

ENVS110: Humans & the Biological Environment Professor: **Dr. Michelle Paddack**

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visit your ENVS110 tab in Canvas *daily* – it where you will find important course material such as study guides, lecture notes & announcements. Note that our class schedule may adapt to our progress as a class – listen for announced changes & check your pipeline email & the course Canvas site daily.

ENVS110 Spring 2023 Class Schedule:

Wk	Lect # (Date)	Lecture topics (Tues & Thurs 11:10-12:30, EBS 301) Lectures are interactive so be sure to come!	Reading (Cunningham et al, 10 th ed.)	Assignments (details in Canvas for each) Environmental News Flash posts are due any class you chose - don't forget!
1	1 (1/24)	Environmental Science Intro	Ch 1	Intro video
	2 (1/26)	Fundamentals of matter & water	Ch 2.1-2.3	
2	3 (1/31)	Nutrients; Biogeochem. Cycles; Energy	Ch 2.3-2.5	
	4 (2/2)	Natural Selection & Evolution	Ch 3.1-3.2	Intro responses due
3	5 (2/7)	Biodiversity	Ch 5.4-5.6	
	6 (2/9)	Species Interactions, Communities, Population Growth & Regulation	Ch 3.2-3.5	
4	7 (2/14)	Human Populations	Ch 4	
	8 (2/16)	Exam 1 (lectures 1-7)		
5	2/21	Terrestrial Biomes	Ch 5.1, 6.1-6.2	
	9 (2/23)	Aquatic environments	Ch 5.2-5.3	
6	10 (2/28)	Protected areas	Ch 6.3	Ecological Footprint p.1
	11 (3/2)	Food & Agriculture	Ch 7.1-7.5	
7	12 (3/7)	GMOs, Sustainable Farming	Ch 7.6-7.7	Ecological Footprint p.2
	13 (3/9)	Environmental health & toxicology	Ch 8	
8	14 (3/14)	Climate Change	Ch 9	
	15 (3/16)	Air Pollution	Ch 10.1	
9	16 (3/21)	Air Pollution	Ch 10.2-10.5	

	3/2	Exam 2 (lectures 9-15)		
<i>Spring break March 27-31</i>				
10	17 (4/4)	Water Resources & pollution	Ch 11.1-11.4	
	18 (4/6)	Water treatment & remediation	Ch 11.5-11.7	
11	19 (4/11)	Earth Resources & mining impacts	Ch 12	Community Action Project (CAP) due 4/10
	20 (4/13)	Energy: Fossil fuels & Nuclear Energy	Ch 13.1-13.4	
12	21 (4/18)	Renewable Energy	Ch 13.5-13.6	
	22 (4/20)	Solid & Hazardous Waste	Ch 14	CAP responses due
13	23 (4/25)	Urbanization; Economics	Ch 15.1-15.3	
	24 (4/27)	Economics	Ch 15.4-15.6	
14	5/2	Exam 3 (lectures 16-24)		
	25 (5/4)	Environmental Policy	Ch 16.1-16.2	
15	26 (5/9)	Environmental Policy	Ch 16.3-16.5	
	27 (5/11)	Sustainable futures		
16	Th 5/18	Final Exam (Note time! 11-1) -comprehensive (all chapters)		

Text (required): Principles of Environmental Science, Cunningham et al, 10th ed. I *highly* recommend that you read/review the text *prior* to each lecture

Welcome to ENVS 110 - Humans & the Biological Environment!

Humans and the Biological Environment is a lecture-based course that has an optional lab course (ENVS 111) that can be taken at the same time or any time after taking ENVS 110. This allows you to satisfy the Area 5B IGETC requirement with either a lecture only course (ENVS 110) or a lecture and lab combination (ENVS 110 and 111).

