

Biofuels

ENGY 111 Introduction to Biofuels (3 credit, 3 lecture, 0 lab)

This course introduces to students biofuel energy including the production process of multiple types of cellulose biomass sources that can be chemically altered to create a viable, sustainable energy source.

ENGY 113 Plant Maintenance (3 credit, 3 lecture, 0 lab)

This course provides students with a detailed understanding of how using the best practices associated with the plant's maintenance function enhances quality, operations, safety, and profit margins.

ENGY 115 Agricultural Wastes to Biofuels (1 credit, 1 lecture, 0 lab)

This course provides an overview of biofuels production from agricultural wastes. It covers the process from waste creation through processing and distribution.

ENGY 131 Biodiesel Production (3 credit, 3 lecture, 0 lab)

This course covers the process of biodiesel production from biomass choice through the production including biodiesel chemistry, process stages, fuel specifications, treatment, storage, and facility operations.

ENGY 132 Biodiesel Fuel (1 credit, 1 lecture, 0 lab)

This course provides a history of biodiesel and its place in our social, political, and economic global community.

ENGY 133 Biodiesel Process (2 credit, 2 lecture, 0 lab)

This course provides a history of biodiesel from its discovery through current market demand and its place within renewable fuel standard. **Pre-Requisite:** ENGY 132 or consent of the instructor.

ENGY 151 Ethanol Production (3 credit, 3 lecture, 0 lab)

This course provides an overview of ethanol production from biomass solution to the completed product including distribution.

ENGY 152 Ethanol Fuel (1 credit, 1 lecture, 0 lab)

This course provides a history of ethanol and its place in our social, political, and economic global community.

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ENGY 153 Ethanol Process (2 credit, 2 lecture, 0 lab)

This course provides a history of ethanol from its discovery through current market demand and its place within renewable fuel standard. **Pre-Requisite:** ENGY 152 or consent of the instructor.

ENGY 211 Biofuels System Technology (3 credit, 3 lecture, 0 lab)

This course provides students with a detailed overview of the biofuel process fundamentals of a biorefinery such as batch and continuous process, modes of operation, and specific equipment needs.

ENGY 213 Algae Feedstocks (1 credit, 1 lecture, 0 lab)

This course provides an overview of ethanol and biodiesel production from naturally occurring or synthesized algae. **Pre-Requisite:** ENGY 111 Introduction to Biofuels; ENGY 131 Biodiesel Production; and, ENGY 151 Ethanol Production.

ENGY 270 Biofuel Energy Internship (5 credit, 0 lecture, 25 lab)

Provides a practical work experience in which the student works in the renewable fuels industry. The internship creates an important occupational experience providing the student with the opportunity to practice and observe the application of some of the specifics in the biofuels, ethanol, biodiesel, or renewable fuels production, distribution, and marketing. This course may be offered for variable credit and may be repeated three times. **Pre-Requisite:** Students must have completed 12 credit hours of ENGY Biofuels Program courses AND receive the consent of the instructor.

ENGY 290 Selected Topics in Biofuels Tech (4 credit, 4 lecture, 0 lab)

An in-depth study of topics in the biofuels technology field. The exact content will vary from semester to semester depending on the subject studied. This course may be offered as variable credit (.5 hours to 4 hours) and repeated three times if different topics are considered, but cannot exceed a total of six (6) credit hours toward graduation. **Pre-Requisite:** Instructor consent.

ENGY 299 Energy Systems Internship (5 credit, 0 lecture, 25 lab)

Provides a practical work experience in which the student works in a renewable fuels production facility. The internship creates an important occupational experience providing the student with the opportunity to practice and observe the application of some of the specifics in the biofuels, ethanol, biodiesel, or renewable fuels production. This course may be offered variable credit and may be repeated three times. **Pre-Requisite:** Students must have completed 12 credit hours of ENGY Biofuels Program courses AND receive the consent of the instructor.