

BIOLOGY 100

Summer 2017

Course Description:

Survey of biology emphasizing present and future relationships of humans to their environment.

Learning Goals:

- Students will explore the amazing and diverse world of life by examining the major themes of biology. Students will address each biological theme by answering a relevant question or a current problem applicable to everyday life.
- Students will examine, synthesize and evaluate biological concepts through inquiry-based laboratory experiments, a course undergraduate research experience, and exploration of dominant themes in biology. This investigation will begin by focusing on the structure and function of life at the chemical, subcellular and cellular levels, continuing with an examination of genetics and the mechanisms of cellular reproduction. Students will explore biodiversity including the evolutionary factors that have led to the form and function of life, and issues affecting biodiversity.
- Students will be able to critically analyze biological concepts in order to make scientifically literate decisions dealing with environmental and ethical issues related to biology and the human experience.

** All of these learning goals will be underscored with the scientific method and based on relevant, inquiry-based science.*



Biological Principles & the Human Environment

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Office hours:

Weekdays 1:00-2:00

Or by appointment

Since this course is entirely online, office hours will be conducted through online room in D2L. Please let me know if you plan on coming to office hours.

A Q&A forum is available on the course homepage of D2L to post general question or send me an email.

Required textbook:

Biology for a Changing World, Second edition, Shuster, Vigna, Tontono, Sinha

Required lab manual:

All lab procedures are available on D2L

Course Structure:

This course will be delivered entirely online through the course management system D2L. You will use your UWSP account to login to the course from the [D2L Login Page](#). If you have not activated your UWSP account, please visit the [Manage Your Account](#) page to do so.

In D2L, you will access online lessons, course materials, and resources. At designated times throughout the semester, we will participate in a blend of self-paced and group-paced

activities using D2L and/or alternative Internet-based technologies. Activities will consist of chat, blogs, discussion forums, email, journaling, blogging, wikis, and web posting.

This course will be delivered partially/fully online through a course management system called D2L.

To access this course on D2L you will need access to the Internet and a supported Web browser (Internet Explorer, Chrome, Firefox, Safari). To ensure that you are using the recommended personal computer configurations, please refer to the [D2L settings link](#).

Technical Assistance:

If you need technical assistance at any time during the course or to report a problem with D2L you can:

- Visit with a [Student Technology Tutor](#)
- Seek assistance from the [HELP Desk](#)

Required Technical Skills & Equipment

- Computer, webcam and internet connection
- Using D2L
- Using email with attachments
- Creating and submitting files in commonly used word processing program formats
- Copying and pasting
- Downloading and installing software
- Using spreadsheet programs (e.g. Excel) – tutorials will be provided
- Using presentation and graphics programs (e.g. PowerPoint)

GEP & Courses Learning Outcomes

GEP & Course Learning Outcomes	Example Class Assignment(s):	Teaching Pedagogy
1. Solve problems by applying the scientific method as it pertains to the natural world and distinguish this process from other ways of knowing.	Identify the basic principles of the scientific method in a case study involving childbed fever. Conduct self-designed, long-term experiments (photosynthesis) applying the principles of the scientific method.	Inquiry Lab Case Study Lecture Oral presentation Videos
2. Infer relationships, make predictions and solve problems by synthesizing content derived from biological principles including: <ul style="list-style-type: none"> ● Cellular level functions necessary for life ● Inheritance & evolutionary change ● The diversity of life within an evolutionary context ● The basic function of populations, communities and ecosystems. 	Infer relationships, make predictions and solve problems based on data dealing with bacterial inhibition and experimental treatments in self-designed experiment	Inquiry Lab Written scientific paper Scientific presentation
3. Evaluate social decision making in light of biological principles,	Evaluate the legitimacy of research in terms of the scientific	Peer evaluation Case study

particularly pertaining to aspects of your daily life and societal issues	method and solve problems involved in five different case studies throughout the semester. Case studies involve current, real-life problems and determining solutions to those problems based on course content.	Independent work Written work
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Grading:

