Syma Ebbin, Associate Professor in Residence, Interim Director Maritime Studies (MAST) Program

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The course would be a new 2000-level within the MAST Program as well as a Gen Ed with the environmental literacy designation (EL)

Marine Environmental Policy; Maritime Studies (MAST) 2XXX (EL)

During the grant period, the primary task will be to develop a detailed course outline with associated readings/bibliography, draft lectures and class activities. The course is inherently interdisciplinary and will draw disciplinary insights from the natural and social sciences including marine science, ecology, law, political science, anthropology, geography and public administration. It will be grounded in the theoretical perspectives of property theory and utilize a policy sciences approach. The course will track the ways humans have perceived, used and managed marine systems and resources; how these systems have contributed to the development of human societies; examine new and emerging threats to the marine environment; explore whether the Anthropocene necessitates new approaches to marine policy and governance; and finally, engage students in critical and creative problem-solving to develop new approaches for a sustainable future.

In addition to developing the nuts and bolts of the course, I will explore avenues for integrating a service learning component into the course. In consultation with the Blue Plan Committee, the legislated body addressing marine spatial planning in Connecticut waters, I will identify student projects that will provide the students with service-oriented experiential education and provide the Blue Plan Committee with end-products useful to completing their mission. Service learning opportunities may also take advantage of the needs other mission-relevant organizations.

Finally, I will develop several relevant field trips and class activities to provide students with hands-on learning opportunities. Specifically, I will engage with Project Oceanology, a marine science educational organization aimed primarily at middle and high school students and housed on the Avery Point campus, to develop several cruise-based field trips in marine policy targeting undergraduates. Potential topics include marine spatial planning, offshore renewable energy development, fisheries management, non-point source pollution, adaptation to climate change and sea level rise, invasive species, coastal development and working waterfronts.

How do you intend to evaluate project objectives once the course, as proposed, is offered? Please identify intended learning outcomes and assessment tools. The course is designed to give students a basic understanding of issues, theories and methodological approaches of marine policy and management as they apply to coastal and marine resources and environments. Students will develop foundational skills in critical thinking, communication and creative problem solving. The course
will survey important resource and environmental challenges and provide insights into how these problems are being addressed or could be more effectively addressed.

Student assessments will include two exams and an end of year service-based project that will entail an in-class presentation. Students will complete in-class and at-home assignments related to field trips, readings and debate topics. In addition, students will be responsible for weekly readings and will be assessed on their skill in participating in class discussions and debates.

For learning outcomes, at the end of the course students will have a solid understanding of international and domestic (US) marine environmental policy. Students should be able to answer the following questions: How has property theory shaped our policies in marine environments? How have humans used and impacted marine environments and resource overtime? What strategies have humans devised to manage these uses? What are the methods, and barriers to developing marine spatial planning? What is the UN Convention on the Law of the Sea (UNCLOS) and what does it entail? What is the Magnuson Stevens Fisheries Conservation and Management Act and what institutional changes did it precipitate in US fisheries management; how has it been amended over the years? How does the U.S. currently engage in international maritime policy? How have marine environmental disasters (such as Exxon Valdez and Deepwater Horizon oil spills) of the past influenced current and prospective practices?

Content-based knowledge will be measured with multiple choice, matching, definitional, short and long essay exam questions as well as during class discussions. Critical thinking skills will be evaluated with writing assignments, essay exam questions and during class discussions and debates. Communication skills will be assessed during class discussions, debates and in relation to the end of semester conference-style visual presentation of their service learning project. Problem-solving skills will be assessed during class discussions and role-playing activities as well as in structured assignments. The completion of the service learning project will be accompanied by a series of critical reflections written by students throughout the semester and used to gauge student engagement, progress and depth of learning. Students will also peer review their fellow classmates’ service project reports and evaluate presentations as additional sources of assessment.

