Course Approval Form

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

registrar.gmu.edu/facultystaff/curriculum

Action Requested:

[X] Create new course [ ] Inactivate existing course

[ ] Modify existing course (check all that apply)

[ ] Title [ ] Credits [ ] Repeat Status [ ] Grade Type
[ ] Prereq/coreq [ ] Schedule Type [ ] Restrictions
[ ] Other:

Course Level:

[X] Undergraduate
[ ] Graduate

College/School: College of Science **Department:** Environmental Science & Policy
Submitted by: Esther C. Peters **Ext:** 3-3462 **Email:** epeters2@gmu.edu

Subject Code: EVPP **Number:** 309
(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Effective Term: [X] Fall [ ] Spring [ ] Summer **Year** 2013 ~~2014~~ JB

Title: Current
Banner (30 characters max including spaces)
New: Introduction to Oceanography

Credits: (check one) [X] Fixed [ ] Variable 3 or to

Repeat Status: (check one) [X] Not Repeatable (NR) [ ] Repeatable within degree (RD) [ ] Repeatable within term (RT) Maximum credits allowed:

Grade Mode: (check one) [X] Regular (A, B, C, etc.) [ ] Satisfactory/No Credit [ ] Special (A, B C, etc. +IP)

Schedule Type: (check one) LEC can include LAB or RCT
[X] Lecture (LEC) [ ] Lab (LAB) [ ] Recitation (RCT) [ ] Internship (INT) [ ] Independent Study (IND) [ ] Seminar (SEM) [ ] Studio (STU)

Prerequisite(s):

Prerequisite(s): Two of the following lab sciences courses are required for a total of 8 credits: [GEOL 101 or 102], [EVPP 110 or 111 or 210], CHEM 211, [BIOL103 or 213], [PHYS 160 and 161 or 243 and 244].

Corequisite(s):

None

Instructional Mode:

[X] 100% face-to-face
[ ] Hybrid: ≤ 50% electronically delivered
[ ] 100% electronically delivered

Restrictions Enforced by System: Major, College, Degree, Program, etc. Include Code.

Are there equivalent course(s)? [X] Yes [ ] No
If yes, please list GEOL 309

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)
Introduces physical, chemical, biological, and geological aspects of oceanic environment.	May include field trip.

Indicate number of contact hours: Hours of Lecture or Seminar per week: 3 Hours of Lab or Studio: 0
When Offered: (check all that apply) [X] Fall [ ] Summer [ ] Spring

Approval Signatures

Department Approval — Date: 19 MAR 2014
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

INTRODUCTION TO OCEANOGRAPHY

BIOL 309 / GEOL 309, Fall 2013
T & R 3:00 to 4:15 p.m.
Planetary Hall, Room 129

COURSE INFORMATION

Instructors are available at office hours and by appointment. All official communication with instructor must be via email.

Dr. Randy McBride	3452 Exploratory Hall
Office hours:	T / R 4:15–5:15pm (August – October 24)
Email:	rmcbride@gmu.edu
Professor K. Patterson	1219 Exploratory Hall
Office hours:	T / R 1:00–2:30pm (31 October – December)
Email:	kpatter3@gmu.edu

Required Text: Trujillo, A.P. and H.V. Thurman. 2013. Essentials of Oceanography. 11th ed., **ISBN:** 9780321813947

COURSE OBJECTIVES AND OUTCOMES

Goal: To introduce the physical, chemical, geological, and biological aspects of the ocean environment. Students will develop an appreciation of how these aspects of the Ocean environment provide both resources and challenges to life on Earth. The approach is primarily descriptive, with emphasis on causative factors and interrelationships between physico-chemical and biotic factors.

Prerequisites: GEOL 101 and BIOL 103 or 213 or permission of instructor.

Course requirements: Attendance at lectures, reading of textbook chapters, completion of three written examinations, and using the World Wide Web.

Method of instruction: Lectures presented by course instructors during class times and reading of textbook chapters outside of class. Discussion of the material and asking of questions are encouraged by the instructors.

Methods of evaluation: Three written tests are given. Questions may be multiple choice, matching, fill-in the blanks, definitions, and essays. Each of the three tests is worth 100 points for 300 points total. The final exam may include comprehensive questions.

Lecture exams may cover lectures, text readings, slides, overheads, videos, and handouts. All exams must be taken as scheduled. **Make-ups will not be given**, unless for exceptional circumstances and only if scheduled **PRIOR** to the exam date with a legitimate excuse (e.g., signed doctor's excuse). Make-ups exams will be all essay. Otherwise, any missed exams will be scored a **zero**. ***In addition, all electronic devices must be turned off during exams and not touched or looked at while in the exam room***. NOTE: Using or looking at any electronic device

during an exam is a breach of the GMU Honor Code.

