

UNIVERSITY OF MARY WASHINGTON – CHANGE COURSE CREDIT PROPOSAL

Electronically submit this completed form with attachments in one file to the Chair of the College Curriculum Committee.

COLLEGE (check one):	Arts and Sciences <input checked="" type="checkbox"/>	X	Business <input type="checkbox"/>	Education <input type="checkbox"/>
Proposal Submitted By: Pamela Grothe		Date Prepared: 9/27/2019		
Course Title: Oceanography				
Department/discipline and course number:		EESC 210		
Current number of credits:		3	Revised number of credits proposed:	
			4	
Will this course meet for at least 700 contact minutes for each credit hour proposed? <i>If no, provide a credit hour justification.</i>			YES	X
			NO	

Date of first offering of this revised course: FALL SEMESTER, year	2020
Proposed frequency of offering of the revised course:	Once per academic year; more as needed
List the faculty who will likely teach the revised course:	Dr. Pamela Grothe

This revised course will be (check all that apply):			
Required in the major*	<input checked="" type="checkbox"/>	General Elective	<input checked="" type="checkbox"/>
Elective in the major*	<input checked="" type="checkbox"/>	General Education**	<input checked="" type="checkbox"/>

**If the revised course changes major requirements in any way, a separate major program change proposal must be submitted.*

***AFTER the credit change is approved, a separate proposal must be sent to the General Education Committee.*

REQUIRED ATTACHMENTS:

1. **Rationale Statement** – Why is a change in this course’s credit hours needed? What purposes will the change in credit hours serve?
2. **Credit Hour Justification** (if required) – explain how this course will comply with the UMW Credit Hours Policy (D.5.1)
3. **Impact Statement** – Provide details about the Library, space, staffing, budget, and technology impacts created by changing the credit hours for this course. Include supporting statements from the Library, IT Department, etc. as needed. **Any change that impacts another Department must have a written statement (such as a copy of an email) from the Chair(s) agreeing to the change.**
4. **Syllabus** – include a copy of the course’s current syllabus **and** a revised syllabus showing how the course will change as a result of the addition (or deletion) of credit hours.

Revised Catalog Description (include if this is needed to accurately reflect changes in the course; suggested length is less than 50 words):
121 – Oceanography (4)
An introduction to the oceans. Physical and chemical processes affecting seawater; the geology of the seafloor; biological productivity in the oceans; and environmental challenges involving the oceans. Laboratory.

Department Chair Approval: Jodie Hayob

CCC Chair Approval: [Signature]

Dean Approval: [Signature]

Date: 9/30/2019

Date: 10/7/19

Date: 10/17/19

*COB and COE proposals approved by the Associate Dean.

BEFORE consideration by the UCC, the proposal must be approved the two levels noted above. Approval by the UCC, UFC, and Provost** are noted on the proposal “status history” at the UCC web site.

***Provost approval is required for program changes involving changes to credit hours of courses in the program’s requirements.*

EESC 210 Course Credit Change Justification

Pamela Grothe, Assistant Professor, Earth and Environmental Science

1. Rationale Statement:

I am proposing to add a two-hour lab to the current EESC 210 Oceanography class (proposed to be listed as EESC 121 – see Expedited Course Proposal). The lab will be the same as the current one-credit EESC 211 Oceanography Laboratory (which I propose to delete – see Expedited Course Proposal). The change in the General Education Requirements has motivated this proposal to merge the optional laboratory with the lecture class, thus changing it from three credits to four. Traditionally, Oceanography has 50 students, and the separate optional lab is capped at 16 students. If no change is made to the optional laboratory, then the 16 open lab seats will quickly be filled with students trying to fulfill their General Education requirements, leaving few to no seats available for students who need the laboratory for the Interdisciplinary Science Studies major or Earth and Environmental Science majors. Additionally, merging the laboratory with the lecture class, rather than just adding more seats to the optional lab, will help me align assignments across the lecture and laboratory. This change will also align with all the laboratory-based classes in EESC, as currently, Oceanography is the only course with a separate optional lab.

2. Credit hour justification:

The course will continue to meet for either 50 minutes on Monday, Wednesday and Friday or for 1 hour 15 minutes on Tuesday and Thursday. The required laboratory will meet for 1 hour 50 minutes, similar to the other 4-credit introductory science laboratories in EESC (e.g., EESC 111 and 120).