4 Exams (50 points each)	= 200 points
Practice Quiz (12 total @ 10 points each)	=120 points
Assignments (7 total @ 15 points each)	=105 points
Labs & Simulations (10 total @ 20 points each)	=200 points
Case Studies (5 total @ 15 points each)	=75 points
Presentation	=50 points
Hypothesis & Experimental Design	=5 points

Total	= 755 points
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Final grades will be assigned based on the following percentages:

A	= ≥93%	B-	= 80-82%	D+	= 67-69%
A-	= 90-92%	C+	= 77-79%	D	= 60-66%
B+	= 87-89%	C	= 73-76%	F	= < 60%
B	= 83-86%	C-	= 70-72%		

Feedback:

I will attempt to respond to all student questions within 24 hours.
I will attempt to respond to and grade all discussion posts within 48 hours.
I will attempt to grade all labs, Papers, and essay projects within 72 hours.

Exams:

Exams are cumulative but will largely deal with topics covered since the previous exam (80%). Cumulative exams result in longer retention of material (Khanna et al. 2013; Lawrence 2013). Exams will cover assigned textbook readings as well as readings, videos, case studies and lab material. **Make-up exams will be provided only in the case of an acceptable excuse and the discretion of Dr. Slemmons.**

Exams will be available from 6:00am until 11:30 pm on the date listed below. Once you start an exam you will have 60 minutes to complete the test. You will be given a 5 minute grace period at the complete of the time limit and the exam will close.

Exam 1	June 2
Exam 2	June 9
Exam 3	June 16
Exam 4	June 23

Labs:

A lab kit will be mailed to your home address. You do not need to return these items. If you are missing any items or if you need any additional items, please let Dr. Slemmons know. There are a few labs where you will need to supply a few ingredients.. Please look ahead for these labs in order to conduct the lab by the due date (Lab 4: DNA extraction lab, Lab 2: Photosynthesis).

Complete Assignments:

All assignments for this course will be submitted electronically through D2L unless otherwise instructed. Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances. Late assignments will not be accepted and will receive a zero. All assignments are due at **11:30 pm on the due date**.

All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will affect the student's grade.

E-mail:

UWSP students are expected to check their University e-mail regularly for information from the university and/or instructors. If you are using an e-mail account other than your campus account to contact Dr. Slemmons, be sure your full name is included in the message.

Academic Conduct:

All students are expected to follow ethical practices of neither giving nor receiving any unauthorized assistance on their work in this class. Additionally, all students are expected to not divulge the nature or content of any questions or answers on exams to any other student or groups of students. If there are suspected violations of academic misconduct, as defined by the UWSP Chapter 14.03(1) code, then the Chapter 14 policies and procedures will be invoked. See web page at http://www.uwsp.edu/admin/stuaffairs_rights/rightsChap14.pdf for details. Any student that removes an exam from the classroom may be given a failing grade for the course.

Netiquette Guidelines:

Netiquette is a set of rules for behaving properly online. Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Working as a community of learners, we can build a polite and respectful course community.

The following netiquette tips will enhance the learning experience for everyone in the course:

- Do not dominate any discussion.
- Give other students the opportunity to join in the discussion.
- Do not use offensive language. Present ideas appropriately.
- Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
- Popular emoticons such as 😊 or / can be helpful to convey your tone but do not overdo or overuse them.
- Avoid using vernacular and/or slang language. This could possibly lead to misinterpretation.
- Never make fun of someone's ability to read or write.
- Share tips with other students.
- Keep an "open-mind" and be willing to express even your minority opinion. Minority opinions have to be respected.
- Think and edit before you push the "Send" button.
- Do not hesitate to ask for feedback.
- Using humor is acceptable
(Mintu-Wimsatt et al., 2010 & Shea 1994).

Build Rapport:

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that we can help you find a solution.

