



Course Approval Form

For approval of new courses and deletions or modifications to an existing course.

More information is located on page 2.

Action Requested:

Create new course Delete existing course

Modify existing course (check all that apply)

Title Credits Repeat Status Grade Type

Prereq/coreq Schedule Type Restrictions

Course Level:

Undergraduate

Graduate

College/School: Department:

Submitted by: Ext: Email:

Subject Code: Number: Effective Term: Fall Spring Year Summer

(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Title: Current

Banner (30 characters max including spaces)

New

Credits: Fixed or Variable to

Repeat Status: Not Repeatable (NR) Total repeatable credits allowed:

Repeatable within degree (RD)

Repeatable within term (RT)

Grade Mode: Regular (A, B, C, etc.) Satisfactory/No Credit Special (A, B, C, etc. +IP)

Schedule Type Code(s): Lecture (LEC) Independent Study (IND)

Lab (LAB) Seminar (SEM)

Recitation (RCT) Studio (STU)

Internship (INT)

Prerequisite(s):

Corequisite(s):

Special Instructions: (restrictions for major, college, or degree; cross-listed courses; hard-coding; etc.)

Co-meets with BIOL 455/EVPP 420 but undergraduate and graduate students are graded differently and have separate assignments

Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	Notes (List additional information for the course)
This course provides laboratory, seminar sessions and field work to accompany EVPP 519-001 – marine mammal biology and conservation. Field work includes several day-long boat trips. The field course may take place in the US or abroad.	At present the two week residential field course takes place in Scotland at the University (of London) Marine Biological Station, which is equipped with boats and laboratories. The course has been running for 11 years, 2 years with GMU as a special topics course.
Indicate number of contact hours: <input type="text"/> Hours of Lecture or Seminar per week: <input type="text"/>	special <input type="checkbox"/> Hours of Lab or Studio: <input type="text"/>
When Offered: (check all that apply) <input type="checkbox"/> Fall <input checked="" type="checkbox"/> Summer	Spring <input type="checkbox"/>

Approval Signatures

Department Approval _____ Date _____ College/School Approval _____ Date _____

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

For Graduate Courses Only

Graduate Council Member

Provost Office

Graduate Council Approval Date

**Course Proposal Submitted to the Graduate Council
by
The College of Science**

1. COURSE NUMBER AND TITLE:

EVPP 520 marine mammal biology and conservation field course

Course Prerequisites:

Must have taken, or be simultaneously taking EVPP 519

Catalog Description:

This course provides laboratory, seminar sessions and field work to accompany **EVPP 519-001** – marine mammal biology and conservation. Field work includes several day-long boat trips. The field course may take place in the US or abroad.

2. COURSE JUSTIFICATION:

Course Objectives:

To provide laboratory exercises, field work and discussion seminar sessions to accompany the EVPP 419 lecture course.

Course Necessity:

Being able use marine mammal research technique in a field and laboratory setting, and to observe marine mammals in their native habitat rather than as images on a powerpoint slide will provide students with an excellent experiential learning experience.

Course Relationship to Existing Programs:

Will be a methods and techniques class for the MS/PhD in environmental science & policy.

Course Relationship to Existing Courses:

As noted above, provides field and lab exercises for EVPP 519. There are no other graduate classes specifically on marine mammals at GMU.

The class co-meets with an undergraduate version of the class (EVPP 420). However, grading standards and assignments are different for the two classes. The choice of topic for the written assignment is developed in consultation with the course instructor so appropriate topics for grad students that are more complex and detailed are assigned. The assignment length is substantially longer than for undergraduates (8000 words for graduates vs 4000 words for undergraduates) to a different grading rubric.

For the laboratory and field written component for graduate students requires that they conduct detailed statistical analyses (e.g. capture-recapture models, GIS-based distributional modeling), whereas undergrads only have to do simple descriptive stats, or regressions.

3. APPROVAL HISTORY: Approved ESP faculty 14 Sept 2010.

The course has been run for more than 10 years with UK students (undergraduate and graduate in co-meeting classes) from the Universities of Leicester, Sterling, Glasgow and London by the course proposer and for the past two years a “special topics” course for GMU students. The course has been very successful, infact the highest graded class in the entire major in terms of student satisfaction in the exit reviews of Leicester and Sterling students.

4. SCHEDULING AND PROPOSED INSTRUCTORS:

Semester of Initial Offering: Summer

Proposed Instructors: ECM Parsons

5. TENTATIVE SYLLABUS: See attached.

MARINE MAMMAL BIOLOGY & CONSERVATION

FIELD COURSE

EVPP 520 (1.0 credit)

Instructor: Dr Chris Parsons 3033 David King Hall E-mail: ecm-parsons@earthlink.net

This course provides laboratory, seminar sessions and field work to accompany **EVPP 519-001**. The field and laboratory work will be conducted at the University (of London) Marine Biological Station, Millport and in the Isle of Mull, Scotland.