3. Impact Statement:

The largest impact this will have is coordinating laboratory space with other EESC introductory labs. However, with the new Jepson addition where EESC has dedicated labs for both the Introductory Geology classes and the Introductory Environmental Science classes, I do not expect scheduling to be an issue. This proposed change will not affect any other department.

There would only be a very slight increase for funding for supplies due to the additional students in the laboratory, which would be covered by the department with no issue. Many of the laboratories are completed in the computer lab as students work with real oceanographic datasets, which require no funds. The new Jepson addition has a computer lab dedicated for EESC classes and can accommodate 24 students, the new proposed number of students for each lab section.

4. Syllabus:

Attached are the Spring 2018 syllabi for EESC 210 and 211 and then the revised syllabus including all the proposed changes (course name, prerequisites and required lab).

**EESC 210: Oceanography
Spring 2018**

Instructor Details		Course Details	
Instructor Name:	Pamela Grothe	Lecture:	9:30 – 10:45 T/TH Jepson 100
Office:	439 Jepson	Labs:	<u>EESC 211</u> : Thur. 2:00-3:50 (Optional 1-cr course) Jepson 109
Email:	pgrothe@umw.edu	Required	<u>Lecture</u> : Invitation to
Phone:	540-654-1423	Texts:	Oceanography by Paul R. Pinet (7 th Edition)
Office Hours:	Tues: 11:00 – 2:00 Wed: 10:00-12:00 Or by Appointment		

“The living ocean drives planetary chemistry, governs climate and weather, and otherwise provides the cornerstone of the life-support system for all creatures on our planet, from deep-sea starfish to desert sagebrush. That’s why the ocean matters. If the sea is sick, we’ll feel it. If it dies, we die. Our future and the state of the oceans are one.” -- Sylvia Earle, former chief scientist of NOAA

Course Description:

The objective of this class is to introduce the physical, chemical, biological, and geological characteristics of the ocean. The first half of the semester will be devoted to establish a basic understanding of the ocean crust and its origins, the chemistry of sea water, and the physical properties of waves, and the circulation of oceans waters (shallow & deep). The latter half of the course will focus on environmental issues that includes coastal erosion, climate change, and pollution. We will also consider the biological structure of the ocean ecosystem in the context of ocean productivity and sustainable fisheries. Graduates of this class should be well informed about the importance of the ocean system which should serve as an inspiration to pursue advanced oceanographic topics at the graduate level.

Student Learning Outcomes:

By the time you finish this course, it is my goal that you will have a better understanding and a deeper appreciation of the ocean. You will be able to

- A. **Apply** the plate tectonics theory to the origin, evolution, and features of ocean margins and basins and ocean crust.
- B. **Analyze** and interpret the origin, distribution, and evolution of ocean sediment.
- C. **Interpret** the origin of, impacts on, and consequences of the seawater's chemistry and physical properties on biological and physical systems.
- D. **Describe** and **interpret** the causes, effects, and interrelationship of atmospheric processes and the oceans, including ocean circulation, terrestrial weather patterns and climate change.
- E. **Evaluate** the relative contributions of coastal processes, such as swell, tides, and currents, to explain origins and consequences of coastal landforms and processes.
- F. **Evaluate** society's impacts on the ocean and the impacts of marine hazards and resources on society.

Pre- or Corequisite:

EESC111 – Our Dynamic Earth

Email:

You are required to use your official University of Mary Washington (UMW) email account for this course. I will frequently send announcements to the class via email. It is **your** responsibility to check your UMW email and read these messages. **You** will be held responsible for any information you miss if you do not check your UMW email. I will not send emails to your personal accounts. Additionally, if you email me, I will do my best to respond to you within 24 hours. **I do not check my email between the hours of 5pm and 8am**, so if you email me a question at night, do not expect to get a response until the following morning at the very earliest. **When corresponding via email, please use professionalism. All emails should exercise proper grammar, complete sentences, and punctuation.**

Canvas:

I will use Canvas in this course to post lecture slides, assignments, announcements, and grades. I will do my best to post lecture slides before class. Be sure to change your Canvas settings accordingly so you can guarantee you will receive any announcements I may post. Canvas may calculate grades slightly differently than I do. **Keep this in mind: your grade on Canvas may not reflect the actual grade I calculate.**

Activities and Assignments:

Exams: You will have three exams and a final. The three in-class exams are not cumulative. However, the final will be **cumulative**.

