

Last Date Revised: April 2015

I. COURSE NUMBER AND TITLE: Invasive Species Ecology, Management, and Policy

OCMB-9901 Marine Biology electives
MEVS-5600 Marine Environmental Sciences electives
CZMT-0778 Coastal Zone Management electives

II. INSTRUCTOR:

David Kerstetter, Ph.D.
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Office: 125 Modular Building, Oceanographic Center
Office Hours: By appointment.

III. COURSE DESCRIPTION:

This online course will cover the main biological and historical aspects of invasive species ecology, with a particular emphasis on aquatic systems. Particular emphasis is placed on the development of government policies regarding invasive species and the state, U.S. federal, and international management measures intended to control the effects of current invasive species and to minimize the risk of future introductions. Students will be provided with several seminal, peer-reviewed articles and other supporting materials regarding the topic of the week and expected to read and comment to the class about their content.

IV. COURSE LEARNING OUTCOMES*:

Over the 12-week course, students will be provided with a broad overview of invasive species, including lectures, interactive discussions, and outside reading and synthesis assignments. The beginning third of the course will cover basic concepts of invasive species biology, ecology, and theory. The second third will describe the methods used to quantify the impacts of invasive species. Finally, the last third will put those two earlier broad concepts into policy and management contexts to minimize the effects of current and future invasive species. At the conclusion of this course the student will be able to:

- 1) Basic biological and ecological concepts regarding exotic and invasive species.
- 2) The historical causes of invasive species introductions and why additional introductions of non-native species are likely to occur.
- 3) How to measure the ecological and economic impacts of current invasive species and model the impacts of future invasions.
- 4) Basic mechanical, chemical, and biological controls of invasive species.
- 5) How government policy and management actions to control invasive species are developed at state, national, and international levels.

*These are directly related to the Program Learning Outcomes for Marine Biology, Coastal Zone Management, and Marine Environmental Science.

V. REQUIRED TEXTS AND MATERIALS:

No textbook will be required for the course. However, two books – "Invasion Biology" by Mark Davis (ISBN-13: 978-0199218769) and "Invasion Ecology" by Julie Lockwood (ISBN-13: 978-1444333657) – provide additional background information on many of the topics for the first half of the course and may be helpful for students to have as reference materials.

Peer-reviewed papers, agency reports, and other written materials will be provided to the class by the instructor through the NSU online course portal for each of the unit periods, which you will be required to read and comment upon within class discussions.

VI. COURSE SCHEDULE AND TOPIC OUTLINE:

The course is broken into three broad sections: 1) invasive species biology and ecology, 2) predicting and describing the impacts, and 3) minimizing current and future invasive species.

Week #	Topic	Assignments/Discussion Boards/Papers due	Due date
Week 1 (5/11-5/17)	Course Intro and Faculty Intro Section 1, Unit 1: "Introduction to Invasive Species"	Personal introduction End of unit quiz	5/17
Week 2 (5/18-5/24)	Section 1, Unit 2: "Vectors of Invasion – Historical"	End of unit quiz	5/24
Week 3 (5/25-5/31)	Section 1, Unit 3: "Ecological process of invasion – disturbance pressures"	End of unit quiz	5/31
Week 4 (6/1-6/7)	Section 1, Unit 4: "Ecological process of invasion – ecological resiliency and enemy release"	End of section exam	6/7
Week 5 (6/8-6/14)	Section 2, Unit 5: "Modeling ecological impacts of invasive species"	End of unit quiz	6/14
Week 6 (6/15-6/21)	Section 2, Unit 6: "Quantifying socio-economic impacts of invasive species"	End of unit quiz	6/21
Week 7 (6/22-6/28)	Section 2, Unit 7: "'Playing Devil's Advocate' – what are some positives of exotic species?"	End of section exam	6/28
Week 8 (6/29-7/5)	Section 3, Unit 8a: "Management of invasive species – mechanical and chemical controls" Section 3, Unit 8b: "Management of invasive species – biological control"	End of unit quiz	7/5
Week 9 (7/6-7/12)	Section 3, Unit 9: "Invasive species policy – limiting current effects"	End of unit quiz	7/12
Week 10 (7/13-7/19)	Section 3, Unit 10: "Invasive species policy – minimizing future effects by agencies"	End of unit quiz	7/19
Week 11 (7/20-7/26)	Section 3, Unit 11: "Invasive species policy – minimizing future effects through public outreach"	End of section exam	7/26
Week 12 (7/27-7/31)	Course wrap-up	Final paper due	7/31

