciences courses engage students in scientific exploration; foster their curiosity; enhance their enthusiasm for science; and enable them to apply scientific knowledge and reasoning to personal, professional, and public decision-making.**

To fulfill the requirements of the Mason Core program, students in BIOL 102 will

1. Understand how scientific inquiry is based on investigation of evidence from the natural world, and that scientific knowledge and understanding: a) evolves based on new evidence, and b) differs from personal and cultural beliefs.
2. Recognize the scope and limits of science.

3. Recognize and articulate the relationship between the natural sciences and society and the application of science to societal challenges (e.g., health, conservation, sustainability, energy, natural disasters, etc.).
4. Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information).
5. Participate in scientific inquiry and communicate the elements of the process, including: a) making careful and systematic observations, b) developing and testing a hypothesis, c) analyzing evidence, and d) Interpreting results.

It is the instructors' aim that we enable our students to achieve these goals!

It is strongly recommended that students successfully complete this course prior to taking BIOL 106 or BIOL 107.

The Introductory Biology courses provide students with an understanding of, and appreciation for, the many facets of the biological world. **Biology 102 begins with an introduction to the scientific method and the core concept of evolution. We then look at diversity of life on earth. After a brief look at how new species arise, we then go on to a study of evolution of populations; and finally, a deeper look at ecology and conservation.** The laboratory exercises are designed to illustrate and expand on lecture topics. Because this class fulfills (in part) the Mason Core Natural Science with Lab requirement, students must be enrolled in both a laboratory and lecture section. No credit will be awarded to students who are not appropriately enrolled by the official deadlines.

Course Policies

GMU e-mail: All George Mason students are issued an e-mail account. **Email communications with this online class will be completely conducted through your GMU email account.**

GMU ID cards: All students are issued a GMU photo ID card. Please have this ready and available during exams to verify your identity. Instructors are not required to honor identification cards other than those issued by the University.

ATTENDANCE: Regular attendance in both laboratory and lecture is crucial to successful completion of this course. Studies have shown that students who attend each class perform far better than those whose attendance is irregular. Students are expected to attend all class sessions. Many interesting, subtle and valuable points can be presented in class, which may not be presented in the text. **Therefore, students are responsible for being aware of all information and announcements presented in person or in online class recordings, announcements, and emails. Note for Online Courses:** Online classes offer students flexibility in planning much of their own schedule, but be careful not to fall behind: Plan on doing the same amount of work as is required for a face-to-face class.

Check your email and Blackboard Announcements regularly & often. Your instructor will be sending you updates, announcements, and reminders. Update notifications on Blackboard so you're always up-to-date.

Students are also responsible for being sure they are properly enrolled in the course. If a student drops the course, he or she must see to the paperwork him or herself, and in a timely fashion. Instructors will not "automatically" drop a student who merely stops coming to class.

Special note on Laboratory Assignments: exercises in the laboratory build on each other over the course of the semester. **There are no due date extensions possible.** Be aware that failure to complete one lab may negatively impact your ability to complete other, later assignments! Missed lab assignments will be given the grade of "0", and there are no make-up assignments. **Three or more missed assignments in lab will result in a grade of zero for the entire laboratory portion of the course.**

STUDENTS WITH DISABILITIES: Both lab and lecture instructors are happy to make arrangements with students with disabilities. These arrangements, however, **must** be made through the Office of Disability Services (ODS) at 993-2474. Please contact both the ODS **and** your instructors as soon as possible for any accommodations you might need.

CLASSROOM BEHAVIOR IN PERSON AND ONLINE: If something is not clear to you, by all means, ask questions! A well-timed question can help everyone in class, even the instructor. Students are asked to be respectful and considerate of one another. To that end, when attending an online synchronous session, please mute your mic when you are not speaking. If it is necessary to carry on activities that are not directly related to the material being presented in class, please leave the room or logout of the system, and conduct these activities elsewhere. To make the most effective use of both students'

and instructor's time and energy, disruptive students may be removed from a synchronous session or asked to leave an in-person class. Recordings of synchronous sessions are posted in Blackboard for you to review later.

