

OCEAN SCIENCE AND ENGINEERING

BACHELOR OF SCIENCE IN OCEAN ENGINEERING

With a strong emphasis on the Blue Economy, this undergraduate program features interdisciplinary coursework that integrates multiple engineering fields (e.g., mechanical, civil, electrical, environmental). Students work with marine science faculty to gain hands-on experience with AUVs, gliders, ROVs and other sensor systems that are deployed in the lab or from USM vessels, such as the *R/V Point Sur* or *R/V Jim Franks*.

The innovations of ocean engineers have allowed oceanographers to travel further offshore and deeper into the sea. Observational technology advances developed by ocean engineers have enabled oceanographic discoveries, such as hydrothermal vents, ocean volcanoes, underwater mountain chains and “new” species. Data gathered with this new instrumentation improve ocean monitoring capability and ocean modeling accuracy, which lead to better-informed coastal hazard mitigation.

With increasing coastal populations worldwide, complications resulting from sea-level rise, storms, erosion and contamination all impact coastlines. Engineering solutions are needed to minimize the impact of storms and other natural hazards on coastal infrastructure, such as harbors and marinas, and to promote the sustainability of natural resources, such as beaches, barrier islands and coastal fisheries.

The oil industry, military and marine navigation fields also necessitate ocean engineering knowledge, skills and abilities. Each of these directly impacts our lifestyle in many ways, be it a source of energy, transportation or our nation’s defense. As the role of the ocean continues to gain interest on the part of business, government and the private sector, the “Blue Economy” demand for ocean engineers will continue to grow.

COURSES OFFERED

- Coastal Engineering and Nearshore Processes
- Fundamentals of Ocean Mechanics
- Ocean Acoustics
- Engineering Ethics and Safety Culture
- Marine Autonomous Vehicles
- Operating Instrumentation in Marine Environments
- Remote Sensing of the Ocean
- Ocean Engineering Projects and Design

Southern Miss offers the only ocean engineering degree in the state of Mississippi and one of only 10 programs in the nation!



Potential Career Paths

- Unmanned Submersible Vehicles
- Oil and Gas
- Instrumentation Design
- Coastal Engineering
- Shipbuilding Industry
- Global Climate Monitoring
- Ocean Modeling
- Renewable Energy
- Remote Sensing
- Coastal Hazard Remediation

EOE/F/M/VETS/DISABILITY



SCHOOL OF OCEAN SCIENCE AND ENGINEERING
usm.edu/ocean

sose@usm.edu
228.214.9010