



SUFFOLK
UNIVERSITY
MADRID CAMPUS

BIO 106 M1 - ENVIRONMENTAL BIOLOGY

Instructor Information:

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Course Information:

Catalog Description: An introduction to basic evolutionary, behavioral and ecological principles. Readings and discussions emphasize the ways that humans are affected by ecological processes and principles as well as how humans and their technology affect ecosystems. This course will not fulfill requirements for a major or a minor in Biology. Madrid Campus only.

Instructor's Additional Course Description: The foundational knowledge of each unit is often introduced through one or several case studies. Students are encouraged to integrate the knowledge in other case studies to achieve a better understanding and reach solutions. A mandatory field trip and participation in class discussions are key components of the course. Taught only at the Madrid Campus. This course is complementary to SCI 103/L103 Environmental Science. Students may take both.

Credit Hours: 4

This course follows the US Federal Government's Credit Hour definition: "An amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutional established equivalence that reasonably approximates no less than:

- (1) One hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or
- (2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours."

For full up-to-date statement:

https://cihe.neasc.org/sites/cihe.neasc.org/files/downloads/POLICIES/Pp111_Policy_On_Credits-And-Degrees.pdf

To complete this course, students will need to dedicate, at a minimum, the following amount of time to the listed activities:

Assignments/Activities	Engagement Estimate	Engagement Hours
Course readings-watching videos + Homework	5 assignments x 6 hours	30
Ppt Presentations	2 x 10 hours	20
Field trip	1 x 10 hours + writing notebook/paper 10	20
Review lecture notes	4 pages/lecture x 43 lectures x 7 min/page	20
Exam preparation	10 hours x 2	20
Research paper	Reading sources 25 + writing 20	45
Class Attendance	3 hours x 15 weeks	45
TOTAL		190 HOURS

Textbook/Course Materials:

- Smith, TM & Smith, RL Elements of Ecology. Pearson International Edition

Other reference books (available on loan from SUMC library) from which additional readings will be suggested:

- Calver, M., Lymbery A., McComb,.. J, Bamford, M. (Editor) 2009 Environmental Biology. Cambridge University Press
- Botkin, DB & Keller EA Environmental Science. Wiley

Assigned readings will be posted on BlackBoard.

Course Goals & Learning Objectives:

GOALS	OBJECTIVES	ASSESSMENTS
Upon successful completion of this course, students will know/understand	Upon successful completion of this course, students will be able to	How the student will be assessed on these learning objectives:
<ul style="list-style-type: none"> • That the STE disciplines involve a manner of inquiry and a process, and are not just content. 	<ul style="list-style-type: none"> • Distinguish between hypothesis-driven and inquiry-based research. • Recognize the flexibility of the discovery process and the scientific method. • Analyze and solve a problem based upon information from the scientific/technical literature. 	<ul style="list-style-type: none"> • Research project. As stated in this syllabus, students must include at least one scientific article in their research project. • In-class presentation with case studies. • Class assignments with case studies.
<ul style="list-style-type: none"> • The skills required to locate and understand scientific/technical literature. 	<ul style="list-style-type: none"> • Locate scientific or technical literature online and/or in the library. • Differentiate between factual scientific/technical literature and news/stories/opinions that are intended to persuade or entertain an audience. • Locate the definition of unknown vocabulary from a credible source and learn its meaning. • Explain an article from the secondary and tertiary scientific/technical literature. • Explain scientific/technical ideas in written or oral format. 	<ul style="list-style-type: none"> • Research project. The information for this must come from different sources and the students must be able to differentiate them. • In-class presentation and discussions. • The exam will contain questions in which it will be necessary to explain their ideas within the scientific format. • Class assignments