Use good “[Netiquette](#)” when you are participating and posting in online forums for your course. In discussions and peer reviews in any environment, critique ideas but treat people respectfully & professionally. Remember that tone and humor may be easily misinterpreted by others in online discussions.

CANCELED CLASSES: If an exam is scheduled for a day on which classes are canceled due to weather or any other reason, the exam will be given during the next scheduled class. Call (703) 993-1000 for official notification of canceled classes.

HONOR CODE: Students are required to read and adhere to the George Mason University Honor Code. Ignorance of the Honor Code is no excuse for infractions thereof. The GMU Honor Code is enforced in all Biology courses. All work done in lecture and lab (exams, data sheets, quizzes, etc.) must be the sole work of the individual student whose name appears on the assignment. Copying data, falsifying data, failing to give credit to referenced sources, cheating on exams and quizzes are among violations of the Honor Code, and will be dealt with most seriously.

Important warning regarding online study sites: Some kinds of participation in online study sites violate the Mason Honor code: these include accessing exam or quiz questions for this class; accessing exam, quiz, or assignment answers for this class; uploading of any of the instructor's materials or exams; and uploading any of your own answers or finished work. Always consult your syllabus and your professor before using these sites. **Violators will be reported to the Office of Academic Integrity.**

GRADING Two hourly lecture exams will be given, each worth 150 points. The final exam will be cumulative and worth 250 points. **Absolutely no make-up exams, including the final exam, will be given to any student under any circumstances. Exams for online sections of this course are proctored in Blackboard and Require Respondus Monitor and LockDown Browser.** For these, you will need broadband wireless (or other strong and reliable internet connection) and a **web-camera** as part of your computer or tablet. You must download the LockDown Browser onto your device. More information and the link to download LockDown Browser can be [found on the ITS website here](#). If you have any questions or concerns, please contact the ITS Support Center at 703-993-8870, or via email at support@gmu.edu.

In addition to lecture exams, there will be 10 online homework assignments worth 20 points each. The laboratory is worth 25% of the course total. The percentage score that you earn in lab will be used to calculate your weighted lab total out of 250 points, bringing the course total to 1000 points. The total point breakdown is as follows:

Graded Material	Points	Grade
Midterm Exams (2)	300	980 - 1000 = A+
Online Homework	200	900 - 979 = A 870 - 899 = B+
Laboratory (weighted points)	250	800 - 869 = B
Final Exam	250	770 - 799 = C+
	1000 (course total)	700 - 769 = C 600 - 699 = D

LABORATORY POLICIES

Attendance: Participation is required in each of the 12 lab exercises and is essential for proper understanding of the material. Exercises in the laboratory build on each other over the course of this semester. There are no due date extensions possible. Be aware that failure to complete one lab may negatively impact your ability to complete other, later assignments! Missed lab assignments will be given the grade of “0”, and there are no make-up assignments. **Three unexcused absences from lab will result in a total grade of zero (0) for the entire lab portion of the course grade (a loss of 250/1000 points).**

All Lab Assignments must be submitted online through your Lab Blackboard page. Your instructor will provide you with specific details on how to format assignments for submission. Most lab exercises consist of a **prelab assignment** (5 points) and a **datasheet** (usually 20 points).

Home Lab Activities and Modifications for Online Lab Sections: Lab sections that are online use laboratory activities that have been modified for the online environment. **Each lab exercise has required, hands-on home activities that are mandatory parts of the assignments for online sections of the lab part of the course.** The details for these assignments and activities will be posted regularly in your lab course Blackboard page. The home activities are typically worth 5 points each.

Other Laboratory Assignments: Based on the data that you collect during the third and fourth laboratory exercises you, along with your laboratory partners will research, organize, and give a **presentation** to the rest of the students in your laboratory section. You will be provided with a grading rubric, which the instructor will use to grade your presentation.

Honor Code applies to Lab Assignments: The lab manual and your instructor will indicate when students should conduct experiments, share data or materials as part of a pair or a group. We encourage outside study groups, but pre-lab assignments and lab data sheets *must be written individually and not copied from anyone else*. IF THIS IS NOT CLEAR, ASK THE INSTRUCTOR. IDENTICAL ASSIGNMENTS WILL BE REPORTED TO THE OFFICE OF ACADEMIC INTEGRITY. Instructors will specifically discuss what constitutes plagiarism on written work assigned in this class. If students have any questions about what constitutes plagiarism on any written assignment, they should ask the instructor BEFORE turning in work. Students who submit plagiarized work will be reported to the Office of Academic Integrity.

