

BIO407 Environmental Modulation of Developmental Mechanisms

Course Meeting dates/times: Tuesdays and Thursdays, 9:30AM – 10:45AM via zoom

Course Meeting room: via Zoom

Instructor: Dr. David Champlin

Office Location: Science Bldg. room 476A (I won't be having any meetings here due to the pandemic. We can talk by phone, email, or Zoom)

Email: champlin@maine.edu

Office Phone: 207-228-8349 (email is better)

**Office Hours: Tues. and Thurs. 1:00 – 3:00
via Zoom or phone – but there are many
times we can schedule a meeting**

Course Materials & Books:

required textbook: Ecological Developmental Biology: The Environmental Regulation of Development, Health, and Evolution, 2nd Edition by Gilbert and Epel, 2015.

ISBN-13: 978-1605353449

The 1st edition is very different and not an acceptable substitute.

COURSE SCHEDULE:

This schedule is meant to be a guide but I may need to make changes during the semester.

Day	Date	Subject	To be read prior to this class period:
T	1/26	Setting the stage	
Th	1/28	Capstone course planning	preface for our textbook
T	2/2	Life Span	pp 313-326
Th	2/4		Chapter 1
T	2/9		
Th	2/11		Chapter 3
T	2/16	gut bacteria symbionts and development	
Th	2/18		Chapter 2
T	2/23	hormonal control of sex determination	
Th	2/25		
T	3/2		Chapter 5
Th	3/4		
T	3/9	epigenetics	
Th	3/11		Chapter 6
T	3/16		

Th	3/18	Midterm Exam	
T	3/23	endocrine disruptors	
Th	3/25		Chapter 7
T	3/30	toxicology	
Th	4/1		
T	4/6	cancer	Chapter 8
Th	4/8		
T	4/13	animal and plant life cycles	
Th	4/15		Chapter 9
T	4/20	nutrients and development	
Th	4/22	Capstone Topics papers due	
T	4/27	evolution	Chapter 10
Th	4/29	Discussion of Capstone Topics	

Comprehensive Final Exam, Tues., May 4th, 08:00AM - 10:00AM

Grading Criteria:

basis for final grade:

The maximum number of points for the entire course is 550:

100 points Midterm Exam

100 points Final Exam

100 points Journal for your Capstone Project

50 points Capstone Topic short writing assignments

100 points Capstone Topic Project Paper

100 points class participation including presentation

A=4.00, A-=3.67, B+=3.33, B=3.00, B-=2.67, C+=2.33, C=2.00, C-=1.67, D+=1.33, D=1.00, D-=0.67, F=0.00

Take the letter grade for each assignment, multiply it by the fraction of the total points the letter grade was worth and then add up all results.

ATTENDANCE POLICY

Class participation will be important for our course. You'll be graded on attendance and participation (bring some questions to each class meeting and ask them in class. Yay!!)

Capstone Topics:

Our course will serve as a capstone course in your major in a variety of ways. Each student will pick one of the following topics to focus on throughout the course:

DRINKING WATER AND WASTEWATER TREATMENT PLANTS

HUMAN HEALTH

AGRICULTURE

EDUCATION OUTREACH

TOXICOLOGY

ENVIRONMENTAL HEALTH (populations of wild animals or plants)

There will be four assignments associated with your Capstone Topic:

1) journal, 2,3) two short writing assignments, and 4) project paper.

journal: Along with your project paper you will hand in a journal of what you did on your project. The journal is a scientific diary. You should create an entry now: what do think of the topic? Do you know anything about it? Do you think you'll find something from a previous class you took?

The journal is a different kind of assignment, maybe one you've never done before. You're supposed to be aware of it all the time. When something comes up randomly, like during class or

another class, or the news, or just pops into your head, you need to get into the habit of writing it down in your journal and dating it. More importantly, in your journal you document and date all your effort on your capstone topic. Our book has some citations for primary research articles on these topics. But they are a few years old. You can use a Cited Reference Search to look for newer topics (ask a Reference Librarian) and include that effort in your journal. You also will need to use the web to hunt for all kinds of material that you can carefully record in your journal (when you found it and how you found it). The skill you will be learning is networking. The journal is a record of the growth of your knowledge. It's also a record of your effort.

two short writing assignments: These will fit along the path of your capstone project and will get integrated into your project paper. One writing assignment will be about the Ethical Inquiry course you took. Another will be about your career plans and goals. The third will be about cocurricular opportunities for your capstone topic and your career plans.

capstone topic project paper: This will be a paper based on your independent research on your capstone topic. It will include equal numbers of references (at least ten of each type) to scientific research articles and references to personal communications, web sites, and community resources. All will be documented in your capstone journal when you first found the references. We will share in class through the semester lots of examples. Some of you will contact USM professors or other folks out in the community. Each project has many community resources to learn about your topic. All of you will identify and include opportunities for outreach and community service aligned with your capstone topic.

presentation: As part of class participation, each student will pick one of the following topics and lead discussion of the topic in class (see dates on calendar above).

gut bacteria and development
hormonal control of sex determination
endocrine disruptors
epigenetics
toxicology
cancer
animal and plant life cycles
nutrients and development
evolution

The rest of this syllabus is important information that is included in every syllabus at USM:

Course Evaluations:

At the end of each semester every student has the opportunity to provide constructive feedback on the course. It is important to me that you take the time to let me know your thoughts about the course. I use your feedback to make improvements in the course materials, assignments, and outcomes.

