Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
- Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Marine Sciences

2. Course prefix, number and complete title of course: MARS 648 Invasive Species

3. Course description (not more than 50 words): The science and management of biological invasions, history and success rates including vectors and theories with positive and negative biological, ecological, economical and societal impacts. Invasive species as threats to natural areas and communities. Management theories and regulatory strategies and their effectiveness. Emphasis on marine invasive species.

4. Prerequisite(s): Graduate standing

5. Is this a variable credit course? □ Yes ☑ No If yes, from ______ to ______.

6. Is this a repeatable course? □ Yes ☑ No If yes, this course may be taken ______ times. Will the course be repeated within the same semester/term? □ Yes □ No

7. Has this course been taught as a 289/489/689? ☑ Yes □ No If yes, how many times? 2 Indicate the number of students enrolled for each academic period it was taught. 061-3, 071-4

8. This course will be:

   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)

   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

   Marine Resources Management, Marine Biology

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Course #</th>
<th>Title (excluding punctuation)</th>
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<tbody>
<tr>
<td>MARS</td>
<td>648</td>
<td>INVASIVE SPECIES</td>
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<th>Admin. Unit</th>
<th>Acad. Year</th>
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Approval recommended by:

Head of Department: [Signature] 2/23/09

Chair, College Review Committee: [Signature] 3/19/09

Dean of College: [Signature] 3/20/09

Submitted to Coordinating Board by:

Director of Academic Support Services: [Signature] Date

Questions regarding this form should be directed to Sandra Williams at 845-8836.
OAR/AS – 04/07
MARS 648 – Invasive Species: Vectors, Impacts, Theories, and Management (Distance Learning); Professor W.M. von Zharen; dr_vonzharen@msn.com

OBJECTIVES: Interest in the science and management of biological invasions is rapidly expanding. This course explores the current knowledge base that focuses on vectors, impacts, theories and management. The course will include discussion of the positive and negative biological, ecological, economical, and societal impacts. It will look at: a) the history and success rates of invasive species including a review of literature including exploration documents; b) the characteristics of invasive species and the communities invaded; c) why invasive species are tied with habitat-destruction as threats to natural areas; d) what management theories have been applied or are being considered; e) what regulatory strategies have been applied and their effectiveness; and f) whether there are conflicting interests among stakeholders. Particular emphasis will be on marine invasive species.

Specific Objectives may be found at the beginning of each module.

LOGISTICS:
1. The course is available via distance learning. All material will be posted in WebCT Vista excluding the textbooks. Copy Dr. v via WebCT on all assignments.
2. There will be quizzes at the end of each module and are available on Vista. You will also be developing ten or so short answer (multiple choice, true/false) questions and answers for reading assignments. Again, please copy all WebCT emails to me as well as to your partner (assuming there is more than one student enrolled in the class; otherwise, I am your partner). The quizzes should be submitted to your partner. After your partner has responded to your quiz, then grade the quiz and send your partner the answers. If two students are enrolled, then the partner is the other student. If three or more students are enrolled, each student is in charge of rotating "partners" for the quizzes and all other material that should be exchanged. Again, then it is the students' responsibility to alternate the exchange of all materials – quizzes, answers, and module responses so that different partners are used as frequently as possible. The WebCT will provide a list of all students enrolled.
3. Remember, if you are late on an assignment, this is penalizing your partner.
4. Beginning with the first week of class, a module should be completed at the rate of one per week. DO NOT procrastinate. Always contact Professor von Zharen immediately with any questions.
5. Use the spelling and grammar check programs on your computer. Bad spelling and grammar make it difficult to read and understand your work and may result in a poor grade. If you have trouble writing and footnoting for legal papers, 1) see The Elements of Style by Strunk and White (available online); 2) look over the “Ocean Governance” article by von Zharen and available on Lexis; and 3) ask someone to proofread your papers.

METHODOLOGY AND GRADING: The objectives of the course will be met through readings, modules including Camtasia lectures, and involvement in specific projects:
1. Current Module, Reading, and Quizzes (35%)
2. Development of Species-Specific Invasive Species Module in PowerPoint (30%)
3. Critique and Evaluation of Colleagues’ Submission (10%)
4. Research (20%)
5. Self-evaluation (5%)

Current Module, Reading, and Quizzes:
Current Power Point Modules: After each module, there will be a quiz or a response due. Complete the quiz/response after going through the module.
Reading Assignment Quizzes: Many of the modules will also have a reading assignment. The ones with a PDF file already have a quiz associated with the reading. However, for all the other reading assignments, each student will develop ten or so short answer questions (multiple choice, true/false, etc.) for each chapter assigned. The goal is to select the most important concepts and ideas in each chapter and succinctly develop short questions. These will be submitted via WebCT as an attachment to your partner (please see above). If more than one student is enrolled in the class, each student should select a specific colleague for each chapter (switching around as much as possible depending on the number of students enrolled) and exchange the quizzes. After completing the quiz, exchange with the colleague 1) the correct answers; and 2) the page and full paragraph number on which the answer may be found, e.g., page 372, 2nd full paragraph. After receiving the correct answer, the student should critique briefly, e.g., no more than a paragraph, the questions submitted with an emphasis on the relevancy of the question.