Lab is worth 25% of the BIOL102 course total. The percentage score that you earn in lab will be used to calculate your weighted lab total out of 250 points.

WHERE TO GET HELP! Biology is a fascinating subject, but one which some students find daunting. If you find yourself having any difficulties in this course, see your instructor (lab, lecture, or both) at the outset. All instructors have posted office hours, during which appointments are not necessary. In addition, many instructors may be able to meet students outside of their posted hours in order to accommodate student schedules. It is the instructors' job to provide all the help they can to students; it is the students' job to ask for individual help when they need it.

Much of the material in Biology 102 builds on material covered previously in the semester, therefore it is necessary to have a good understanding of one concept before moving on to the next. If you feel your understanding is inadequate; if you feel you are getting "lost," **see your instructor immediately!!** We are here to help!

[Many tips for successful learning can be found here.](#) Be proactive and take responsibility for your learning. If you are in a fully online section, your professor may have fewer "clues" about whether or not you understand course content. Reach out to your instructor if there is something that is not clear to you, or if you are having difficulty keeping up with the course. If you are having issues with the technology, let your instructor know and then contact [Courses Support](#) for help.

Learning Services If you need assistance, please contact Learning Services at 703- 993-2380, or via email at lsstaff@gmu.edu. Learning Services offers online [academic coaching](#) and [academic workshops](#), as well as a list of Mason [tutoring](#) resources.

Counseling and Psychological Services Counseling and Psychological Services (CAPS) remains available to provide services to Mason students. Please see CAPS' website for a list of hours and resources. CAPS also offers [virtual workshops](#) focused on healthy coping skills. Contact CAPS at 703-993-2380.

Office of Diversity, Inclusion, and Multicultural Education ODIME offers support to our Mason's diverse student populations, including Asian/Pacific American, Black/African American/African Heritage, Hispanic/Latino(a), Middle Eastern and North African (MENA), and Native American/Indigenous heritages.

Disability Services Disability Services is available to serve all students with disabilities, including those with cognitive, learning, psychological, sustained head injuries, sensory, mobility, and other physical impairments.

Many students find joining study groups with fellow classmates useful and enriching both academically and personally. Learning outside the classroom may be the most important learning of all! Make use of the many rich academic and personal resources that continue to be available at Mason!

Biology 102

Fall 2021 Schedule of Lectures and Labs

Week of Semester	Lecture Topic	Text Chapters in <u>Biology for a Changing World</u> or an <i>Open Educational Resource (OER)</i>	Lab Exercise See Lab Syllabus for all details
Week 1	Scientific Method and the Study of Life	1	Check-In; Safety; # 1 Hypothesis Testing
Week 2	Cells and the Domains of Life	16	# 2 Cell Diversity
Week 3	Animal Diversity	18 + OER supplement	# 3 Animal Diversity
Week 4	Plant Diversity	18 + OER supplement	# 4 Tree Diversity and Phylogeny
Week 5	Intro to Microbial Diversity	17	# Reading and Assessing Data
Week 6	Exam 1		Presentations
Week 7	Speciation	13	#6 Antibiotic Resistance I
Week 8	Evolution of Populations	14	#7 Antibiotic Resistance II
Week 9	Human Evolution	19	#8 Animal Behavior
Week 10	Population Ecology	20	# 9 Competition and Predation
Week 11	Ecology: Communities and Ecosystems	21, 22	#10 Ecosystems & Watersheds part1
Week 12	Exam 2		#11 Ecosystems and Watersheds – Water Quality II
Week 13	Conservation Biology	23	#12 Conservation Biology and the Tragedy of the Commons
Week 14	Wrap Up and Review for Cumulative Final		

Biology 102 Final Exam Dates (from the calendar published by the Registrar):

Instructors are not obligated, and indeed are discouraged from transmitting any type of grades to students via e-mail. Final course grades will be available to students via Patriot Web by the deadline for grade submission as set by George Mason University.