

6 hours

Bio-Feedstocks: Fueling the Path to Net-Zero

The energy industry is in transition given the impact of legislation in response to climate change, refinery. Biofuels will play an increasingly important role in the transportation fuels industry for gasoline, diesel, jet fuel and bunker fuel. The course will cover current and emerging process technology together with energy transition issues and industry developments with respect to decarbonization. The biofuels to chemicals interface will also be discussed.

COURSE OUTLINE

1. Biofuels Fundamentals

- Introduction, historical development and value chain
- Why is policy so important?
- Near-term legislation, quotas and mandates

2. Biofuel Demand and Outlook

- Biofuel demand drivers

3. Agricultural Crops

- Background on agricultural feedstocks for 1st Generation
- Technologies (grains, natural oils, sugars, etc.)
- Crop technology to serve biofuel production

4. Fundamental Biotechnologies

- 1st Generation bioethanol technologies (from grains, sugarcane and others)
- Background on alternative feedstocks
- 1st Generation technologies, from natural oils

- Background on alternative feedstocks for advanced biofuel
- Technologies (farmed wood, UCO, energy crops, etc.)

5. Advanced Biofuels Technologies

- Advanced bioethanol technologies from biomass
- Advanced biodiesel/jet fuel technologies, ex natural oils and biomass
- Background on alternative feedstocks for advanced biofuel
- Technologies (farmed wood, UCO, , energy crops, etc.)

6. Market Dynamics Revisited

- Biofuel supply, valuation and pricing

7. Decarbonization

- Refinery decarbonization with biofuels integration
- Refinery and Petrochemical decarbonization biofuel/biobased
- Chemicals integration

INSTRUCTOR



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