Note: This is a tentative schedule that may be changed. Students will be provided a minimum one-week advance notice of any change whenever possible.

VII. GRADING CRITERIA

Final paper (25%): There will be a final paper equal to 25% of the course grade dedicated to an invasive species of the student's choice. Additional details will be provided to the class in a separate document regarding formatting and other requirements.

Unit quizzes and section exams (65%): Each unit will have a quiz (multiple-choice) that constitutes 2.5% of the final grade, and each section will have an exam (multiple-choice and short answer) that will be each worth 15% of the final grade. All quiz and exam questions will be from the class .ppt presentations, assigned readings, and assigned videos.

Other (10%): A total of 7.5% of the final grade will be determined from the quality and quantity of student discussion within the online discussion boards. Also, 2.5% of the grade will be from the introduction video due by the end of the first week.

VII. COURSE REQUIREMENTS AND POLICIES:

ATTENDANCE

All students are referred to the Oceanographic Center catalog (<http://nova.edu/ocean/forms/nsuoc-2014-2015-catalog.pdf>; Section 3.8.4) for details on course attendance. As a requirement for accreditation, regular attendance is necessary, and each professor has the responsibility to enforce class attendance. To fulfill this requirement, students must have logged in, accessed, and/or interacted with the majority of online course requirements (e.g., assignment submissions, asynchronous discussion) by the first week of the session or they may be withdrawn from the course by the instructor through the Program Office. For this reason, if students anticipate or encounter any reason why they may be unable to engage with their online coursework for an extended period during a term, they must communicate this to their instructor and the Program Office as soon as possible.

Students do have the option of requesting an Incomplete; if this is granted by their instructor, they then have 3-months from the end of the term date to submit the required course work as decided with the instructor. An Incomplete grade agreement form must be completed and filed with the distance education office. An instructor reserves the right to request original written documentation to substantiate any such absences, and a falsified excuse is cause for disciplinary action. An Incomplete course grade must be completed in one semester or the grade is changed automatically to an F.

All students are referred to the Oceanographic Center catalog (<http://nova.edu/ocean/forms/nsuoc-2014-2015-catalog.pdf>; Section 3.5.2) for details on course withdrawals and refunds.

ACADEMIC HONESTY

In order to ensure the highest standards of academic honesty and ethical behavior, the NSU policies on cheating and plagiarism will be strictly enforced. (See the NSU Student Handbook for more information at <http://www.nova.edu/cwis/studentaffairs/forms/ustudenthandbook.pdf>). I am empowered by the NSU policy to penalize a student suspected of academic dishonesty, plagiarism, or otherwise misrepresenting work; be aware that I will do so as well as report that student to the Academic Dean of the OC. Nova Southeastern University has contracted with **turnitin.com** to provide plagiarism detection services, and I will submit any suspicious documents to this service.

The use of cell phones, or any other electronic devices not specifically allowed by me, during an exam is not permitted. The use of such devices for any reason will be assumed to be for the purposes of cheating

and will result in your dismissal from class and administrative action up to permanent expulsion from all NSUOC programs. If you need the phone for emergency notifications, or the like, leave the phone with me or the proctor at the start of class. You will be immediately notified if there is an incoming call.

EXPECTATIONS

You can expect that the course will be organized, and that I will be responsive to online postings and emailed requests for assistance. You can expect that I will be clear, fair, and equitable about my expectations and the criteria I use in assigning grades. I will treat everyone in the class with consideration and respect.

