STACK 3: Recycling Technology

ITS 221 Project Management 3 cr.
BGEN 160 Issues in Sustainability 3 cr.
NRGY 102 Intro to Sustainable Energy II 3 cr.
NRGY 241 Alternative Fuels 3 cr.
NRGY 270 Recycling Technology 4 cr.
Total 16 credits

**ITS 221 – Project Management**

Offered autumn. Prereq., CSCI 172 (CRT 172). Investigation of topics in project management including scope, definition, risk, procurement and the RFP. Management of time, cost, quality, and human resources. Concepts are reinforced with PM software.
3.000 Credit hours; 3.000 Lecture hours; 0.000 Lab hours  
**Levels:** Undergraduate  
**Schedule Types:** Lecture

**BGEN 160 – Issues in Sustainability**

Offered autumn and spring. Same as CCN 160S. This literature-intensive course is intended to expose the student to a variety of essays addressing the balance of economic development with the principles of sustainability and social equity. The student is offered an introduction to sustainability concepts, natural systems/cycles and environmental economics. Natural capitalism and triple bottom line maximization is explored, along with the role of corporations and small businesses in sustainable development. A survey of issues surrounding corporate social responsibility and sustainability-driven innovation will be conducted.
3.000 Credit hours; 3.000 Lecture hours; 0.000 Lab hours  
**Levels:** Undergraduate  
**Schedule Types:** Lecture/Lab

**NRGY 102 – Intro to Sustainable Energy II**

Offered autumn and spring. Prereq., NRGY 101. A survey of renewable energy systems and technologies. Addresses physical and technical aspects of wind, solar, geothermal, hydro, tidal, biological, and wave energy systems. Consideration is given to engineering, economic, social, environmental, and political factors that determine implementation and sustainability.
3.000 Credit hours; 3.000 Lecture hours; 0.000 Lab hours  
**Levels:** Undergraduate  
**Schedule Types:** Lecture/Lab
ETEC 241 – Alternative Fuels

Offered Autumn. Prereq., NRGY 101 (NRG 101), M 121 (MATH 111/MAT 118). Identifies alternative fuel sources; explores fuel characteristics; identifies and evaluates the infrastructure required to produce, store, distribute, and use them; discusses emission and conversion efficiencies; assesses social, environmental, and economic impacts. 3.000 Credit hours; 3.000 Lecture hours; 0.000 Lab hours
Levels: Undergraduate
Schedule Types: Lecture/Lab

NRGY 270 – Recycling Technology

Offered Autumn. Provides an overview of recycling opportunities at both the residential and industrial scale. Prepares the student to work with a variety of materials including cellulosic, plastic, metal, glass and electronics waste. Students will be exposed to ANSI-IREC standards as well as LEED standards for repurposing and “upcycling” materials. Local home and industry tours, and hands-on exposure to materials processors such as glass pulverizer, cardboard grinders and plastics extruders will be part of the course. Study of efficiency techniques used for reduction of virgin material consumption and waste management, including materials auditing and accessing international materials reclamation will be included. Students will also earn forklift operation certificate. Career opportunities in a variety of industries related to materials reclamation will be discussed. Possible projects include the building of a solar thermal forge.

4.000 Credit hours; 3.000 Lecture contact hours; 9.000 Lab hours (12 total hrs per week commitment)
Levels: Undergraduate
Schedule Types: Lecture/Lab

*After successful completion of the coursework, students would either enter into an apprenticeship, internship, seek employment, or move on to higher education.