All postings should be copied to Dr. v. as well. Further, if only one student is enrolled, questions and answers should be submitted to Dr. v via WebCT.

Research: Development of Species-Specific Invasive Species Module in PowerPoint

Each student must select an invasive species or an invasive species topic and develop a PowerPoint module that emphasizes three areas concerning that particular species: science, law, and management. The module should be posted to WebCT by the date noted on the schedule. The module should be both informative and enjoyable to read.

The module must be critiqued and evaluated by all other members of the class if more than one student is enrolled. These critiques should be posted to WebCT by the date noted on the schedule and the student who originated the module may make any changes to the module prior to the final class period.

*It is critical that the student cite all sources including photos and videos.* If the idea or photo is not your own (if the information did not come from your own scientific, legal, or management research), then you must give a reference citation at the exact place where the quote, paraphrasing, bulleted, photo, etc., is inserted in the PowerPoint. If you did not take the photo or your research did not arrive at a conclusion or a statistic, for example, then you must provide the source. Also, give a list of sources/references at the end of the presentation.

Critique and Evaluation of Colleagues' Submission

As discussed earlier, students should critique the questions and answers submitted. Species-specific modules should also be critiqued by everyone in the class. Modules that students create must also be critiqued.

Self-Evaluation

One of the most powerful complex structures of self-assessment in thinking is that of completing a global analysis of the strengths and weaknesses of your overall performance in class. Therefore, you are required to argue for a grade you believe you deserve and "make a case" for receiving a particular grade using criteria provided in this syllabus and citing specific evidence from your work throughout the semester. Understand that if you argue for a higher grade than you deserve, your grade will be negatively affected. However, an accurate documentation of a lower grade will raise that grade. For example, if you do an excellent job documenting that you have done "D" work on the course, then you will receive an "A" on the self-assessment, thereby raising your final grade by a certain percentage. For graduate students, the self-evaluation should be no fewer than four single-typed pages and no more than five single-typed pages.
What Each Grade Represents:

F - The essence of F-level work is that the student demonstrated a pattern of non critical thinking and/or failed to do the required work of the course. Typical characteristics of the work of a student who receives an F include: the student does not understand the basic nature of thinking in this subject area and does not display the related skills and abilities which are the heart of the course. The work at the end of the course is vague, imprecise, and unreasoned as it was in the beginning. There is little evidence that the student is genuinely engaged in the task of taking charge of her/his thinking. Many assignments appear to have been done pro forma with the student simply going through the motions without really putting any significant effort into thinking her or his way through them.

D - The essence of D-Level work is that it demonstrates only a minimal level of understanding and skill in critical thinking in the course area. D work at the end of the course shows only occasional environmental thinking skills. Most assignments are poorly done. There is little evidence that the student is "reasoning through the assignment in a critical manner. D work rarely shows any effort to take charge of ideas, assumptions, inferences, and intellectual processes. In general, D-level thinking lacks discipline and clarity.

C - The essence of C-level work is that it demonstrates more than a minimal level of skill, but it is also highly inconsistent with as many weaknesses as strengths. C-level work illustrates some but inconsistent achievement in grasping what environmental thinking is along with the development of modest critical thinking skills or ability. Though some assignments are reasonably well done, others are poorly done or at best are mediocre. On the whole, C-level work shows only modest and inconsistent reasoning and problem-solving skills.

B - The essence of B-level work is that it demonstrates more strengths than weaknesses and is more consistent at high level performance than C-level work. It nevertheless has some distinctive weaknesses though no major ones. B-level work represents demonstrable achievement in grasping what environmental thinking is. B-level work at the end of the course is, on the whole, clear, precise, and well-reasoned, though with occasional lapses into weak reasoning. The work demonstrates a mind beginning to take charge of its own ideas, assumptions inferences, and intellectual processes with the student often analyzing issues clearly and precisely.

A - The essence of A-level work is excellence overall with no major weaknesses. A-level work demonstrates real achievement in grasping what environmental thinking is, along with the clear development of a range of specific skills and abilities. The work at the end of the course is, on the whole, clear, precise, and well reasoned. The A-level students analyzes issues clearly and precisely, formulates information clearly, usually distinguishes the relevant from the irrelevant, recognizes key questionable assumption. A-level work displays excellent reasoning and problem-solving skills and is consistently at a high level of intellectual excellence.

SCHEDULE: Selected chapters as noted on Schedule below.


R&C = Invasive Species: Vectors and Management Strategies. By Ruiz and Carlton, Island Press, 2003,


PDF = Adobe Acrobat files.