7. The Course is envisioned to be designated under the new GEOC Environmental Literacy category (E). But will more broadly allow students to acquire intellectual breadth as they focus on the marine environment from an interdisciplinary perspective. The course does not require prerequisites and is aimed at students from diverse departmental affiliations – therefore it is accessible. The course will be taught by a faculty member. The course will be intellectually rigorous. Students will evaluate marine policies for their efficacy in achieving their stated goals as well as in achieving sustainable outcomes, allowing students to engage in critical thinking and assessment. Class discussions will be based on readings allowing students to read critically and develop evidence-based arguments. The class will include case studies
drawn from different cultures and countries, encouraging students to consider issues of environmental justice, equity, human rights, environmental stewardship and ethical behavior. Finally, students will be introduced to social science research methods, asked to conduct research on various topics, to communicate their findings both in writing and orally and to engage in problem-solving.

8. This course is envisioned to be a GEOC designated Environmental Literacy course, that will provide students with a critical understanding of the complex and reciprocal relationship between humans and the marine environment, focusing on the various ways humans impact marine systems, the contributions that these systems provide to humans, the governance strategies humans have developed to guide their use of these systems. These strategies include local, state, national and international legal frameworks, public policies, institutional approaches to management, sociocultural practices and ethical norms; and their performance will be evaluated to assess their relative efficacy in creating sustainable outcomes.

9. **How will the course add to and/or enhance existing course offerings?**
   This course is envisioned to become a core MAST offering. MAST is in the process of reformatting the major requirements to move from six disciplinary tracks to four themed tracks (Blue Humanities, Maritime Archaeology, Marine Policy, Fisheries). This proposed course will be the cornerstone requirement of the Marine Policy track. In addition, MAST is working to develop a stand along Marine Policy minor and this course will be a core requirement of this minor. It is projected that this course will be a popular elective among upper level Marine Science and American Studies students at the Avery Point campus.

10. **How will your course serve as a model to assist others in their efforts to improve the general education curriculum?**
    As one of the first courses developed specifically to carry the environmental literacy designation, this course will serve as a model to others seeking the same designation. With its focus on the development of service learning projects and field-based activities, this will provide a model for the integration of experiential activities within the GEOC system. In addition, the course will allow students to develop skills in critical thinking, analysis, research and integrative problem solving that are broadly applicable to other disciplines.

11. **Is your proposal linked to any others being submitted in this competition?** No
12. **Has this course even been submitted for this grant in the past?** No
13. **Has this course been funded by this grant in the past?** No
    **Has this course or will this course be funded by any other source?** No
14. NA
15. Complete the budget form (attached)
16. Program Director statement of support (sent separately and attached)
17. For new course proposals, include if possible, a draft syllabus, or a preliminary reading list and possible assessments. (Attached)
<table>
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<th>Fiscal 2019</th>
<th>Amount budgeted</th>
<th>Fringe for Summer Salary **</th>
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* Buyout: Funds can be used to pay an adjunct to teach a class normally taught by full-time faculty member during the Spring semester so that the faculty member can devote time to course development.

** The 2019 Fiscal Year fringe rate for Special Payroll summer salary is currently 23.6%. (See [http://budget.uconn.edu/fringe-benefit-rates/](http://budget.uconn.edu/fringe-benefit-rates/))

**Justification:**

*Please explain how the expenditure of all funds will support this proposal (100-400 words).*

*Please note that participants should explain how any expenses, especially travel, will benefit the COURSE, not necessarily the professional development of the proposer.*

The request budget is to cover two weeks of summer salary to offset the time involved in developing the course. The fringe was determined as 26% of the effort. One hundred dollars of travel was included to offset travel to Blue Plan Committee meetings.

**DRAFT**

**Maritime Studies (MAST) 2XXX**

**Marine Environmental Policy**

**Proposed Syllabus**

**Class Schedule:** TBD Fall 2019 or Spring 2020

**Location:** TBD AVPT Campus

**Instructor:** Dr. Syma Ebbin

**Contacts:**
- Office: Marine Science Building Rm 301D
- Office Phone: 860 405-9278
- E-mail: syma.ebbin@uconn.edu

**Office Hours:** TBD and by appointment

Also considering reading from:

Additional resources: Additional required readings, as indicated in the syllabus, are available on the ARE 2235 HuskyCT website under the Additional Readings tab (H).