GOALS	OBJECTIVES	ASSESSMENTS
<ul style="list-style-type: none"> The relationship between natural science and technology, the implications of scientific discoveries, and the potential of the STE disciplines to address problems of the contemporary world. 	<ul style="list-style-type: none"> Give examples of how the STE disciplines are relevant and applicable to daily life. Recognize that as we gather scientific information, our view of the world changes. Explain how the application of STE disciplines requires ethical considerations and responsibilities. Appreciate that society has a vested interest in STE discoveries. 	<ul style="list-style-type: none"> These criteria must be considered by the students when answering the exam questions, developing their research papers and delivering their in-class presentations. In-class presentation with case studies. Class assignments with case studies.
<ul style="list-style-type: none"> Ways in which to enhance scientific inquiry and strengthen scientific competence. 	<ul style="list-style-type: none"> Develop analytical skills and critical thinking. Demonstrate problem-solving skills using scientific techniques. Have a more realistic point of view on how different ecosystems change and their inner working mechanisms. 	<ul style="list-style-type: none"> Case studies elaborated by students in presentations. Class assignments Field trip report
<ul style="list-style-type: none"> The interdisciplinary components of environmental biology. 	<ul style="list-style-type: none"> Demonstrate in-depth understanding of the environment and the connections with other disciplines. 	<ul style="list-style-type: none"> Questions on exams related to interdisciplinary aspects of environmental biology Class discussion and participation
<ul style="list-style-type: none"> The biological component of the environment and how we, as human beings, fit into that. 	<ul style="list-style-type: none"> Become well-grounded in the basic knowledge and processes of the biological component in the natural environment in space and time Interpret the biological component of natural environment with a solid background. Use the interpretations as a tool to improve environmental management. Identify and analyze environmental problems as well as the associated risks. Associate the peculiarities of different species and ecosystems to the different levels of interaction such as population or community and the environmental challenges. Have a greater voice in planning for conservation. 	<ul style="list-style-type: none"> Exams Class debates and participation Homework Class discussions Research work and presentations
<ul style="list-style-type: none"> The main tools of environmental biology. 	<ul style="list-style-type: none"> Plan the main steps of a restoration project. Use tools and well-grounded concepts for the different aspects of biological conservation. Be familiar with the different practices employed in environmental biology. 	<ul style="list-style-type: none"> Exams Additional case studies will be provided by the instructor so that the students are provided with a number of examples to do certain assignments related to tools that will be evaluated Research work and presentations

Grading/Evaluation:

Class and field trip participation - 15%

(Attendance, contribution to discussions, in class exercises, presentations, evaluations)

Homework and field trip report - 15%

(On-your-own exercises, critical thinking summaries of reading assignments, questions from the Text, internet research, field trip report) 5% of the grade will be taken away for each day late from the deadline.

Presentation and research paper - 20%

(If not submitted on scheduled date, 5% of the grade will be taken away for each day late from the deadline).

Examinations (Mid-term + Final) – 50%

Required.

Percentage	Grade	Percentage	Grade
100% - 94%	A	76% - 73%	C
93% - 90%	A-	72% - 70%	C-
89% - 87%	B+	69% - 67%	D+
86% - 83%	B	66% - 63%	D
82% - 80%	B-	62%-60%	D-
79% - 77%	C+	60% or less	F

These cutoffs can be adjusted (up or down) depending on class average and dispersion.

Assignments/Exams/Papers/Projects:

Students will be evaluated in the following areas:

