

## Engineering in the Environment (MS)

This program is designed to draw OS | CMES students forward with enhanced technical and problem-solving skills and to draw MSE students forward into a broader focus on the environment and society. Students from other institutions with undergraduate STEM degrees and an interest in coastal STEM (including the Human Environment) are also candidates for this program. Accepted students should be familiar with math through Differential Equations and with concepts in environmental chemistry. Differential Equations can be taught ([new course – DE-EPS](#)) with a narrowed focus on environmental problem-solving. This route toward engaging with Differential Equations as an environmental scientist does not require Calc. III.

### Requirements:

30 credits:

Coursework – 27 Credits of which at least 15 must be from graduate level courses

Report or Thesis – 3 – 6 Credits

### Relevant background courses offered at MMA

- CH220 – Chemistry II
- EN202 – Introduction to Sustainability
- HC260 – Sustainable Energy & Society
- GE221 – Geographic Information Science
- MS260 – Differential Equations
- OS212 – Chemical Oceanography
- OS220 – Marine Pollution
- OS225 – Land Margin Ecosystems
- OS230 – Intro Global Environmental Change
- OS321 – Coastal Resource Management
- OS401 – Research Project (OS/CMES)\*
- NA599 – Capstone Design Project (ENG)\*

\*can be rolled forward for MS thesis credit

OS | CMES students – ([new](#)) DE- EPS would be taken Senior year.

MSE students – replace NA372; NA430 with ([new](#)) Environmental Engineering course options:

- [Fundamentals of Environmental Engineering](#)
- [Drinking Water and Wastewater Treatment](#)

[Socio-Technical Mapping and the Built Environment](#) ([new](#)) can be offered as an introduction to infrastructure and society – content would be a required component of the Sustainability minor and would give all interested students a basis in GIS and overview of Civil Engineering. [Senior year elective]

### **New graduate-level courses for the MS degree**

#### Required (2 courses)

[Environmental Aquatic Chemistry](#)

[Coastal Hydrodynamics and Sediment Transport](#)

#### Electives (choose 3 courses)

[Contaminant Transport Modeling](#)

[Coastal Structural Engineering](#)

[Coastal Community Resource Analysis \(with GIS\)\\*](#)

[Restoration and Ecological Engineering\\*](#)

\*can be offered simultaneously as an elective in CMES; graduate credit is given for the addition of a course research project; this project is not required for undergraduate credit.