Activities: There may be in-class activities and/or homework that require your participation throughout the semester. They are intended to reinforce concepts in lecture.

Term Paper: I will assign a 4-5-page research paper after the break. The topics may be anything oceanographic, but I encourage you to pick something relative to today's society (e.g. coastal development, coral reef bleaching, plastics in the ocean, or global warming). This is to provide you with a deeper understanding on one particular topic and hopefully provide me with an interesting read! The topic must be approved by the instructor. Paper is due last day of class.

Course Policies:

Attendance:

I will be taking daily attendance which will result in your participation grade. There are 25 days of lecture (not including exams and spring break). You will receive 4 points for each class that you attend, for a total of 100 points. You will only be excused if you have a valid reason for missing class (e.g. illness, sports game, etc.) which you must communicate with me as soon as possible. Your participation grade is worth 10% of your grade.

Tardiness and Disruptiveness:

I realize that sometimes there are circumstances where you will be late and I sympathize with that, but continual tardiness and disruption of the class (including talking during class, attending class under the influence, and leaving lecture early) will not be tolerated and continual violators will be asked to leave for the rest of the class period.

Late/Missed Assignments:

If you have a scheduling conflict with an *exam*, please notify me **immediately**. This means, if you are sick, I expect a phone call or email before class. Make-up exams will not be given unless there is a valid reason and will be administered at my discretion. Exams must be made up within one week of the exam date. You must schedule a time with me to make up an exam.

PLEASE NOTE: I understand that emergencies do occur; therefore, if there has been an unforeseeable event, please contact me as soon as possible to let me know. We can schedule a time for you to make

up an assignment. It is important that you communicate with me. Since you know these dates ahead of time, please do not schedule routine doctor appointments during lecture, especially exams.

Technology:

Cell phones must be in silent mode and stowed away during lecture and lab. A ringing phone during class is very distracting to your fellow students and me. Texting, using the Internet, and answering your phone during class is not permitted. Cell phones will not be permitted during exams. ***Using a cell phone during an exam will lead to a ZERO on the assignment.***

Computers/Tablets: If you prefer to take notes on your laptop computer, you are required to sit in the first few front rows. If I find you using social media, web-searching, emailing, etc. during class, you will be asked to put your computer away.

Honesty and Integrity:

All students are expected to adhere by the University of Mary Washington Honor Constitution. The pledge: "I pledge that I have neither given nor received unauthorized help on this work" must be written on ***all*** graded work.

Students with Disabilities:

If you have a disability and require accommodations in this class, please meet with me as soon as possible to discuss your learning needs. If you wish to request reasonable accommodations, please register with the Office of Disability Resources (401 Lee Hall; phone: 540-654-1266). The office will require appropriate documentation of the disability. All information you discuss with me and the Office of Disability Resources will be kept confidential. Please inform me of any accommodations during the first few weeks of class, if possible.

How you will be graded:

The following grading scale will be used:

Grading Scale		
A A-	94-100% 90-93%	Performance demonstrates an exceptional understanding of the material; student is capable of synthesizing and applying concepts to new problems; almost no factual errors
B+ B B-	87-89% 83-86% 80-82%	Performance demonstrates a good understanding of the material; student is capable of some synthesizing of concepts to new problems; few factual errors
C+ C C-	77-79% 73-76% 70-72%	Performance demonstrates competency; student has a basic understanding of the concepts; student occasionally is able to apply concepts to new problems; some factual errors (but most major issues are retained).
D+ D D-	67-69% 63-66% 60-62%	Performance does not demonstrate a complete knowledge of material; factual errors common; minimum passing grade for UMW
F	0-59%	Performance fails to meet minimum standards for passing; numerous factual errors; student is incapable of synthesizing concepts

Mid-term grades will be posted. Any mid-term grade lower than a 70% (C-) will be considered unsatisfactory.