ENVS 110 covers the impacts of human activities on the environment and how human populations are impacted by a changing environment. Throughout this course we use biology, ecology, physiology, chemistry, and physics to understand the science of environmental change and how it affects biodiversity, ecosystem function, and human populations. In this modern era dominated by technology with a rapidly growing population you have to be educated in these issues to have any hope of finding a

place in our evolving economy. As a species we need to be informed and make educated decisions or we will make it more difficult for our children and possibly bring about the decline of human societies. We take a hard look at the evidence and discuss ways to make change and create opportunities for future careers. This class will be a comprehensive overview of all aspects of environmental sciences including populations, management, resources and pollution. Most importantly, this class will foster critical thinking, teamwork and solution building so that you are prepared to bring your knowledge and passion for the environment out into the world in effective ways.

Course Objectives:

1. Explain how human activities affect the environment and identify evidence supporting the conclusions.
2. Explain the ecological importance of biodiversity and how humans benefit from maintaining biodiversity and identify evidence supporting the conclusions.
3. Describe the growth of populations and the concept of carrying capacity.
4. Explain how we grow food, how agriculture impacts environmental systems, and how changes in the environment affect agriculture and identify evidence supporting the conclusions.
5. Explain how pollutants impact human health and ecological systems including water, soil, air, and climate and identify evidence supporting the conclusions.

Student Learning Outcomes

1. ENVS 110 SLO1 - Explain and apply the fundamentals of evolution and population dynamics to the interaction of humans with the biological world.
2. ENVS 110 SLO2 - Explain how ecosystem function affects and is affected by producing food, securing water and producing energy and the resulting consequences for human populations.
3. ENVS 110 SLO3 - Analyze the sources of pollution and their impacts on ecosystems and human health.

Your role in this class:

Congratulations on taking the initiative to learn a fascinating and very important subject that has daily connections to our lives! This class will be highly interactive - we will create a learning community and connect what we are learning to your lives and the greater local and global community. I will provide support and tools to help you learn, but it is ultimately YOU who is responsible for your knowledge. If you need extra help or want to talk about academic & career paths, please make an appointment to see me either in my office or via zoom or phone. I am here for YOU and will work as hard as you do to help you succeed.

Participation: A key element of the sciences is to be inquisitive and interactive with your subject and your peers. Your participation is therefore an important part of your learning, and so is a part of your grade. All science classes build on the foundations laid in each lecture, so it is important that you ***do not get behind.***

Do not be afraid to ask questions or to seek help in understanding from your instructor or your peers – discussion & debate are important aspects of science. Because you are here to learn, **I strongly**

encourage you to stay engaged during lecture, ask questions & take part in discussions. If you don't understand something, it is most likely that someone else in the class shares your confusion. The easiest way to resolve your misunderstanding is to speak up. If you have any suggestions or comments about my lectures, the text, or other material related to the class please feel free to speak to me so that we can make this class the best learning environment possible.

Course Communication & Materials:

Class website: All Course materials will be posted on your Canvas site. This will be THE resource for you during this course – visit it frequently!

If you have not already done so, log into and familiarize yourself with Pipeline. I communicate with you via Pipeline email, so you check your school email (Pipeline) regularly for updates, reminders, or schedule changes. Best to get the Canvas app on your phone & **turn notifications on**. I will post weekly to do-lists & updates as announcements & the 1st page in each module.

To log into Pipeline: Go to the SBCC homepage (www.sbcc.edu) and click on “Pipeline”. On the upper bar, click on the ‘Canvas’ button – in Canvas, click on BIOL-100.

If you have difficulty accessing or using Pipeline, contact the Online Help Desk at online@sbcc.edu (805 965-0581 x2949) or visit the Cyber Center.

Study Guides will be posted in Canvas after each lecture. These will include images of any slides shown during class and a list of questions (posted as a Google doc that you can download). Although these questions will not be graded, I advise you to treat them like homework and set 4-6 hours aside after each lecture to answer the questions and review material. This will keep you on top of the material and allow you to be sure you understand. If you are unable to answer a question, ask for clarification in the next lecture or come to office hours or the tutor. Lecture quizzes and exams will consist only of these questions.