The schedule is provided to give the student a guideline to complete the assignments. The student can complete the assignment at a faster pace than the one provided but all
Assignments must be completed by the deadline due date. If more than one student is enrolled, each student is in charge of rotating “partners” for the quizzes and all other material that should be exchanged. The WebCT will provide a list of all students enrolled. Remember, if you are late on an assignment, this is penalizing your partner.

<table>
<thead>
<tr>
<th>WEEK NUMBER AND MODULE</th>
<th>SUBJECT</th>
<th>READING: Text and Chapter</th>
<th>DEADLINES</th>
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| 1 - INTRO              | Introduction: Overview of problem; scope of introduced species; terminology; vectors and pathways | Cox: 1  
R&C: 1          | Quiz 1 by Friday; Evaluation of quiz by Sunday                         |
| 2 - SCIENCE & THEORY   | Impacts: What is the history; what is the status                         | Cox: 2-3  
D: 1-2          | Quiz 2 by Friday; Evaluation of quiz by Sunday                         |
| 3 – SCIENCE AND THEORY | Invasion Pathways; Propogative Plant Material; and Spontaneous & Accidental Invasions | R&C: 2, 3, 6      | Quiz 3 by Friday; Evaluation of quiz by Sunday |
| 4 - SCIENCE & THEORY   | Terrestrial and Aquatic Vertebrates                                     | D: 3, 4, 5  
Cox: 4, 5, 6    | Quiz 4 by Friday; Evaluation of quiz by Sunday                         |
| 5 – SCIENCE & THEORY   | Marine Plants; Terrestrial Plants; Vessel Transportation                | Cox: 9, 12  
PDF: GAO Invasive Report | Quiz 5 by Friday; Evaluation of quiz by Sunday                         |
| 6 – SCIENCE & THEORY   | Marine and Estuarine Environment                                        | PDF Module 6                           | Quiz 6 by Friday; Evaluation of quiz by Sunday |
NP: 5          | Quiz 7 by Friday; Evaluation of quiz by Sunday                         |
| 8 – LAW & MGMT.        | Foreign Laws, Treaties and Conventions                                  | R&C: 7                           | Quiz 8 by Friday; Evaluation of quiz by Sunday |
| 9 – LAW & MGMT.        | Invasive Species Management                                              | R&C: 9  
D: 7, 9  
Cox: 14-16    | Quiz 9 by Friday; Evaluation of quiz by Sunday                         |
| 10 – SCIENCE & THEORY  | Brown Tree Snake                                                         | D: 13  
Cox: 13          | Quiz 1 by Friday; Evaluation of quiz by Sunday                         |
| 11 – SCIENCE           | Science Priorities for Reducing the Threat of IS to Sustainable Forestry | PDF Module 11: Science Priorities for Reducing the Threat of IS to Sustainable Forestry; D: 6 | Quiz 11 by Friday; Evaluation of quiz by Sunday; Submit IS PowerPoint |
| 12 – SCIENCE & MGMT.   | Video: Invasive Species: Symposium Regulatory & Policy Issues Relating to Aquatic Invasive Species | Cox: 20-21  
R&C: 15  
D: 12, 14    | Quiz 12 by Friday; Evaluation of quiz by Sunday; Submit evaluation of Partner's IS PowerPoint by Sunday |
| FINAL WEEK: SCIENCE: Modeling | BONUS MODULE: Biological Invasions: Theory and Practice; SHARING AND EVALUATION OF DEVELOPED MODULES |                            | Submit all materials by Friday |
Statement on Academic Dishonesty. For many years Aggies have followed a Code of Honor: "Aggies do not lie, cheat, or steal, nor do they tolerate those who do." As such, it is the responsibility of students and faculty members to help maintain scholastic integrity at the University by refusing to participate in or tolerate scholastic dishonesty. The Aggie Code of Honor and the Scholastic Dishonesty sections in the TAMUG University Rules handbook will be the standard upon which scholastic integrity is maintained in this course. Academic dishonesty infractions will result in failure of this course as a minimum sanction.

Statement on American Disabilities Act. The American Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Director of Counseling and each of your course instructors.

Absences. The university views class attendance as an individual student responsibility. All students are expected to attend class and to complete all assignments. Please consult the University Student Rules for reasons for excused absences, detailed procedures and deadlines. If the absence is excused in the process as outlined in the University Student Rules, the student must be given the opportunity to make up the work. The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unauthorized absence. See Part III, Student Grievance Procedures, Section 49, Unexcused Absences, for more information on appealing an instructor's decision.

Family Educational and Rights to Privacy Act (FERPA). FERPA is a federal law designed to protect the privacy of educational records, to establish the right of students to inspect and review their educational records and to provide guidelines for the correction of inaccurate and misleading data through informal and formal hearings. To obtain a listing of directory information or to place a hold on any or all of this information, please consult the Admissions & Records Office.

NOTE: The Marine Policy site offers excellent research tools. For searches re the Marine Policy site, use Google at: http://www.tamug.edu/marinepolicy.