

HL 149

Heavy Oil Operations & Environment

2 Credits

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HL 149 Version: 6



Heavy Oil Operations & Environment

Calendar Description

This course describes different types of upstream oil facilities. It describes oil treatment and the equipment used to treat oil. It introduces the student to the new technologies used for Carbon Capture. The second part of the course follows the production of gas from the well to a marketable product.

Rationale

This is a required course for both the Heavy Oil Power Engineering and the Heavy Oil Operations Technician programs. This course provides basic safety knowledge to the student and introduces them to gas processing.

Prerequisites

HL 119

Co-Requisites

HL 129 and HL 139

Course Learning Outcomes

Upon successful completion of this course, students will be able to

1. describe basic concepts of gas processing, fractionation and sweetening.
2. describe salt water and waste disposal facilities.
3. describe how oil is cleaned and the equipment used to process the oil.

Resource Materials

Lakeland College's On-line "Production Field Operator" program.

Lakeland College's On-line "Gas Process Operator" program.

Conduct of Course

Course topics are covered in lecture form using PowerPoint presentations. On-site visits to applicable industrial locations give realistic application of the course topics. Students are encouraged to ask questions and discuss all topics in class. Assignments, quizzes and exams evaluate the progress and extend the learning.

Evaluation Procedures

Learning is assessed in the following activity areas:

Assignments	10%
Lab	10%
Midterm	30%
Final Exam	50%
Total	100%

A supplemental final examination may be made available to a student who does not achieve an overall course grade of D. Mutually agreed upon remediation must proceed the re-examination.

Peer tutoring may be available for students requiring learning assistance.

Grade Equivalents and Course Pass Requirements

A minimum grade of C+ is required to pass this course.

Letter	F	C+	B-	B	B+	A-	A	A+
Percent Range	0-64	65-69	70-74	75-79	80-84	85-89	90-94	95-100
Points	0.00	2.30	2.70	3.00	3.30	3.70	4.00	4.0

Attendance

Attendance is recorded at each session. Students must maintain a 90% hourly attendance record in this course.

Course Units/Topics

1. Gas Plant – Inlet Separation
2. Gas Wells
3. Gas Measurement and Analysis

4. Amine Sweetening:
 - Amine Gas Major Equipment
 - Amine Gas Sweetening Operation
5. Natural Gas Dehydration
 - Dehydration of Natural Gas
 - Glycol Dehydration Operations
 - Dry Desiccant Dehydration
6. Sulphur Recovery
7. Saltwater disposal
8. Waste Disposal Facility
9. Oil Cleaning facilities
10. Carbon capture and storage
11. Thermal Facilities



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