

## **Basic Ethanol Production Workshop**

Offered by Iowa BioDevelopment at Indian Hills Community College

This 2 day (16 hr) workshop combines both lecture and hands-on activities and is designed to introduce students to the basics of fuel ethanol production from corn. Topics will include:

- Dry Mill Basics
- Basics of Carbohydrates and Starch
- Yeast Basics
- Industrial Enzymes
- Economics of Ethanol Production
- Distillation
- Molecular Sieves
- Ethanol Sampling and Analysis

Students will use the laboratory and training facility at the Iowa Bioprocess Training Center in Eddyville, Iowa to prepare raw materials, ferment, distill, and purify ethanol from corn.

Location:	Iowa Bioprocess Training Center 17601 Monroe-Wapello Rd Eddyville, Iowa 52553
To register, contact:	Joe Brehm Director IBTI (641) 969-4167 jbrehm@indianhills.edu
Course Cost:	\$300/person (include 2 continental breakfasts, 2 lunches and snacks)
Certification:	Students will receive a Certificate of Completion from Indian Hills Community College, Iowa Biofuels Training International, or both.
CEU Credits:	1.5 CEUs will be awarded to each student through Indian Hills Community College.

## COURSE SCHEDULE

Day 1	7:30 - 8:00 am	Registration (continental breakfast provided)
	8:00 - 8:30 am	Dry Mill Basics (Lecture by IBD)
	8:30 - 9:30 am	Carbohydrates and Starch (Lecture and Activity by IBD)
	9:30 - 11:30 am	Lab Activity - Fermentation
	11:30 - 12:00 pm	Lab Activity Recap and Questions
	12:00 - 12:30 pm	Lunch (provided)
	12:30 - 2:00 pm	Yeast Basics (Lecture by Ethanol Technology)
	2:00 - 3:30 pm	Industrial Enzymes (Lecture by Genencor)
	3:00 - 3:15 pm	Break
	3:15 - 4:15 pm	Economics of Ethanol (Lecture by Cargill)
	4:15 - 4:45 pm	Review and Questions
	4:45 PM	Adjourned
Day 2	7:30 - 8:00 am	Continental Breakfast
	8:00 - 10:00 am	Product Recovery - Distillation Theory (Lecture by IBD)
	10:00 - 10:15 am	Break
	10:15 - 11:30 pm	Distillation (Lab Activity)
	11:30 - 12:00 pm	Lunch (provided)
	12:00 - 1:00 pm	Product Recovery - Molecular Sieves (Lecture by Zeochem)
	1:00 - 2:00 pm	Molecular Sieves (Lab Activity)
	2:00 - 3:00 pm	Ethanol Sampling and Analysis (Lecture by ?)
	3:00 - 3:15 pm	Break
	3:15 - 4:15 pm	Question and Answer Session
	4:15 - 4:45 pm	Course Evaluations, Recommendations and Discussion
	4:45 PM	Adjourned