COURSE POLICIES

ACADEMIC INTEGRITY / PLAGIARISM

Everyone associated with the University of Southern Maine is expected to adhere to the principles of academic integrity central to the academic function of the University. Any breach of academic integrity represents a serious offense. Each student has a responsibility to know the standards of conduct and expectations of academic integrity that apply to academic tasks. Violations of academic integrity include any actions that attempt to promote or enhance the academic standing of any student by dishonest means. Cheating on an examination, stealing the words or ideas of another (i.e., plagiarism), making statements known to be false or misleading, falsifying the results of one's research, improperly using library materials or computer files, or altering or forging academic records are examples of violations of this policy which are contrary to the academic purposes for which the University exists. Acts that violate academic integrity disrupt the educational process and are not acceptable.

Evidence of a violation of the academic integrity policy will normally result in disciplinary action. A copy of the complete policy may be obtained from the office of Community Standards and Mediation, online at usm.maine.edu/community-standards-mediation/academic-integrity or by calling and requesting a copy at (207) 780-5242.

UNIVERSITY POLICIES AND RESOURCES

DISABILITY ACCOMMODATIONS

The university is committed to providing students with disabilities equal access to all university programs and services. If you think you have a disability and would like to request accommodations, please contact the Disability Services Center. Timely notification is essential. The Disability Services Center can be reached by calling 207-780-4706 or by email dsc-usm@maine.edu. If you have already received a faculty accommodation letter from the Disability Services Center and would like to request accommodations for this course, please provide me with that information as soon as possible. Please make a private appointment so that we can review your accommodations together.

TUTORING AND WRITING ASSISTANCE

Tutoring at USM is for *all* students, not just those who are struggling. Tutoring provides active feedback and practice, and is available for writing, math, and many more subjects. Walk-in tutoring is available at the Glickman Library in Portland, the Gorham Library, and the LAC Writing Center. For best service, we recommend making an appointment at <https://usm.maine.edu/learningcommons/schedule-tutoring-appointment>. Questions about tutoring should be directed to Naamah Jarrot at 207-780-4554. Interested in becoming a more effective, efficient learner? Check out <https://usm.maine.edu/agile!>

HEALTH AND COUNSELING

Counseling is available at USM. The best way to schedule an appointment is by phone at 780-5411. More information is available at <https://usm.maine.edu/uhrs>.

RECOVERY ORIENTED CAMPUS CENTER (ROCC)

A peer support community for students in recovery from substance abuse and other mental health conditions is available at USM. More information may be found online at <https://usm.maine.edu/recovery> or by contacting ROCC at 207-228-8141.

NONDISCRIMINATION POLICY AND BIAS REPORTING

The University of Southern Maine is an EEO/AA employer, and does not discriminate on the grounds of race, color, religion, sex, sexual orientation, transgender status, gender expression, national origin,

citizenship status, age, disability, genetic information or veteran's status in employment, education, and all other programs and activities. The following person has been designated to handle inquiries regarding non-discrimination policies: Amie Parker, Interim Director of Equal Opportunity, The Farmhouse, University of Maine Augusta, Augusta, ME 04333, 207.581.1226, TTY 711 (Maine Relay System). Incidents of discrimination or bias at USM should be reported to Associate Vice President for Student Affairs David Roussel at 207-780-5242.

STATEMENT ON RELIGIOUS OBSERVANCE FOR USM STUDENTS

Absence for Religious Holy Days: The University of Southern Maine respects the religious beliefs of all members of the community, affirms their rights to observe significant religious holy days, and will make reasonable accommodations, upon request, for such observances. If a student's religious observance is in conflict with the academic experience, they should inform their instructor(s) of the class or other school functions that will be affected. It is the student's responsibility to make the necessary arrangements mutually agreed upon with the instructor(s).

TITLE IX STATEMENT

The University of Southern Maine is committed to making our campuses safer places for students. Because of this commitment, and our federal obligations, faculty and other employees are considered mandated reporters when it comes to experiences of interpersonal violence (sexual assault, sexual harassment, dating or domestic violence, and stalking). Disclosures of interpersonal violence must be passed along to the University's Deputy Title IX Coordinator who can help provide support and academic remedies for students who have been impacted. More information can be found online at <http://usm.maine.edu/campus-safety-project> or by contacting Sarah E. Holmes at usm.TitleIX@maine.edu or 207-780-5767.

If students want to speak with someone confidentially, the following resources are available on and off campus: University Counseling Services (207-780-4050); 24 Hour Sexual Assault Hotline (1-800-871-7741); 24 Hour Domestic Violence Hotline (1-866-834-4357).

POLICY ON ACCEPTABLE CONDUCT IN CLASS SETTINGS

If a student substantially disrupts a class, the professor may ask the student to align with this policy on conduct in a class setting. If the student refuses, the professor may, at their discretion, ask the student to leave. If the professor takes this step, they must attempt to communicate with the student and provide informal counsel and advice. The professor may elect to notify their dean of the situation as well. If the student disrupts the class again, the professor may, at their discretion, provide a written notification to the student, describe the offending behavior, and refer the student's case to the appropriate academic dean and notify the dean of students that an official student conduct code violation has occurred [<https://usm.maine.edu/community-standards-mediation/conduct-process>].

COVID FACE COVERING REQUIREMENT

Per USM and the University of Maine System, all students, faculty, and staff members are required to wear a face covering, including during all face-to-face classes. Resident students are exempted from this requirement when in their own room in the residence hall. Students seeking additional exceptions from this requirement should refer to the DISABILITY ACCOMMODATIONS section of this syllabus. <https://www.maine.edu/together/community-guidance/everyone/>