In turn, I expect you to keep up with the course lectures and submit expected coursework in a timely manner. If you have problems with the course material, I expect that you will contact me so that I can assist you. Finally, I fully recognize that family emergencies and other exigencies do occasionally happen that may prevent you from completing your course tasks as scheduled. However, I expect you to notify me as soon as possible if such a situation exists so that I can make alternative arrangements with you for the course material as necessary – do not wait for the end of the term to explain a poor grade due to a problem that occurred in the start of the course.

X: UNIVERSITY-WIDE POLICY STATEMENTS

A. Academic Misconduct: Academic misconduct appears in a variety of forms (including plagiarism). It is a violation of NSU academic policy and may be punished in a variety of ways, from failing the assignment and/or the entire course to academic probation, suspension or expulsion. If you have questions about what constitutes academic misconduct before handing in an assignment, see your instructor or the NSU Student Handbook at <http://www.nova.edu/cwis/studentaffairs/forms/ustudenthandbook.pdf>.

B. ADA Policy: Nova Southeastern University provides accommodations for students with documented disabilities. If you have a disability for which you believe you require accommodation, please contact Academic Services (<http://www.nova.edu/disabilityservices/>; 954-262-7189).

C. Last Day to Withdraw: You will be able to obtain a full refund of your tuition up to **Date Changes per TERM**. There will be no refund after that date. It is your responsibility to formally withdraw by completing the appropriate forms to obtain a refund (<http://www.nova.edu/ocean/coursepolicy.html>). A request for tuition refund must be made in writing at the time of withdrawal. Refunds will be made solely at the option of the university and will be based on the legitimacy of the reason for withdrawal. Should you fail to appropriately withdraw from this course, and then earn a grade below your expectations, the grade will be reported on your transcript. I will NOT backdate paperwork so that you can avoid earning a grade lower than you like.

D. Email Policy: All email communications between students and faculty must be conducted via NSU email accounts (<http://www.nova.edu/common-lib/policies/emailcomm.policy.html>). This requirement will assist NSU in communicating more effectively and protecting your privacy. Emails sent to faculty from non-NSU accounts will be returned to the sender with instructions to resend the communication from your NSU account. To set up an NSU email account or to get help with an existing account, go to https://www.nova.edu/sbin/account_request. Also, the computer help desk is available to assist you with questions regarding your NSU email account at 954-262-HELP (4357).

E. Student Course Evaluations: Student comment and feedback evaluating each course is an important tool to evaluate collegiate program effectiveness. Participation in this process is a responsibility of each

student, as it not only provides the University administration with a means to measure the success of the program, but it also provides the instructor with suggestions about how to improve the course for successive offerings.

F. Grading System

Per the Oceanographic Center Catalog (Section 3.9.1), the following system will be used to grade academic performance in this course:

GRADE	DESCRIPTION
A	Excellent
B	Satisfactory
C	Marginal Pass
D	Poor
F	Failure
W	Withdrawal: Given after the third class week or termination by the instructor for non-completion of the course by the student.
I	Incomplete: Given when most (80 percent), but not all, work has been completed.
Au	Audit
P	Pass

Professors may use + or – in grading. **However, the grading scale ranges from A to D-, no A+ or F+ are awarded.** A grade of incomplete (I) must be requested from the instructor, have the Associate Dean's approval, and be accompanied by a **completed contract specifying outstanding course requirements and completion dates.** Completion of the course graded incomplete must occur within one semester (or 3 months) of the end of the course and the incomplete be changed to a different grade. If the course is not completed in 3 months, or the student has not withdrawn and received a W, the incomplete will automatically be converted to a grade of F. Under unusual circumstances students may request a time-extension to complete the course. Such requests must be submitted to, and approved by, the Associate Dean of Academic Programs prior to the end of the 3-month time limit. **There are no exceptions to this rule. Securing the completed and signed incomplete contract forms is the responsibility of the student.**