Course Grade Proportions	
Participation	10%
Research Paper	10%
Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	35%
Total:	100%

Schedules:

Here is the tentative lecture schedule. The time it takes me to discuss specific topics varies; therefore, the schedule is subject to change. Exam dates should never change, but if I find it necessary to change an exam date, I will discuss it with the class first. I will keep an updated schedule on Canvas under *Files*. ☺

Tentative Lecture Topic Schedule			
Week:	Date:	Lecture	Chapter
Week 1	1/16	Introduction to Oceanography	Chapter 1
	1/18	Introduction to Oceanography	Chapter 1
Week 2	1/23	The Earth Beneath the Sea	Chapters 2 & 3
	1/25	The Earth Beneath the Sea	Chapters 2 & 3
Week 3	1/30	Marine Sediments	Chapter 4
	2/1	Exam #1	Chapters 1, 2, 3, 4
Week 4	2/6	Chemistry of Seawater	Chapter 5
	2/8	Ocean Circulation	Chapter 6
Week 5	2/13	Ocean Circulation	Chapter 6
	2/15	El Nino	
Week 6	2/20	Waves in the Ocean	Chapter 7
	2/22	Waves in the Ocean	Chapter 7
Week 7	2/27	Tides	Chapter 8
	3/1	Exam #2	Chapters 5, 6, 7, 8
Week 8	3/6	Spring Break: No Class	
	3/8	Spring Break: No Class	
Week 9	3/13	No Class – Prof. on field expedition studying El Nino and coral reefs ☺	
	3/15	Shallow Water Oceanography	Chapter 11
Week 10	3/20	Coastal Management of Estuaries and Marshes	Chapters 11 & 12
	3/22	Marine Ecology	Chapter 9
Week 11	3/27	Ocean Productivity	Chapter 10
	3/29	Marine Habitats and Coral Reefs	Chapters 12 & 13
Week 12	4/03	Marine Habitats and	Chapters 12 & 13

		Coral Reefs	
	4/5	Exam #3	Chapters 9, 10, 11, 12, 13
Week 13	4/10	Law of the Sea	Chapter 14
	4/12	Marine Pollution	Chapter 15
Week 14	4/17	Marine Pollution	Chapter 15
	4/19	Global Climate Change	Chapter 16
Week 15	4/24	Global Climate Change	Chapter 16
	4/26	Extra Day (which we will need I'm sure ☺)	TDB
Week 16	5/1 (Tue)	8:30 – 11:00 Final Exam	Cumulative

EESC 211: Oceanography Spring 2018

Instructor: Pamela R. Grothe
Office: Jepson 439
Phone: 540-654-1423
Email: pgrothe@umw.edu

Where: Jepson 109
Time: Thur. 2:00-3:50 PM

**Attendance is mandatory. Missing more than one lab results in an automatic F. This lab is optional and is for students who wish to gain an in-depth understanding of the topics we cover in lecture and explore additional oceanographic topics.*

Tentative Lab Schedule			
Week	Day:	Topic	Assignment/Project
Week 1	1/18	Lab Overview	Reflection on what you think are the major oceanographic issues of today
Week 2	1/25	Exploring Concepts in Oceans	Google Earth Investigation
Week 3	2/1	Marine Sediments	Examine Marine Sediments
Week 4	2/8	ODP-DSDP Project Week 1	Design Cruise & Make Profile
Week 5	2/15	ODP-DSDP Project Week 2	Research for ODP Project
Week 6	2/22	Ocean Circulation	Density Experiment
Week 7	3/1	El Nino	Interactive El Nino
Week 8	3/8	<i>Spring Break – No Lab</i>	<i>Spring Break – No Lab</i>
Week 9	3/15	<i>No Lab – Prof. Field Expedition</i>	<i>Follow my progress on twitter! @IrockclimateUMW</i>
Week 10	3/22	Waves and Tides	Chesapeake Bay Investigation
Week 11	Saturday Field Trip 3/31	Coastal Erosion and Engineering (3/4 Day)	Westmoreland State Park and Colonial Beach
Week 12	4/5	Coral Reefs	Interactive Coral Bleaching
Week 13	Saturday Field Trip 4/14	Potomac Estuary Cruise '18 (Half Day)	Field Trip on UMW Research Boat
Week 14	4/19	Oceans Movie	<i>Chasing Coral</i> Reflection
Week 15	4/26	No Lab ☺	None

All lab assignments are weighted equally and will be averaged for your final grade. Note, your lab grade is an independent grade from the Oceanography lecture class.