Understand When You May Drop This Course:

It is the student's responsibility to understand when they need to consider unenrolling from a course. Refer to the UWSP [Academic Calendar](#) for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons includes: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Incomplete Policy:

Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned at the discretion of Dr. Slemmons All incomplete course assignments must be completed within one month of the completion of the course.

Inform Your Instructor of Any Accommodations Needed:

If you have a documented disability and verification from the [Disability and Assistive Technology Center](#) and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student's responsibility to provide documentation of disability to Disability Services and meet with a Disability Services counselor to request special accommodation *before* classes start.

The Disability and Assistive Technology Center is located in 609 Learning Resource Center and can be contacted by phone at (715) 346-3365 (Voice) (715) 346-3362 (TDD only) or via email at datctr@uwsp.edu

Statement of Policy:

UW-Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. The results of such evaluation must demonstrate the student's achievement in the academic activity, rather than describe his/her disability.

If modifications are required due to a disability, please inform the instructor and contact the Disability and Assistive Technology Center in 609 LRC, or (715) 346-3365.

Commit to Integrity:

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.

UWSP Academic Honesty Policy & Procedures

Student Academic Disciplinary Procedures:

UWSP 14.01 Statement of principles

The board of regents, administrators, faculty, academic staff and students of the university of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the university of Wisconsin system. The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students who violate these standards must be confronted and must accept the consequences of their actions.

UWSP 14.03 Academic misconduct subject to disciplinary action.

(1) Academic misconduct is an act in which a student:

- (a) Seeks to claim credit for the work or efforts of another without authorization or citation;
- (b) Uses unauthorized materials or fabricated data in any academic exercise;
- (c) Forges or falsifies academic documents or records;
- (d) Intentionally impedes or damages the academic work of others;
- (e) Engages in conduct aimed at making false representation of a student's academic performance; or
- (f) Assists other students in any of these acts.

(2) Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

Religious Beliefs:

Relief from any academic requirement due to religious beliefs will be accommodated according to UWS 22.03, with notification within the first three weeks of class.

Need Help?

Extra Help Resources

Make an appointment with me

Come see Dr. Slemmons during scheduled office hours or make an appointment for extra help.

Form study groups

Find fellow classmates or Biology majors that you form a regular group with and review material and study for exams.

Attend the review sessions at TLC.

Tutors are available to help students with lecture and lab material.

Interested students are encouraged to contact the Tutoring-Learning Center.

Contact Disability Services

Students with a disability requiring accommodations should register with the Disability and Assistive Technology Center in the Learning Resource Center (the Library) and contact me at the beginning of the course.

Contact Counseling Center

The counseling center is located on the 3rd floor of Delzell Hall. These counselors can assist you with test anxiety, time management and personal struggles.

Seven Principles of Learning (Ambrose et al. 2012)

1. Students' *prior knowledge* can serve to help or hinder learning.
2. Students' *organization of knowledge* impacts how students learn and apply what they know.

3. *Motivation* determines, directs, and sustains what students learn.
4. To develop *mastery*, students must develop the skills, practice integrating them, and know when to apply them.
5. Goal-directed *practice* coupled with targeted *feedback* enhances learning.
6. Level of learner *development* interacts with “course” *climate* to impact learning.
7. To become self-directed, learners must be able to monitor and adjust their approaches to learning.

Ten things professors love:

1. Students
2. Students who come to class with an open mind
3. Students who come to class to fulfill a requirement but decide to make the most of the experience
4. Students who give eye contact during lecture (and maybe even smile)
5. Students who aren't afraid to ask questions
6. Students who come to me when they need help
7. Students who tell me not just that they enjoyed my course, but why
8. Students who have their own ideas
9. Students who give me unique and powerful things to say in a letter of recommendation
10. Students who are fully engaged in the learning process