- **Class attendance and participation: 15%** Attendance in this course is mandatory and requires participation in discussions, in-class exercises, student presentations and article submittals. Active presence in class, rather than passive attendance, will be graded, since positive contribution to discussions, in-class exercises and presentations is required. Attendance to the field trip is particularly important.
- **Homework assignments: 15%** Homework will be assigned and most will be due via email prior to noon on the following Tuesday unless otherwise directed. Homework will be awarded from 0 to 10 homework points. Late submittals are penalized with 5% less in the grade for each day after the deadline. The field trip report is considered part of the homework.
- **Research Paper and In-Class Presentation: 20%** The text of the paper must be 6 (6 to 8) pages in length, typed, 1.5 spaced, 12-point font, with standard 1 inch margins. Diagrams, charts, or pictures should not take up more than the equivalent of 25% of the paper’s length and must be clearly relevant and an enhancement of text description of the information. No fewer than 6 references must be utilized and these references must be clearly indicated both in the body of the text and included in a reference list. (The required title page and reference list do not count towards paper length.) **A minimum of three references must be based on scientific papers.** Late submittals will be significantly penalized and will **not** be accepted after one weeks past the deadline. All students are required to be present during all presentations and to complete an evaluation sheet on each presentation. These evaluations are an important component of the class participation grade of the student completing them.
The research paper and class presentation topic must be discussed with the instructor.
- **Mid-term Exam: 25%** The midterm exam is structured into several essays corresponding with the class units.
- **Final examination: 25%** The final exam is structured into several essays corresponding with the class units covered in the second half of the semester.

Selected assignments in this course may be used by our accreditation team for institutional assessment purposes and will be handled confidentially.

Course and Classroom Policies:

- Students are encouraged to participate in class discussions and to ask questions.
- Announcements on possible changes may be made during the semester.
- Useful information, including guidelines for research, homework and presentations, for the course may be found on BlackBoard.
- No food or drink (except water) in class is allowed.
- Use of cell phones, laptops and other electronic devices is not allowed. Anyone using or showing them in the classroom will be asked to give it to the professor that will keep it in the professor's table until the end of the class session or, in some cases, the professor will ask the student to leave the classroom with for the rest of the session.
- Late arrivals to class are considered up to 10 minutes. Students who arrive 15 minutes or more after the beginning of class will be considered as having missed that class. Students are expected to remain in the classroom throughout the class meeting, except for reasonable emergencies. Chronic lateness will significantly reduce the attendance portion of the student's grade.
- The order of the topics on the syllabus, readings and homework assignments are subject to change.
- Students are responsible for all lecture material, handouts and assigned reading.
- Students who legitimately miss an exam due to illness, a doctor's visit or personal or family emergency must provide written documentation of the circumstances. A student who misses an exam without proper justification will receive a grade of F for that exam.

Participation/Attendance Policy:

The SUMC Student Handbook states the following:

Once a student is registered for a course, attendance at every meeting of every class is expected, including those held in the first week of the semester. A maximum of two unjustified absences is permitted. Each additional absence will cause the final course grade to be lowered by one-third of a letter grade, i.e., from A to A-; A- to B+; B+ to B, etc.

Excessive absences in a course will have a negative effect on the final grade. When a student is absent, the quality of his or her work in a course will deteriorate since material missed in class sessions can rarely be made up satisfactorily, even though the student remains responsible for that work.

Please note that even when a student has a justified reason for missing class, such as illness, the negative academic impact on learning will be the same as if the absence were for spurious reasons.

In this course, any absence due to illness should be justified by a note from the student's physician or other health professional confirming the day(s) on which the student was unable to attend class. A written excuse from a student's host parent or residence supervisor is also acceptable. In this case the student is responsible for all material and assignments for the days missed, regardless of the reason for the absence.

This course requires participation in discussions, in-class exercises, student presentations and article submittals. Routine participation by students is important and constitutes a substantial portion of the attendance grade.

In the event that a class meeting is unexpectedly cancelled, students will be expected to continue with readings or other assignments as originally scheduled. Any assignments due or class activities (e.g., a quiz, exam or presentation) planned for such a cancelled class are due at the next class meeting unless other instructions are communicated.

Disability Statement:

If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in my classroom.

If formal, disability-related accommodations are necessary, it is very important that you be registered with the Office of Disability Services (ODS) at the main Campus in Boston so that I am notified of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations. Check the ODS web site at www.suffolk.edu/disability for information on accommodations.

Student Resources:

SUMC provides a range of student services, both academic and personal. To learn more about course-related tutorials and academic workshops, refer to the SUMC Student Handbook, Section 2 "Academic Policies and Services". Section 5, "Living in Madrid", contains information on the medical and mental health resources, including an English-speaking therapist, available to you.

