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# SECTION HEADING

## RNEW 1102: Biodiesel Process Fundamentals

### Description

Biodiesel Process Fundamentals provides detailed information regarding the overall fundamental process of biodiesel production. The course will include a review of biodiesel chemistry, process engineering, post reaction processing, fuel specification and properties, feedstock preparation, treatment and recovery of side streams, fuel transportation storage and general plant operations.

### Credits

2

### Prerequisite

None

### Corequisite

None

### Topics to be Covered

1. History of biodiesel
2. Define the common terminology
3. Define the chemistry relating to biodiesel production:
  - a. Reactants: triglycerides, fatty acids, alcohol, catalyst
  - b. Products: biodiesel, water, crude glycerin, soap
4. Reaction trouble shooting
5. Describe the process engineering
6. Fuel properties
  - a. Comparison to petroleum diesel
7. Fuel specifications according to ASTM and European standards
8. Introduction to BQ-9000
9. Social, economic, and environmental benefits and concerns of biodiesel production
10. Globalization

### Learning Outcomes

1. Explain biodiesel processing and the chemistry that supports the production technology.
2. Discuss process parameters.
3. Identify fuel properties.
4. Differentiate between biodiesel and petroleum diesel properties.
5. Describe fuel specifications.
6. Discuss the social, economic, and environmental benefits and concerns associated with biodiesel production.

### Credit Details

Lecture: 2

Lab: 0

OJT: 0

MnTC Goal Area(s): None