Subsea Engineering [1]

About the Subsea Engineering Online Certificate Program

The UH Cullen College of Engineering’s subsea engineering online certificate program is not your typical online course. The flexible and innovative online program in subsea engineering includes live videos of lectures, interactive web-based discussions and opportunities for one-on-one learning experiences. The Cullen College offers two graduate certificates in subsea engineering – a certificate in subsea engineering and an advanced certificate in subsea engineering.

Why the University of Houston?

The University of Houston is home to the nation’s first subsea engineering graduate program and is the central player in an international effort to standardize subsea engineering education at universities around the world. UH is the leader of the Ocean Energy Safety Institute, a partnership between Texas A&M University and the University of Texas at Austin that aims to ensure the safety of offshore energy production for years to come. UH is also the leader of the Subsea Systems Institute, a collaboration with Rice University, NASA Johnson Space Center, Texas Southern University, Houston Community College and Lone Star College to conduct research and develop technologies to improve the sustainable and safe development of energy resources in the Gulf of Mexico.

Careers in Subsea Engineering

Career opportunities for subsea engineers are fantastic, especially in the city of Houston, the energy capital of the world. Offshore oil and gas reserves are increasingly important sources of energy, as well as a significant driver of the international economy. There are billions of barrels of oil and trillions of cubic feet of natural gas predicted to lie within federally controlled waters in the Gulf of Mexico alone, including off the coast of Texas. The major problem is that the reserves lie underneath 10,000 feet of water, presenting unprecedented engineering challenges. As such, nearly every energy company operating in the offshore sector employs subsea engineers, and demand for engineers with expertise in developing offshore energy resources continues to rise.

A 2015 salary survey produced by PayScale.com found that subsea engineers earn an average salary of $93,618.
Courses and Curriculum

The graduate certificate in subsea engineering programs are for engineers who seek graduate level education in subsea engineering, but do not want to pursue a master's level degree in subsea engineering. Admission into the programs requires applicants to have a four-year bachelor's degree in engineering or a related field. A GRE score is not required. Students in the subsea certificate program may later apply to the Master's subsea program. A maximum of three certificate courses will transfer to the M.S. in subsea engineering program. The subsea engineering courses are available face-to-face in a classroom setting as well as online.

Degree Plan

Category 1: Required Courses

Courses for each certificate program include:

Certificate in Subsea Engineering

- Flow Assurance [2]
- Restricted Elective 1
- Restricted Elective 2

Advanced Certificate in Subsea Engineering

- Restricted Elective 3
- Restricted Elective 4
- Restricted Elective 5

Courses

Restricted electives are selected among the following classes:

<table>
<thead>
<tr>
<th>SUBSEA ENGINEERING COURSES*</th>
<th>MECHANICAL ENGINEERING COURSES*</th>
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</thead>
<tbody>
<tr>
<td>SUBS 6320 Riser Design [3]</td>
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<tr>
<td>SUBS 6330 Pipeline Design [4]</td>
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<td>SUBS 6340 Subsea Processing and Artificial Lift [5]</td>
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<td>SUBS 6350 Subsea Controls and Systems Engineering [6]</td>
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<td>SUBS 6351 Design of Blowout Preventers [7]</td>
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<td>SUBS 6360 Materials and Corrosion [8]</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>MECE 6334</td>
<td>Convection Heat Transfer</td>
</tr>
<tr>
<td>MECE 6341</td>
<td>Viscous Flow Theory</td>
</tr>
<tr>
<td>MECE 6361</td>
<td>Mechanical Behavior of Materials</td>
</tr>
<tr>
<td>MECE 6363</td>
<td>Physical Metallurgy</td>
</tr>
<tr>
<td>MECE 63XX</td>
<td>Selected Course require approval from the Program Director</td>
</tr>
</tbody>
</table>

* ONE MECE science-based graduate course may be taken in each certificate and would thus replace one subsea engineering course per certificate.

* Only three Subsea courses will transfer to the MS program.

A description of the courses listed above and all graduate subsea engineering courses can be obtained from the UH Graduate Catalog: [http://publications.uh.edu/index.php?catoid=13](http://publications.uh.edu/index.php?catoid=13).

**Additional Information:**

For degree objectives and application information:
[http://subsea.egr.uh.edu/graduate-program/master-science](http://subsea.egr.uh.edu/graduate-program/master-science)

For admission requirements, advising, and other information specific to the subsea engineering program:
[http://subsea.egr.uh.edu/graduate-program/admissions](http://subsea.egr.uh.edu/graduate-program/admissions)

Application forms and other information related to admission can be obtained by e-mailing the Graduate Admission Analyst at subsea-advisor [at] me [dot] uh [dot] edu

To receive additional information regarding this program contact the Program Advisors:

- Jenna Donnelly, Academic Advisor  
  713-743-4522 | subsea-advisor [at] me [dot] uh [dot] edu

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**Links:**

[1] [http://onlinelearning.egr.uh.edu/programs/certificate-programs/subsea-engineering](http://onlinelearning.egr.uh.edu/programs/certificate-programs/subsea-engineering)  
[2] [http://subsea.egr.uh.edu/course/flow-assurance](http://subsea.egr.uh.edu/course/flow-assurance)  
[3] [http://subsea.egr.uh.edu/course/riser-design](http://subsea.egr.uh.edu/course/riser-design)  
[4] [http://subsea.egr.uh.edu/course/pipeline-design](http://subsea.egr.uh.edu/course/pipeline-design)  
[7] [http://subsea.egr.uh.edu/course/design-blowout-preventers](http://subsea.egr.uh.edu/course/design-blowout-preventers)  
[10] http://subsea.egr.uh.edu/graduate-program/master-science