GRADING: Grades will be determined by the total percentage earned in the course. A student who shows strong effort and/or improvement in the course may be bumped up into the next higher level at my discretion.

Points are earned as follows out of a total of 445 points:

Assignment	points	#	total pts	% of grade
Introduction discussion	20	1	20	4%
Exam 1	50	1	50	11%
Exam 2	50	1	50	11%
Exam 3	50	1	50	11%
Final exam	50	1	50	11%
Group Discussions	5	15	70	16%
Ecological Footprint	25	1	25	6%

Environmental News	25	1	25	6%
Community Action Assignment	50	1	50	11%
Weekly Quizzes (online)	5	11	55	12%

Final grades are determined according to the following scale:

A+: ≥97%	B+: 86-87%	C+: 75-78%	D+: 67-69%
A: 91-96%	B: 82-85%	C: 70-74%	D: 60-66%
A-: 88-90%	B-: 79-81%		F: <60%

Students taking pass/no pass must get at least 70% to pass the class.

ASSIGNMENTS:

Readings: Text readings will support the lecture material. To help you understand, interact, and ask questions, reading assignments for each class should be read **BEFORE** lecture.

Readings support the class material but additional material WILL be presented in lectures, so be sure to attend lectures and get notes from classmates if you must miss a lecture.

Weekly Quizzes: Each week you will have a short quiz to be taken online in our Canvas page. These will be open-book quizzes designed to ensure you are grasping key material from the readings.

Weekly Discussions: During each lecture we will have interactive discussions with the whole class and in smaller groups. These will be a way for you to work with the ideas you are learning and share & learn with your classmates. Your grade will be based upon your participation in these discussions.

Exams: You will have 3 exams during the semester each 4 weeks which will cover material within each previous 4-week period. They will be closed-book exams. Exams will be in our lecture room and will occur during the first 1.5 hours of class. Exams will consist of a combination of multiple choice, short answer, and essay questions. You must take all exams in order to pass this class. We will have a lecture following a break after each of the exams.

Make-up exams and quizzes will ONLY be given in cases of documented emergencies.

Final Exam: You will have a final exam on Wed Dec 14 from 2-4pm in the classroom. This will be a comprehensive exam covering material from the entire semester.

Environment news: This will be an oral assignment where you share with the class a news story or scientific article publication relevant to this class. You may do this at the beginning of any lecture. You must state your source, summarize the news, and talk about your response to it/how it relates to this class/questions that come up. This can be the basis of some excellent class discussions and touch points to connect our learning to what is happening in the world today - use this as impetus to become more aware and seek out information. Do be sure your source is sound - ask me or a librarian if you are unsure.

Community Action Assignment (CAP): This assignment is designed to help you see in action how people in our community are working directly on the topics we are exploring in class. You will select an organization (this can be within our community here in Santa Barbara, or in another community you are connected to) that focuses on environmental action. This can include those working on issues such as sustainability, resource management, socio-environmental issues, environmental education, water quality, etc. For this assignment you will do the following - creating a video that you will also share with the class via Canvas with an online discussion.

1. Research the organization - describe their mission, where they are located, areas they focus on, why they do what they do, what type of people work they, who they serve, etc.
2. Interview someone within that organization - reach out to them by calling or email or visiting their facility. Ask that person both about the organization overall, and their role in it, and why they are interested in working with this group.
3. Describe an accomplishment that this organization has completed that has helped/is helping your community - describe why this was needed, what was done, and what the implications are now that this action has taken place (ie, how has it helped?)
4. Imagine that you have the financial & time resources to initiate a new project or more deeply support an on-going project with this organization - what would that be and why do you think that is important?

STUDY TIPS: The key to getting a great grade is the amount and quality of work that you put into this class. I will do everything I can to help you in this course, but your grade is ultimately up to you. Here are some tips to help you.

