

# School of Engineering

## General Areas of Graduate Study Specialization

<u>Organized By Department:</u>	<u>Organized By Interdisciplinary Areas:</u>
<p><b>Chemical &amp; Biomolecular Engineering</b></p> <ul style="list-style-type: none"> <li>• Atmospheric Science</li> <li>• Bioengineering</li> <li>• Computer-aided process engineering and control</li> <li>• Electrochemistry and Electrochemical Engineering</li> <li>• Energy Systems</li> <li>• Fluid mechanics and transport phenomena</li> <li>• Green Manufacturing</li> <li>• Materials processing</li> <li>• Separation processes</li> <li>• Surface/interfacial phenomena, characterization and transport</li> </ul> <p><b>Civil and Environmental Engineering</b></p> <ul style="list-style-type: none"> <li>• Environmental</li> <li>• Geotechnical</li> <li>• Structural mechanics and design</li> <li>• Transportation</li> <li>• Water resources</li> </ul> <p><b>Electrical and Computer Engineering</b></p> <ul style="list-style-type: none"> <li>• Advanced visualization</li> <li>• Biomedical signal processing</li> <li>• Communication systems</li> <li>• Computer engineering</li> <li>• Micro- and nano-electronics</li> <li>• Power systems and machines</li> <li>• Software engineering</li> </ul> <p><b>Mechanical and Aeronautical Engineering</b></p> <ul style="list-style-type: none"> <li>• Engineering systems &amp; design</li> <li>• Environmental Science and Engineering</li> <li>• Fluid mechanics &amp; thermal science</li> <li>• Material science and engineering</li> <li>• Solid mechanics and materials processing</li> </ul>	<p><b>Biomedical and Rehabilitation Science and Engineering</b> (example options available through Engineering departmental degrees)</p> <ul style="list-style-type: none"> <li>• Bio-entrepreneurship</li> <li>• Biomaterials</li> <li>• Biometrics</li> <li>• Biomolecular engineering</li> <li>• Biosensors</li> <li>• Biosignal processing</li> <li>• Neural engineering</li> </ul> <p><b>Environment and Energy</b> (example options available through Env. Sci. &amp; Engrg. degree or from an Engineering departmental degree)</p> <ul style="list-style-type: none"> <li>• Atmospheric science</li> <li>• Assessment of environmental impacts</li> <li>• Fate of contaminants in air, water, soil</li> <li>• Indoor and outdoor air quality</li> <li>• Renewable/sustainable energy engineering</li> <li>• Waste treatment and energy recovery technologies</li> <li>• Water quality monitoring and modeling</li> </ul> <p><b>Material Science &amp; Engineering</b> (example options available from within engineering department degrees and soon from Mat'l Sci. &amp; Engrg. degree)</p> <ul style="list-style-type: none"> <li>• Composite materials</li> <li>• Fracture mechanics</li> <li>• Materials processing</li> <li>• Materials testing and characterization</li> <li>• Nano-mechanics and nano-materials</li> <li>• Surface/interfacial phenomena and transport</li> </ul> <p><b>Simulation-Based Science and Engineering</b> (examples of tools used throughout departments and problem areas)</p> <ul style="list-style-type: none"> <li>• Advanced visualization and computer graphics</li> <li>• Computational fluid dynamics</li> <li>• Finite &amp; boundary element methods</li> <li>• Information technology</li> </ul>