Catalogue description: Introduces students to the historical and contemporary challenges and achievements associated with the governance of marine and coastal environments and resources at the international, national, state and local levels. Topics include fisheries management, aquaculture production, marine biodiversity, non-renewable and renewable ocean energy resources, marine pollution, marine transportation, international ocean governance, anthropogenic climate change impacts to ocean resources and services, ecosystem-based management, marine spatial planning, marine protected areas, management of polar areas, environmental justice in the marine context. Designed for students with diverse departmental affiliations.

Course Goals and Objectives: Students will become familiar with the issues, theories, methodological approaches, and policy implications of marine environmental and resource policy and management. Students will acquire important critical thinking, research, communication, analysis, and problem-solving skills and tools. The course will survey important marine resource and environmental challenges and provide insights into how these problems are being or can be effectively addressed.

The specific objectives of the course are:
1. To understand the complex reciprocal relationship between humans and the marine environment.
2. To introduce basic theories and methodological approaches that can be used to understand and analyze marine resource and environmental management and policy challenges
3. To identify and study important global, national and local marine resource and environmental issues and problems.
4. To become familiar with international, national, state and local policy and management responses to these problems.
5. To apply the concepts and approaches introduced during the course to assess alternative strategies and engage in creative problem solving.

Lecture Topics and Reading Assignments

**Week 1:**
A: Course introduction
Topics: Overview of human impacts on marine systems and human benefits derived from ecosystem resources and services derived from marine systems
Readings: Syllabus, handouts

B: Marine Environments and Resources Overview
Topics: Overview of marine and coastal environments, including biotic and abiotic processes and components, resources and ecosystem services.
Readings: Chapter 1 MP

**Week 2:**
A: Frameworks and Theories
Topics: Tragedy of the Commons and its Critiques,

B: Policy sciences analysis methods
Topics: Introduction to policy science approaches to policy analysis; theories of policy development; policy process and actors
Readings: Chapter 3, 4

Week 3
A: Introduction to ocean governance and policy
Topics: international law overview, international ocean regimes and organizations, UN Convention on the Law of the Seas; domestic (US) ocean policy
Readings: Chapter 2
B: Fisheries policy management
Topics: international, federal, state fisheries-relevant laws, policy and management; fish, shellfish, marine mammal fisheries will be examined
Readings: Chapter 6
Field Trip to attend nearby meeting of the New England Fishery Management Council

Week 4:
A: Marine Biodiversity
Topics: International and national efforts to address threats to marine biodiversity
Readings: Chapter 5
B: Marine Protected Areas (MPAs)
Topics: International, foreign and US efforts to establish MPAs, sanctuaries, no-take zones
Readings: Chapter 10

Week 5:
A: Aquaculture Production
Topics: federal, state and local policy and management of coastal and offshore aquaculture operations
Readings: TBD
Field trip to local aquaculture facility
B: Whaling and Conservation
Topics: cross-cultural examination of historical and contemporary whaling; and international and domestic policies focused on managing whaling; International Convention for the Regulation of Whaling, International Whaling Commission and the US Marine Mammal Protection Act, indigenous whaling, environmental justice issues
Readings: TBD
Role playing debate

Week 6 Ocean energy
A: Ocean Energy: Renewables
Topics: renewable energy technologies, siting, production, transport and storage impacts on marine systems, include focus on wind, hydrokinetic (wave, current, tidal), solar, hydrogen, OTEC
Readings: TBD
B: Ocean Energy: Non-Renewables and mining
Topics: fossil fuel prospecting, drilling, transport and marine systems, focus on oil and gas, methane clathrates, manganese nodule and other mineral extraction
Readings: chapter 9
Ocean energy debate

