

Master of Science in Earth and Environmental Engineering  
Concentration in Sustainable Energy

**Core courses for Sustainable Energy concentration:**

EAAE E4220: Energy System Economics and Optimization (Fall)

[EAAE E4300: Introduction to carbon management \(Fall\) – will offer starting fall 2021](#)

EAAE E4002: Alternative Energy Resources (Spring)

**Recommended courses for Fall semester:**

MECE E4211: Energy sources and conversion (fall)

EAAE E4180: Electrochemical Energy Storage (Fall, only offered in odd years)

EAAE E6181: Adv. Electrochemical Energy Storage Systems (Fall, only offered in even years)

CHEN E4231: Solar fuels (Fall)

EAAE E4550: Catalysis for emission control (Fall)

MECE E4312: Solar thermal engineering (Fall)

APAM E4130: physics/solar energy (Fall)

EAAE E4190: Photovoltaic systems engineering and sustainability (Fall)

CHEN E4201: Engineering Applications of Electrochemistry (Fall)

EAAE E4001: Industrial Ecology of Earth Resources (Fall)

**Recommended courses for Spring semester:**

EAAE E4305: CO<sub>2</sub> utilization and conversion (Spring)

MECE E4302: Advanced Thermodynamics (Spring)

EAAE E4257: Environmental Data Analysis and modeling (Spring)

EAAE E4160: Solid and hazardous waste management (Spring)

EAAE E4150: Air pollution prevention and control (Spring)

CHEE E4228: Separation Science and Technology (Spring)

EAAE E6140: Physicochemical Processes (Spring)

EAAE E4011: Industrial Ecology of Manufacturing (Spring) – *This course will be offered in Spring 2021 but will not be offered after that.*

EAAE E6150: Industrial catalysis (spring) – In 2021, it will be offer in summer instead of in spring.

**Other elective courses:**

EAAE E4200: Introduction to Sustainable Production of Earth Minerals & Metal Resources (Fall)

EAAE E4003: Introduction to Aquatic Chemistry (Fall)

CHEE E4252: Introduction to surface and colloid chemistry (Fall)

CHEN E4140: Engineering separations (Fall)

CHEN E4235: Surface reactions & kinetics (Fall)

CHEE E6252: Advanced surface and colloid chemistry (Fall)