Midterm Review:

At midterm, around week 6, you will be given a midterm grade based on the mid-term exam and the rest of the grades that you have received as of that date. Midterm grades of C- or below will be reported to the Madrid Campus Academic Standing Committee, with an explanation of what I believe has contributed to that grade: excessive absences, poor time management or study skills, lack of effort, difficulty with the course material or with writing or language skills, etc. The Academic Standing Committee and/or I may contact you to suggest strategies for addressing these difficulties. I strongly encourage you to visit me during my office hours so we may discuss how you can be successful in this class.

Academic Misconduct:

www.suffolk.edu/about/mission-history/policies-procedures/academic-misconduct-policy

Suffolk University expects all students to be responsible individuals with high standards of conduct. Students are expected to practice ethical behavior in all learning environments and scenarios, including classrooms and laboratories, internships and practica, and study groups and academic teams. Cheating, plagiarism, unauthorized collaboration, use of unauthorized electronic devices, self-plagiarism, fabrication or falsification of data, and other types of academic misconduct are treated as serious offenses that initiate a formal process of inquiry, one that may lead to disciplinary sanctions.

Student work will be thoroughly examined for academic integrity and may be scanned using plagiarism detection software. A faculty member suspecting academic misconduct will contact the student using the Suffolk email address to schedule a meeting and will make all effort to do so within five business days of detecting the incident. During the meeting, the faculty member will present the documentation that led to suspected academic misconduct. Resolution of the incident will be according to the procedures outlined in the SUMC Student Handbook.

Academic Grievances Policy:

www.suffolk.edu/student-life/student-services/student-handbook/university-policies-for-student-cas-sbs/grievances-academics

Course Schedule:

The schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better student learning.

Week	General Topic of lesson	Readings or Other Assignments Due
1	Introduction. Life support systems and humans	Class discussion and reading material
2	Plant diversity, evolution, succession, and Ethno-botany	Read Ch. 18 in Smith & Smith. Recognizing plant diversity in the campus plants Watch Mark Plotkin documentary and extract the main points in which ethnobotany is based
3	Biodiversity and extinction	Read Ch. 26 and 28.3, 28. 4,28.5 in Smith & Smith. Reading on biodiversity Complemented with lab exercise on woody plants biodiversity in Mediterranean ecosystems
4	Bio-invasions	Analyze a case study of an invasive species
5	World terrestrial ecosystems and the biome crisis	Read Ch. 23 in Smith & Smith. Choose an ecoregion or natural region and find out about its main working aspects.
6	Case Study: Amazonia	This case study will be the reference for the homework on your ecoregion
7	Animal behavior and conservation	Choose an animal species and describe the key aspects of its ecology and behavior in theory that you will complemented with two periods of personal observations on the zoo.
8	World aquatic ecosystems and the biome crisis	Read Ch. 24 in Smith & Smith. Work on the main environmental causes of wetland degradation.
9	Wrap-up of first half of course + midterm exam preparation	Preparation for the midterm exam
10	Ecology principles and concepts	Read and write a critical view of the article: Snowshoe hare adaptations Watch the video on artic goose
11	Populations and reintroduction	Read Ch. 9 and 28.7 in Smith & Smith. Read an article on fences and corridors in Kenya and discuss it.
12	Community interactions and rewilding	Read Ch. 16 in Smith & Smith. Watch the video on Rewilding. Focus in understanding the different consequences in the alteration of the trophic cascade.
13	Students' presentations	Students presentations of their research topic Previously students have to talk with the professor on their topic and how to focus it
14	Conservation biology	Read Ch. 28 in Smith & Smith. Pick up a conservation or restoration project that was a success or a failure and analyze the reasons behind the outcome.
15	Wrap-up of second half of course + final exam preparation	Preparation for the final exam.