GRADUATE PROGRAMS [1]

Master of Science

The major focus of these programs is advanced engineering fundamentals and research leading to a thesis. Recipients of the Master of Science (MS) degree are broadly qualified for employment in industry or continued studies towards the Doctor of Philosophy degree. MS degrees are available in Aerospace Engineering [2], Biomedical Engineering [3], Chemical Engineering [4], Civil Engineering [5], Computer & Systems Engineering [6], Electrical Engineering [6], Environmental Engineering [7], Geosensing Systems Engineering [8], Industrial Engineering [9], Materials Engineering [10], Mechanical Engineering [11], and Petroleum Engineering [12].

Non-Thesis Master of Science Programs

The MS degree may also be obtained through coursework only and is intended for students who elect not to write a thesis. This degree is available in Aerospace Engineering [2], Biomedical Engineering [3], Chemical Engineering [4], Civil Engineering [5], Computer & Systems Engineering [6], Environmental Engineering [7], Geosensing Systems Engineering [8], Materials Engineering [10], Mechanical Engineering [11], Petroleum Engineering [13] and Subsea Engineering [14].

Masters of Engineering Programs

Typically 36-hour programs that are courses only, the Masters of Engineering programs are offered as a non-thesis program for the working professional. It is not intended to be competitive with the Master of Science degree, which is specifically research oriented. Rather, the goal of this program is not only to permit earlier productive use of the young engineer's technical skills, but also to introduce the engineer to the broad concepts of systems, analysis, advanced process economics, and technical management. Degrees offered include the Master of Chemical Engineering [4] (MChE), Masters of Electrical Engineering [6] (MEE), Masters of Industrial Engineering [15] (MIE), Masters of Industrial Engineering - Engineering Management [16] (MIE/MGT), Master of Mechanical Engineering [11] (MME), and Master of Petroleum Engineering [13] (MPE).

Specializations are available in telecommunications [17] and industrial power systems [18] through the Department of Electrical & Computer Engineering. Engineering management [19] is one of many concentrations available through the Department of Industrial Engineering.

MBA/MIE Concurrent Degree

The Bauer College of Business Administration and the Cullen College of Engineering offer a concurrent degree program (MBA/MIE [20]) that enables students to prepare for careers in which the understanding of both engineering science and business studies is critical. This program provides students with the opportunity to
complete the degree requirements for the Master of Business Administration (MBA) and the Master of Industrial Engineering (MIE) with concentration in Engineering Management in a shorter period of time than if the two degrees were pursued separately.

**International Extension Programs**

The UH Cullen College of Engineering partners with international universities or companies, depending on the country, to offer some of the engineering masters programs. Degrees offered internationally include the Masters of Computer & Systems Engineering with an option in Industrial Power Systems [18] (MS CSE), Masters of Computer & Systems Engineering with an option in Telecommunications Systems [17] (MS CSE), Masters of Industrial Engineering [15] (MIE), and Master of Petroleum Engineering [13] (MPE).

**Specialty Programs**

Through the National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Ergonomics Program (OSEP), and Fogarty International Trainee Ship, graduate degrees in MS and PhD in Industrial Engineering and a Masters of Industrial Engineering (MIE) [21] are offered in the concentration areas of Industrial Ergonomics, Occupational Safety, and Human Factors Engineering.

**Doctor of Philosophy**

In addition to continued study of a broad range of engineering fundamentals, candidates for the doctoral degree enjoy intensive exposure to a specific field of engineering research. Individual research is the major focal point for these students, who are expected to expand the frontiers of knowledge in their area of endeavor. Moreover, candidates learn and experience the general philosophy, methods, and concepts of research and scholarly inquiry, so that they may contribute after graduation to substantive issues completely unrelated to their doctoral research. Acceptance into full-time Ph.D. program is generally accompanied by departmental financial support. Ph.D. programs are available in Biomedical Engineering [3], Chemical Engineering [4], Civil Engineering [22], Electrical Engineering [6], Environmental Engineering [23], Industrial Engineering [24], Materials Engineering [10], Mechanical Engineering [25], and Petroleum Engineering [26].

A fast-track Ph.D. program, available to undergraduate students upon completion of a bachelor's degree within that program, is also available in Chemical Engineering, Electrical Engineering, and Mechanical Engineering.

**Graduate Programs by Area**

<table>
<thead>
<tr>
<th>AEROSPACE ENGINEERING</th>
<th>BIOMEDICAL ENGINEERING</th>
<th>CHEMICAL &amp; BIOMOLECULAR ENGINEERING</th>
<th>CIVIL ENGINEERING</th>
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<tbody>
<tr>
<td>MS (thesis), MS (non-thesis)</td>
<td>MS (thesis), MS (non-thesis), PhD</td>
<td>MCHE, MS (thesis), MS (non-thesis), PhD, PhD (fast-track)</td>
<td>MS (thesis), MS (non-thesis), PhD</td>
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<tr>
<th>COMPUTER ENGINEERING</th>
<th>ELECTRICAL ENGINEERING</th>
<th>ENVIRONMENTAL ENGINEERING</th>
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<tbody>
<tr>
<td>MS (thesis), MS (non-thesis)</td>
<td>MEE, MSEE (thesis), PhD, PhD (fast-track)</td>
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<thead>
<tr>
<th>Program</th>
<th>Levels Offered</th>
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<tbody>
<tr>
<td>GEOSENSING SYSTEMS ENGINEERING</td>
<td>MS (thesis), MS (non-thesis)</td>
</tr>
<tr>
<td>INDUSTRIAL ENGINEERING</td>
<td>MIE, MIE/MBA, MSIE (thesis), PhD</td>
</tr>
<tr>
<td>MATERIALS ENGINEERING</td>
<td>MS (thesis), MS (non-thesis), PhD</td>
</tr>
<tr>
<td>MECHANICAL ENGINEERING</td>
<td>MME, MS (thesis), MS (non-thesis), PhD, PhD (fast-track)</td>
</tr>
<tr>
<td>PETROLEUM ENGINEERING</td>
<td>M, MS (thesis), MS (non-thesis), PhD</td>
</tr>
<tr>
<td>SPACE ARCHITECTURE</td>
<td>MS (thesis)</td>
</tr>
<tr>
<td>SUBSEA ENGINEERING</td>
<td>MS (non-thesis)</td>
</tr>
</tbody>
</table>

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Links:
[1] https://www.egr.uh.edu/academics/graduate-programs/programs
[9] http://www.ie.uh.edu/graduate-program/degree-programs-msie
[12] http://www.petro.uh.edu/graduate/degree
[14] http://subsea.egr.uh.edu/graduate-program/master-science
[16] http://www.ie.uh.edu/graduate-program/overview
[17] http://www.ee.uh.edu/graduate/telecommunications
[18] http://www.ee.uh.edu/graduate/industrial-power-systems
[19] http://www.egr.uh.edu/ie/graduate/?e=programs
[21] http://www.ie.uh.edu/graduate-program/fogarty-trainees
[22] http://www.cive.uh.edu/programs/civil-graduate/doctor-philosophy-phd
[24] http://www.ie.uh.edu/graduate-program/degree-programs-phd
[25] http://www.me.uh.edu/graduate-program/phd
[26] http://www.petro.uh.edu/graduate/degree-programs/phd