Week 7
A: Marine Spatial Planning (MSP)
Topics: introduction to Connecticut Blue plan, policy development, stakeholder engagement, examination of efforts to create a marine spatial plan for Long Island Sound; case study focus on cable placement in coastal Connecticut relevant to offshore wind farm development
Readings: Chapter 10
Blue Plan Service Learning Project development and engagement
Field trip with Project Oceanoology to engage in MSP relevant to energy cable placement in local waters
Field Trip to attend Blue Plan Committee meeting
B: Working waterfronts
Topics: coastal development, the importance of working waterfronts, the diminished status of these areas and implications for coastal economies, Coastal Zone management Act, Connecticut Coastal Management Act, local governance
Readings: TBD

Week 8: Bottom up approaches to marine policy
A: Role of Civil Society in Marine Policy
Topics: role of civil society in policy process and formulation; NGO participation in research, advocacy, outreach and creation of marine policy;
Readings: TBD
Field trip to Mystic Aquarium to engage with free choice learning and advocacy by NGOs
B: Role of culture in marine policy
Topics: indigenous marine resource management; co-management and self-management
Readings: Prof. S. Ebbin (TBD)

Week 9: Policies aimed at Marine pollution
A and B: Marine Pollution, plastics,
Topics: marine pollution including chemical, nutrient, plastics, biological (invasives), noise, etc. and international and domestic efforts to regulate such as MARPOL, CWA
Readings: (H) Polymers are Forever in the World Without Us; Marine Pollution in the US (Pew)

Week 10
A: Marine Transportation and Safety
Topics: marine transportation and safety policy, the operation and regulation of shipping from international and domestic experiences
Readings: chapter 7
B: Dredging
Topics: Need for, impact and regulation of dredging operations
Readings: EPA and ACOE EIS and documents related to Long Island Sound Dredge Disposal Cite Permitting
Debate on dredging disposal site selection
Week 11
A and B: Anthropogenic Climate Change
Topics: Climate change impacts on marine systems and resources; policies aimed at mitigation and adaptation to climate change; resilience planning and policies in coastal areas;

Week 12
A: Human rights, Environmental justice and Marine policy
Topics: review of environmental justice (EJ) theory and examination of how EJ issues play out in the marine policy context. Focus on contemporary issues and case studies, including slavery at sea and within high seas fisheries; indigenous peoples conflicts over marine resources
Readings: TBD
B: Polar Ocean Governance
Topics: Arctic and Southern Ocean governance
Readings: chapter 8

Week 13
A: Monitoring, surveillance and enforcement at sea
Topics: International and domestic enforcement; Role of the US Coast Guard in Enforcement
Readings: TBD
Field Trip or guest speaker: USCG (New London)
B: Ecosystem-Based Management of Marine Systems
Topics: ecosystem approaches to marine management, watershed management
Readings: Chapter 10

Week 14
A: Marine Policies and Sustainable Futures
Topics: emerging and new sustainable directions in the marine environment, including innovations in technologies, policies, practices;
Readings: TBD
B: Student presentations of service projects

Assessments:
1. 2 Hour exams 40% (20% each)
2. Service Learning Project and Presentation 25%
3. Participation (class debates, discussion, etc.) 15%
4. Assignments (in-class and at-home) 20%
Total 100%

Course Requirements:
1. Two hour exams
2. Completion of a service learning project and professional conference-style visual presentation
3. Active, skilled and prepared participation in all class discussions and debates
4. Satisfactory completion of all homework and in-class writing assignments
Assignments: Each field trip will be accompanied by a

Service Learning Project: Developed in consultation with the TC Blue Plan Committee;

Exams will cover material in the lectures and required readings.

Successful class participation depends on attention to lecture material, completing the assigned readings and participating regularly in class discussions and debates and attending all field trips and out of class activities. Participation includes skilled research and active contribution to all class debates.