

## ENVIRONMENTAL ENGINEERING TECHNICAL ELECTIVES

Env. Eng. majors following the Fall 2017 catalog must complete **four** TEs.

Env. Eng. majors following a pre-Fall 2017 catalog must complete **five** TEs.

**At least one of your electives must be a Scripps Institute of Oceanography (SIO) course.**

**Generally all upper-division MAE classes (*not already required for your major*) count as TEs, e.g.:**

MAE 101D Intermediate Fluid Dynamics	MAE 148 Intro to Autonomous Vehicles
MAE 118 Introduction to Energy Systems	MAE 150 Computer-Aided Analysis and Design
MAE 120 Introduction to Nuclear Energy	MAE 154 Product Design and Entrepreneurship
MAE 130 Advanced Vibrations	MAE 160 Mechanical Behavior of Materials
MAE 131A/B Solid Mechanics I/II	MAE 166 Nanomaterials
MAE 143A/B Signals & Systems/Linear Control	MAE 255 Renewable Energy Meteorology
MAE 145 Intro to Robotic Planning & Estimation	

MAE 199 (Independent Study): Two quarters can be used for **one** TE under certain circumstances. See our website, [mae.ucsd.edu](http://mae.ucsd.edu), for details.

**Scripps Institute of Oceanography (SIO) - generally all upper-division SIO lecture classes count as TEs, e.g.:**

SIO 101 California's Coastal Oceanography	SIO 113 Computational Earth Science ( <i>requires SIO 50</i> )
SIO 102 Intro to Geochemistry ( <i>requires SIO 50</i> )	SIO 115 Ice and the Climate System
SIO 103 Intro to Geophysics ( <i>requires SIO 50</i> )	SIO 117 The Physical Basis of Global Warming
SIO 106 Intro to Hydrogeology ( <i>requires SIO 50</i> )	SIO 135 Satellite Remote Sensing
SIO 110 Intro to GIS/GPS	SIO 173 Dynamics of the Atmosphere and Climate
SIO 111 Ocean Waves and Tides	SIO 182 Environmental and Exploration Geophysics

### Chemical Engineering

CENG 120 Chemical Process Dynamics and Control	CENG 124A/B Chemical Plant and Process Design I/II
CENG 122 Separation Process	CENG 176A/B Chemical Engineering Process Lab I/II

### Structural Engineering

SE 181 Geotechnical Engineering ( <i>requires MAE 131A</i> )	SE 184 Ground Improvement ( <i>requires SE 181</i> )
SE 182 Foundation Engineering ( <i>requires SE 181</i> )	

### Chemistry and Biological Sciences

CHEM 100A Analytical Chemistry Laboratory	CHEM 172 Environmental Chemistry
CHEM 100B Fundamentals of Instrumental Analysis	CHEM 173 Atmospheric Chemistry
CHEM 131/132 Chemical Physics: Stat Thermo I/II	BIBC 140 Our Energy Future: Sustainable Energy Solutions

**Economics and Rady School of Management (MGT) – only one ECON or MGT course can be used for TE credit**

Econ 131 Economics of the Environment	MGT 112 Global Business Strategy
Econ 132 Energy Economics	MGT 121A/B Innovation to Market
Econ 135 Urban Economics	MGT 164 Business and Org Leadership
	MGT 172 Business Project Management

**Urban Studies and Planning (USP) – only one USP course can be used for TE credit**

USP 124 Land Use Planning	USP 171 Sustainable Development
USP 144 Environmental & Preventive Health Issues	USP 177 Urban Design Practicum
USP 170 Sustainable Planning	

**Global TIES:** One quarter of ENG 100D **and** two consecutive quarters of ENG 100L can be used for **one** TE.  
*All TEs must be taken for a letter grade. No P/NP grades allowed except in MAE 199.*

*If you enroll in a course on this list and it is not shown on your degree audit, please notify an MAE undergraduate advisor.*

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For information about receiving TE credit for courses not on this list, please contact an MAE undergraduate advisor:  
[MAE-ugrad@eng.ucsd.edu](mailto:MAE-ugrad@eng.ucsd.edu)

## **Optional Tracks**

*Following a track is not required, but will add depth and coherence to your knowledge in your field of interest.*

<b>Renewable Energy:</b>	MAE 118, 120, 255; BIBC 140; SIO 135, 172; ECON 132
<b>Environmental Sensing &amp; Control:</b>	MAE 143A/B, 144, 149, 150, 199
<b>Environmental Chemistry:</b>	CHEM 173 and choice of 3 out of (CENG 120, 122, 124A/B, 176A/B; SIO 263; CHEM 172, 100A/B)
<b>Earth Science: Atmospheric Science / Ocean Science / Geophysics:</b>	SIO 102, 103, 110, 111, 113, 117, 135, 173, 174, 182