Students during the Millport sessions will be split into four groups (a-d) who will rotate between boat-based field trips and laboratory work.

For the Mull section, students will be split into three groups (i-iii) for boat and land-based field trips. The course co-meets with EVPP 420/BIOL 448 but undergraduate and graduate students are graded differently – see below.

PROVISIONAL TIMETABLE

Day 1	-Arrive at Glasgow International Airport -Travel to Glasgow central train station by airport bus -Take bus to Largs -Take Ferry to Cumbrae -Take bus to Marine station 1800 Dinner 1900 Introduction 1930 Lecture	Information about program and safety talk Marine mammal identification
Day 2	0745 Breakfast 0830 Activities 1300 Lunch 1400 - 1800 Lectures 1800 Dinner 1900 Seminar session 2000 Video presentation	(a) Cetacean & Seabird Surveys (b) Seal behavior (c) Seal morphology lab (d) Otter diet lab
Day 3	0745 breakfast 0830 Activities 1300 Lunch 1400 -1800 Lectures 1800 Dinner	(d) Cetacean & Seabird Surveys (a) Seal behavior (b) Seal morphology lab (c) Otter diet lab

	1900 Seminar session 2000 Video presentation	
Day 4	0800 breakfast 0900 - 1300 Lectures 1300 lunch 1400 - 1600 Lectures 1800 Dinner	
Day 5	0800 breakfast 0900 - 1300 Lectures 1300 lunch 1500 Tour of Isle of Cumbrae 1800 dinner 1900 Seminar session 2000 Video presentation	
Day 6	0745 breakfast 0830 Activities 1300 Lunch 1400 -1800 Lectures 1800 Dinner 1900 Lecture	(c)Cetacean & Seabird Surveys (d)Seal behavior (a)Seal morphology lab (b)Otter diet lab
Day 7	0745 breakfast 0830 Activities 1300 Lunch 1400 -1800 Lectures 1800 Dinner 1900 Lecture	(b)Cetacean & Seabird Surveys (c)Seal behavior (d)Seal morphology lab (a)Otter diet lab
Day 8	0745 breakfast 0900 Leave by minibus for Isle of Mull 1500 ferry from Oban to Mull 1600 Bus to hostel 1630 Arrive at hostel 1930 Dinner 2030 Lecture	Marine mammal research techniques
Day 9	0800 breakfast 0900 – 1800 Activities	(i)Cetacean line transect and acoustic survey (ii)Whale and basking shark sighting survey (iii)Otter behavior, seashore ecology and marine geology field trip

	1900 Dinner 2000 Lecture	
Day 10	0800 breakfast 0900 – 1800 Activities 1900 Dinner 2000 Lecture	(iii) Cetacean line transect and acoustic survey (i) Whale and basking shark sighting survey (ii) Otter behavior, seashore ecology and marine geology field trip
Day 11	0800 breakfast 0900 – 1800 Activities 1901 Dinner 2000 Lecture	(ii) Cetacean line transect and acoustic survey (iii) Whale and basking shark sighting survey (i) Otter behavior, seashore ecology and marine geology field trip
Day 12	0800 breakfast 0930 depart hostel 1000 Ferry to Oban 1100 Bus to Glasgow 1400 Arrive Glasgow central station. 1500 Take bus to Glasgow International Airport	

ALL WRITTEN MATERIALS TO BE HANDED IN ON 1 AUGUST 2010

NOTES

Accommodation in Tobermory: for most students will be at Arle Lodge, but there are options given sufficient advance notice for some to stay at the Youth Hostel in Tobermory (slightly cheaper) or in B&B accommodation (more expensive).

At Tobermory students need to pay for their own meals including breakfast in the hostel, picnic lunch and evening meals cooked in the hostel or eaten out.

Accommodation in Millport will be at the University Marine Biological Station Hostel. This is in twin rooms, and all meals will be provided.

ASSESSMENT & GRADING

Students will be expected to:

- (1) Keep a scientific field journal detailing their field trip, species observed and methods practiced (300 points).
- (2) Students will analyze and write up (in scientific journal format) the data they collect on the cetacean and seabird surveys (200 points) and the seal behavior practical (200 points), the seal morphology lab (100 points) and the otter diet lab (100 points). Appropriate statistical methods will be utilized in the analysis of the cetacean and seabird survey and seal behavior activities.
- (3) Students will also be assessed on participation in field trips (5 field trips x 20 points each; 100 points total).

University grading procedures will be followed, i.e. 90 - 100 = A; 80 - 89 = B; 70 - 79 = C etc. The final exam will cover lectures or presentations, and any handouts. Any missed exam or written work not completed will be scored as zero.

