

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 143A/B Signals & Systems/Linear Control
MAE 118 Introduction to Energy Systems	MAE 145 Intro to Robotic Planning & Estimation
MAE 120 Introduction to Nuclear Energy	MAE 150 Computer-Aided Analysis and Design
MAE 124 Env. Challenges: Science & Solutions (FA17 catalog only)	MAE 160 Mechanical Behavior of Materials
MAE 130C Vibrations	MAE 154 Product Design and Entrepreneurship
MAE 131A/B Solid Mechanics I/II	MAE 166 Nanomaterials
MAE 140 Linear Circuits	MAE 255 Renewable Energy Meteorology

MAE 199 (Independent Study): Two quarters can be used for **one** TE under certain circumstances. See our website, 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 (requires SIO 50)
SIO 102 Intro to Geochemistry (requires SIO 50)	SIO 115 Ice and the Climate System
SIO 103 Intro to Geophysics (requires SIO 50)	SIO 117 The Physical Basis of Global Warming
SIO 106 Intro to Hydrogeology (requires SIO 50)	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 (requires MAE 131A)	SE 184 Ground Improvement (requires SE 181)
SE 182 Foundation Engineering (requires SE 181)	

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.

Optional Tracks

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

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