- The very best way to study is to attempt to teach the material to someone else. Listening to and understanding information is *completely different* than being able to reproduce it or use it under pressure without your notes!
- Budget into your schedule at least *3 hours* of study and reading time for every 1 hour of lecture time. That's a *minimum* of 7 hours every week, exclusive of exam study!
- Read (even if as a quick overview) the assigned reading material *before* lecture, and then very carefully read the relevant sections a second time after the lecture. If you don't understand something at that point, ask me.
- Take notes during lecture. Review (or even rewrite) your notes after lecture - this is especially effective if you do it with a classmate as you can help each other fill in gaps, answer questions, and identify where you need extra help.
- Take notes on your post-lecture reading, and incorporate these notes into your lecture notes. Rewrite all your notes, cleaning up and re-organizing them as you do.
- Do all study questions within 24 hours of each lecture. Ask questions in class or come to office hours to clarify what you do not understand.
- Test yourself to *evaluate* and *use* the material;

- Join or form a study group. You're more likely to study if it's scheduled and others are depending on you. Plus, in a study group, you have people to whom you can teach the material. (See first bullet point.)

Your success: I want you to do well in this course as much as you do! Please email or come see me if you have any questions or problems with the course, assignments, anything to do with your experience here at SBCC, or if you just want to chat. It is my joy to help you succeed. If I am not able to help you, I will try to put you in touch with someone who can. Also, don't think that you should wait until a problem arises to come see me or talk to me. Come anytime, no question is too small – students that attend class regularly and keep an open line of communication with the instructor typically perform better in their courses. Take advantage of opportunities to talk with your professors – we're here to help you learn & connect you to resource that will help you get the most out of your experience in our SBCC community and beyond.

Academic Honesty

Academic dishonesty (including plagiarism) will not be tolerated in this course. SBCC has a strict policy on academic honesty, and I have zero tolerance for any act of academic dishonesty. Academic dishonesty includes but is not limited to: (1) Cheating on an exam or quiz (e.g. looking at or copying from somebody else's exam, talking during an exam, using cell phones or texting, bringing prepared "cheat sheets", using translators or dictionaries); (2) Copying someone else's work or answers in worksheets, lab exercises, etc. (3) Plagiarism (failing to properly cite material produced by others, or intentionally turning in work that is characterized as one's own). (4) Having someone else (including AI) write your work. ***All work submitted must be your own.***

Accommodations for Students with Disabilities:

Disability Services and Programs for Students (DSPS) coordinates all academic accommodations for students with documented disabilities at Santa Barbara City College. If you have or think you might have a disability that impacts your educational experience in this class, contact DSPS to determine your eligibility for accommodations. DSPS can be reached by phone or email. The phone number is 805-730-4164 or send email to dsp@sbcc.edu.

If you have already registered with DSPS, please submit your accommodation requests via the '***DSPS Online Services Student Portal***' as soon as possible. This needs to be done each semester. If you have any questions or concerns about your accommodations, make an appointment with a DSPS Counselor. Complete this process in a timely manner to allow adequate time to provide accommodations.

Acomodaciones para estudiantes con discapacidades:

Los Programas y Servicios para Estudiantes con Discapacidades (DSPS) coordinan todas las adaptaciones académicas para los estudiantes con incapacidades documentadas en Santa Barbara City College. Si

usted tiene, o cree que podría tener una discapacidad que afecta a su experiencia educativa en esta clase, póngase en contacto con DSPS para determinar si califica para servicios. Puede comunicarse por teléfono al 805-730-4164; o mandar un correo electrónico a DSPS@sbcc.com.

Si ya está registrado en DSPS envíe las solicitudes de adaptación a través del '***DSPS Online Services Student Portal***' tan pronto como sea posible. Debe completar este proceso cada término académico. Si tiene alguna pregunta o duda acerca de sus acomodaciones, haga una cita con un consejero de DSPS. Complete este proceso de una manera oportuna para permitir el tiempo necesario para ofrecer la debida acomodación.