NB: Graduate students and undergraduate students both participate in the field work, as the result of co-meeting classes, however, graduate and undergraduate students will have different assignments and will be graded to separate scales & rubrics, e.g. for the assignment undergraduates are expected to deliver a 4000 word minimum and graduate students have a 8000 word minimum. Graduate students are expected to complete more sophisticated statistical analyses upon the field and laboratory data (e.g. distribution modeling and line transect analysis). Graduate and undergraduate assignments and exams will be graded separately and to different standards.

Materials: Copies of lab and lecture materials will be provided to students on a CD.

Honor Code: Adherence to the *GMU Honor Code* is expected of all students.

Course textbook:

AN INTRODUCTION TO MARINE MAMMAL BIOLOGY AND CONSERVATION (2011) ECM Parsons, A Bauer, D McAfferty & AJ Wright. Jones & Bartlett Publishing.

Suggested additional reading:

BOOKS

MARINE MAMMALS: EVOLUTIONARY BIOLOGY (2006). A. Berta, JL Sumich & KM Kovacs. Academic Press.

MARINE MAMMAL RESEARCH: CONSERVATION BEYOND CRISIS (2005). JE Reynolds, WF Perrin, RR Reeves, S Montgomery & TJ Ragen. Johns Hopkins Press.

ENCYCLOPEDIA OF MARINE MAMMALS (2008). Eds. WF Perrin, B Wursig & JGM Thewissen. Academic Press.

MARINE MAMMALS: BIOLOGY & CONSERVATION (2001) Eds. PGH Evans & JA Raga. Kluwer Academic/Plenum.

THE BIOLOGY OF MARINE MAMMALS (1999) Eds. JE Reynolds and SA Rommell. Smithsonian Institution Press.

THE CONSERVATION OF WHALES AND DOLPHINS: SCIENCE & PRACTICE (1996) Eds. MP Simmonds & JD Hutchinson. Johns Wiley & Sons.

DOLPHIN SOCIETIES: DISCOVERIES AND PUZZLES. (1991) Eds. K. Pryor & KS Norris. University of California Press.

THE HANDBOOK OF MARINE MAMMALS. VOL 1, 2, 3, 4, 5, 6. (Various Years) Eds. SH Ridgway & R. Harrison. Academic Press.

IDENTIFICATION GUIDES

EYEWITNESS HANDBOOKS: WHALES, DOLPHINS & PORPOISES (1995) M Carwardine. Stoddart.

MARINE MAMMALS OF THE WORLD (2008) TA Jefferson, S Leatherwood & MA Webber. UNEP, FAO.

JOURNALS

- **AQUATIC MAMMALS**
- **MARINE MAMMAL SCIENCE**
- **JOURNAL OF CETACEAN RESEARCH AND MANAGEMENT (AFTER 1999)**
- **REPORTS OF THE INTERNATIONAL WHALING COMMISSION (BEFORE 1998)**
- **EUROPEAN RESEARCH ON CETACEANS**
- **LATIN AMERICAN JOURNAL OF AQUATIC MAMMALS**
- **TOURISM IN MARINE ENVIRONMENTS**

Also the following journals are not specifically cetacean-related, they often have regular marine mammal papers:

- **Journal of the Marine Biological Association of the United Kingdom**
- **Conservation Biology**
- **Marine Pollution Bulletin**
- **Mammal Review**
- **British Wildlife**
- **International Journal of Wildlife Law & Policy**
- **Tourism in Marine Environments**

FIELD COURSE TIPS

PACKING ADVICE

The weather in Scotland can be unpredictable. Be prepared for cold, windy and rainy conditions. A good waterproof and breathable coat is essential, as is a warm jacket or fleece.

Also be prepared for sunny conditions – sunglasses, a sun hat and sunblock are likewise essential. Pack your clothes in plastic bags, and any electronic equipment, in case of rain. There may be some hiking on the Mull wildlife trip, so sensible walking shoes are recommended., and trainers or similar for boat trips. Wellington boots will be available in Millport in case of rain.

Binoculars and a good camera are recommended (a good zoom – up to 35-300mm and a fast write time for digital cameras is ideal – dolphins and whales can move quickly!).

Electronic devices may require a square 3 pin 240v adaptor.

You may have to carry your luggage moderate distances (including from the train to the ferry, onto buses and upstairs) so try to pack light. There some are laundry facilities on Millport if needed.

FOOD

On the first day on Mull, the group will visit a supermarket to purchase food for breakfast, lunch and dinner for the Mull component of the trip. Students are responsible for purchasing this food and it is not covered by the course fee.

On Millport, meals will be provided in the field station canteen and are included in course costs. Please notify us in advance if you have specific dietary requirements (vegetarian/vegan, kosher, allergies etc).

HEALTH AND SAFETY

There are good doctor surgeries in Tobermory and in Millport. Please notify us of any health issues that we should be aware of in advance of the trip. Because of the numerous boat trips please also notify us if you cannot swim, and if you get motion sickness, please bring plenty of the appropriate medications – many of the boat trips are long and the seas off of Scotland can be rough.