***iclicker quizzes*:** There will be 11 pop quizzes given throughout the semester worth 10 points each. The quizzes will cover material presented earlier in the lecture or previous lecture to make sure you are up to date with course information. The lowest quiz grade will be dropped; therefore, **no make-up quizzes** will be allowed. A total of 100 points is possible for this section.

Online resources: A web page is dedicated to this class that can help you learn concepts, study for tests, and further explore the world of oceanography. The web address is **www.mygeoscienceplace.com** and includes the following for each chapter in your textbook: 1) chapter objectives, 2) multiple-choice questions (*Understanding the Concepts*), 3) interactive maps and figures (*Visualizing Oceanography*), 4) fill-in the blanks, 5) web essays, and 6) hot links to important oceanographic sites (*Destinations [research sites] vs. General Links*). ***Note: We strongly recommend using this resource on a weekly basis and as an additional aid for preparing for tests.***

GRADING POLICY

GRADED MATERIAL	POINTS POSSIBLE
Lecture Exams (3 X 100 pts. each)	300
iclicker Quizzes (highest 10 out of 11, at 10 pts each)	100

Final grade will be assigned based on the following scale, with no exceptions:

GRADE SCALE:

A+ = 97-100%
A = 93 - 96%
A- = 90 - 92%
B+ = 87 - 89%
B = 83 - 86%
B- = 80 - 82%
C+ = 77 - 79%
C = 70 - 76%
D = 60 - 69%
F = 0 - 59%

GENERAL COURSE POLICIES

Attendance to class: mandatory, it is the best strategy for success.

Be considerate: please mute your cell phone during lecture time. Do not disturb your colleagues, come to class on time, but if you are late or need to leave earlier be noiseless and invisible.

Email: is the official way of communicating with students. Make sure that your ***GMU email*** is set up properly and it is working. Emails without subject may be deleted without opening.

CANCELED CLASSES: If an examination is scheduled for a day on which classes are canceled due to weather or any other reason, the examination will be given during the next scheduled class. Call (703) 993-1000 for official notification of canceled classes.

Disability Statement: If you have a documented learning disability or other condition that may affect academic performance you should: 1) make sure this documentation is on file with the Office of Disability Services (SUB I, Rm. 2500; 3-4306) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs

Honor Code: GMU students, faculty, and staff are bound by the GMU honor code. Cheating will be penalized as stated by the Code. Disciplinary action will be also taken against individuals behaving in a disruptive manner during class time.

Studying for Success: To achieve best results, for each hour of lecture, expect to spend a minimum of two hours of studying on your own. Spread that time throughout the week. Do not get behind with the *readings; trying to catch up with mega-study session is not very effective, it results in a terrible* headache and in memory black outs at exam time. If you have questions, please do not hesitate to ask. There are no dumb questions, only ignorance as a result of failure to seek an answer.

Introduction to Oceanography Lecture Schedule

Date	Lecture Topic	Text Chapter
Aug 27	Introduction to Planet "Earth"	1
Aug 29	Plate Tectonics & the Ocean Floor	2
Sep 3	Plate Tectonics & the Ocean Floor (continued)	2
Sep 5	Marine Provinces	3
Sep 10	Marine Sediments	4
Sep 12	Marine Sediments (continued)	4
Sep 17	Properties of Water	5
Sep 19	Chemistry of Seawater	5
Sep 24	**Exam I**	
Sep 26	Air-sea Interactions	6
Oct 1	Ocean Circulation, Horizontal & Vertical	7
Oct 3	Global Ocean Circulation	7
Oct 8	Waves and Water Dynamics	8
Oct 10	Waves and Water Dynamics	8
Oct 15	**NO CLASS, MONDAY CLASSES MEET TUESDAY**	
Oct 17	Tides	9
Oct 22	Tides	9
Oct 24	The Coast: Beaches and Shoreline Processes	10
Oct 29	**Exam II**	
Oct 31	The Coastal Ocean	11
Nov 5	Marine Life and the Marine Environment	12
Nov 7	Biological Productivity and Energy Transfer	13
Nov 12	The Plankton: Drifters of the Sea	13
Nov 14	Animals of the Pelagic Environment	14
Nov 19	Marine Mammals	14
Nov 21	Intertidal Communities & Coral Reef Ecosystems	15
Nov 26	Deep Sea Environments	15
Nov 28	**NO CLASS, HAPPY THANKSGIVING**	
Dec 3	Polar Seas	--
Dec 5	Marine Conservation & Climate Change	11, 16
Dec 10	**NO CLASS, READING DAY**	
Dec 12	**FINAL EXAM 1:30 – 4:15 p.m.!!**	