*adapted from Jane E Dmochowski, University of Pennsylvania

Course Schedule

See D2L for day-to-day schedule of assignments and activities

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		30 U1: Characteristics of Life Video U1: Reading: 22-25 U1: Guided reading/questions U1: Characteristics of Life Evaluation	31 U1: Practice Quiz U2: Semmelweis & Nature of Science Case Study U2: Reading 1-15 U2: Guided reading/questions U2: Anatomy of an Experiment Video	1 U1: Peer Review of Life Evaluation U2: Practice Quiz Lab 1: Scientific Investigation Post Lab Lab 2: Hypothesis and Experimental Design U3: Reading 28-32, 45-60, 74-91	2 U2: Pseudoscience Assignment U3: Guided reading/questions U3: Lab 3 Cell Simulation U3: Biomolecules & Cells Practice Quiz TEST UNITS 1-3	3 U4: Read 95-110 View Video: Light from Life
4 U4: View Mystery of the Flea Dip Video U4: Reading 114-131 U4: Case study Questions	5 U4: Guided Reading U4: Cellular Respiration & Photosynthesis Practice Quiz	6 U5: Reading 137-149 U5: Reading 155-160 U5 View Vampire Case	7 U5: Reading 163-178 U5: Guided Reading Questions U5: Lab 4 DNA Extraction	8 U5: Forensics summary U5: Case study questions U5: DNA structure, replication and protein synthesis Practice Quiz U6: Mitosis Reading pages 193-209 U6: Mutation Reading 214-225 U6: View Stem Cells a Story	9 U6: Guided Reading/questions U6: Lab 5 Mitosis Simulation U6: Mitosis, Cancer and Stem Cells Practice Quiz TEST UNITS 4-6	10 U7: Meiosis Video U7: Reading 230-243
11 U7: Case study questions U7: Meiosis Practice Quiz U7: Point/Chromosome mutation Research Summary	12 U8: Mendel's Experiments Video U8: Reading 249-254	13 U8: Non-Mendelian Video U8: Reading 258-577 U8: Mendelian & Non-Mendelian Genetics Guided Reading U8 Lab 6 Genetics Simulation U8: Mendelian & Non-Mendelian Genetics Practice Quiz	14 U9: Biotechnology Video/Questions U9: Biotechnology Guided Reading Questions	15 U9: Biotechnology Tool Research Summary U9: Biotechnology Practice Quiz	16 U9: Peer Review of Biotechnology Tool Research Summary TEST UNITS 7-9	17 U10: Reading 303-316, 321-329 U10: Darwin Video
18 U10: Lab 7 Natural Selection Simulation U10: Reading 330-349 U10: Evolution Practice Quiz Photosynthesis presentation DUE	19 U11: Reading 390-405 U11: Reading 411-425 U11 Lab 8: Plant Biodiversity	20 U11: Lab 9: Animal Biodiversity U11: Biodiversity Practice Quiz	21 U12: Reading 450-462 U12: Reading 466-482	22 U12: Population & Community Ecology Guided Questions U12: Population & Community Ecology Practice quiz U12: Lab 10 Food Web and Population simulation	23 REVIEW Final Exam UNITS 10-12	

References:

- Ambrose SA, Bridges MW, DiPietro M, Lovett MC, Norma MK (2010) How Learning Works: Seven Research-based principles for smart teaching. Jossey-Bass
- Cornelius TL, Owen-DeSchryver J (2008) Differential Effects of Full and Partial Notes on Learning Outcomes and Attendance. *Teaching of Psychology* 35: 6–12
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- Khanna MM, Badura Brack AS, Finken L (2013) Short- and Long-Term effects of cumulative finals on Student learning. *Society for the Teaching of Psychology* 40(3) 175-182.
- Lawrence, N. K. (2013). Cumulative exams in the introductory psychology course. *Teaching Psychology* 40 (1), 15–19.
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Psychological Science. DOI: 10.1177/0956797614524581
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- Shea, V. (1994). Netiquette. Albion.com. Retrieved from: <http://www.albion.com/netiquette/book/>.

Note: This is a tentative syllabus. I reserve the right to make amendments to this document. Also, course materials may not be distributed or posted in any online format without permission from Dr. Slemmons.