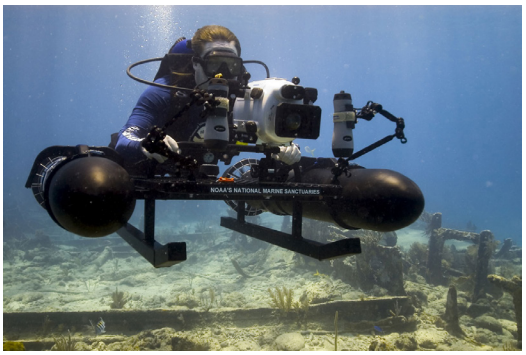
Ocean Engineering

Starting Salary (for Mechanical Engineering): $ 58,749

Median Income: $84,770



Miles below the surface, a remotely operated vehicle (ROV) or underwater robot is exploring the ocean floor. The ROV may be taking pictures, collecting samples of the ocean floor, recovering treasures from a shipwreck, or actually performing repairs on an underwater structure such as an oil platform. In the tragic BP oil spill of 2010, underwater robots were the first line of defense to try to repair the spewing oil pipe. Every instrument, every device and every process in an ocean environment is the creation and responsibility of ocean engineers. These engineers are at the top of their game because the ocean environment is so corrosive, volatile and often changeable. Waves are never-ending and the devices or gear that is used to explore the environment must be able to withstand the "typical" forces of mother nature such as high winds, waves and salt-water.

Ocean engineering is a fast growing and dynamic field with plentiful opportunities that are improving as people turn to the oceans for resources such as food, transportation, and energy. Ocean engineers must be creative and visionary to see their potential to use the oceans effectively. Government, industry and academia are hungry for ocean experts and researchers to develop new processes and systems to explore this natural resource with minimal or no danger to its habitat and environment.

One of the great things about ocean engineering is that many different types of engineers can be a part of the solutions needed for ocean infrastructure, research and utilization. Ocean engineering integrates disciplines such as materials science and mechanical, civil, computer, software, marine, chemical and electrical and electronics engineering. In addition to creating ROVs, they also develop underwater structures, oil rigs, buoys for data collection, and they are hard at work developing ways to capture the energy of waves and turn them into electricity. They develop transportation systems, plan new

Job Outlook

Employment for ocean engineers, similar to mechanical engineers, is projected to grow 5 percent from 2012 to 2022, slower than the average for all occupations. Job prospects may be best for those who stay abreast of the most recent advances in technology.

Industries with the highest levels of employment in this occupation:

1. Architectural, engineering, and related services
2. Machinery manufacturing
3. Transportation equipment manufacturing
4. Computer and electronic product manufacturing
5. Fabricated metal product manufacturing

Top paying industries for this occupation:

1. Computer and electronic product manufacturing
2. Architectural, engineering, and related services
3. Transportation equipment manufacturing
4. Machinery manufacturing
5. Fabricated metal product manufacturing

Source: US Bureau of Labor Statistics

uses for waterways, design deep-water ports, and integrate the land and water transportation systems and methods. They are concerned with discovering, producing, and transporting offshore petroleum as sources of energy and developing new ways to protect marine wildlife and beaches against the unwanted consequences of offshore oil production.

Ocean engineers study all aspects of the ocean environment to determine our effect on the oceans, the ocean as a natural resource, and its effects on ships and other marine vehicles and structures.

For more information on ocean engineering be sure to read the section on petroleum engineering. Also, visit the Society of Naval Architects and Marine Engineers (SNAME) website at www.sname.org for information about their student sections and scholarship information or pick up a copy of *The Maritime Engineer: Careers in Naval Architecture and Marine, Ocean and Naval Engineering* at engineeringedu.com.

Glossary of Terms

Buoy – an object that floats on water in a lake, bay, river, etc., to show areas that are safe or dangerous for boats (merriam-webster.com)

Corrosive – causing damage to metal or other materials through a chemical process (merriam-webster.com)

Dynamic – always active or changing (merriam-webster.com)

Infrastructure – the underlying foundation or basic framework (as of a system or organization) (merriam-webster.com)

Natural Resource – industrial materials and capacities (as mineral deposits and waterpower) supplied by nature (merriam-webster.com)

Research – careful study that is done to find and report new knowledge about something (merriam-webster.com)

Volatile – likely to change in a very sudden or extreme way (merriam-webster.com)

ABET Accredited Programs in Ocean Engineering			
School Name	**Location**	**Website**	**Program and Degree Name**
Florida Atlantic University	Boca Raton, FL, US	www.fau.edu	Ocean Engineering, BS
Florida Institute of Technology	Melbourne, FL, US	www.fit.edu	Ocean Engineering, BS
Massachusetts Institute of Technology	Cambridge, MA, US	www.mit.edu	Mechanical and Ocean Engineering, B.S.
Texas A&M University	College Station, TX, US	www.tamu.edu	Ocean Engineering, BS
United States Naval Academy	Annapolis, MD, US	www.usna.edu	Ocean Engineering, BS
University of Rhode Island	Kingston, RI, US	www.uri.edu	Ocean Engineering, BS
Virginia Polytechnic Institute and State University	Blacksburg, VA, US	www.vt.edu	Ocean Engineering, BS