** I need at least one volunteer to drive the van for field trip days.*

** This is a tentative outline of what we may cover but the lab/assignment may change.*

**EESC 121: Oceanography
Fall 2020**

Instructor Details		Course Details	
Instructor Name:	Pamela Grothe	Lecture:	9:30 – 10:45 T/TH Jepson 229
Office:	360 Jepson	Labs:	<i>Tues. 2:00-3:50</i> <i>Thur. 2:00-3:50</i> <i>Jepson xxx</i>
Email:	pgrothe@umw.edu	Required	<u>Lecture:</u> Invitation to
Phone:	540-654-1423	Texts:	Oceanography by Paul R. Pinet (7 th Edition)
Office Hours:	Tues: 11:00 – 2:00 Wed: 10:00-12:00 Or by Appointment		

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Course Description:

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Activities and Assignments:

Labs: Attendance is mandatory. Missing more than one lab results in an automatic F. The purpose of the lab is to provide you with more experience working with oceanographic concepts and exploring real data. There is no lab manual. I will provide you with all the materials needed for the lab. The labs are intended to be completed in class; however, there may be times where you need to either complete a prelab assignment or complete your lab after class. Additionally, there will be an optional field trip opportunity for you to board the UMW research vessel for a cruise on the Potomac River. ☺

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Total:	100%

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		Introduction to Oceanography	Chapter 1
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		The Earth Beneath the Sea	Chapters 2 & 3
Week 3		Marine Sediments	Chapter 4
		<i>Exam #1</i>	<i>Chapters 1, 2, 3, 4</i>
Week 4		Chemistry of Seawater	Chapter 5
		Ocean Circulation	Chapter 6
Week 5		Ocean Circulation	Chapter 6
		El Nino	
Week 6		Waves in the Ocean	Chapter 7
		Waves in the Ocean	Chapter 7
Week 7		Tides	Chapter 8
		<i>Exam #2</i>	<i>Chapters 5, 6, 7, 8</i>
Week 8		<i>Spring Break: No Class</i>	
		<i>Spring Break: No Class</i>	
Week 9		Shallow Water Oceanography	
		Coastal Management of Estuaries and Marshes	Chapter 11
Week 10		Marine Ecology	Chapters 11 & 12
		Ocean Productivity	Chapter 9
Week 11		Marine Habitats	Chapter 10
		Marine Habitats	Chapters 12 & 13

Week 12		Coral Reefs	Chapters 12 & 13
		Exam #3	Chapters 9, 10, 11, 12, 13
Week 13		Law of the Sea	Chapter 14
		Marine Pollution	Chapter 15
Week 14		Marine Pollution	Chapter 15
		Global Climate Change	Chapter 16
Week 15		Global Climate Change	Chapter 16
		Extra Day (which we will need I'm sure ☺)	TDB
Week 16		Final Exam	Cumulative

Tentative Lab Schedule			
Week	Day:	Topic	Assignment/Project
Week 1		Lab Overview	Reflection on what you think are the major oceanographic issues of today
Week 2		Exploring Concepts in Oceans	Google Earth Investigation
Week 3		Marine Sediments	Examine Marine Sediments
Week 4		ODP-DSDP Project Week 1	Design Cruise & Make Profile
Week 5		ODP-DSDP Project Week 2	Research for ODP Project
Week 6		Ocean Circulation	Density Experiment
Week 7		El Nino	Interactive El Nino
Week 8		Spring Break – No Lab	Spring Break – No Lab
Week 9		Waves and Tides	Chesapeake Bay Investigation
Week 10		Coastal Erosion	TBD – potential Field Trip
Week 11		Marine Habitats	TBD
Week 12		Coral Reefs	Interactive Coral Bleaching
Week 13		Potomac Estuary Cruise '18	Field Trip on UMW Research Boat
Week 14		Marine Pollution	TBD
Week 15		Climate Change	TBD