

PNGE 441
Oil and Gas Property Evaluation

Catalog Description: Reserve estimation, decline analysis, petroleum property evaluation including interest calculations, cost estimation, and tax evaluation. Overview investment decision analysis and computer applications in property evaluation.

Pre-requisites:

1. PNGE 420 or Consent: Production Engineering
2. PNGE 333: Basic Petroleum Reservoir Engineering

Course Objectives and Outcomes:

1. Students will learn practical ways of oil and gas property evaluation.
2. Students will learn to interpret data from production history to predict production analytically.
3. Students will be introduced to a commercial reservoir simulator to predict production numerically.
4. Students will learn decision making processes, methods for economic analysis and economic decision tools.

Semester: Fall 2014

Instructor: Mehrdad Zamirian, 133B Mineral Resources Building
mzamiria@mix.wvu.edu

Office Hours: Monday, Wednesday, Friday 10:00 AM-12:00 PM

Schedule: Tuesday and Thursday 2:00-3:15 PM

Location: Room G102 Engineering Science Building

Textbook: An Electronic Copy of the Course Notes is available on eCampus.

References

- R. Thompson and J. Wright: Oil Property Evaluation, Thompson-Wright Associates, 1985.
Guo, Lycons, and Ghalambor: Petroleum Production Engineering, Elsevier, 2007.
P. Newendorp and J. Schuyler, Decision Analysis for Petroleum Exploration, Planning Press, 2000.
Journal and technical papers from JPT, SPE, etc.

PNGE 441
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Schedule:

- Week 1 Introduction
- Week 2 Reserve Estimation
- Week 3 Decline Curve Analysis
- Weeks 4, 5 Modeling in Reservoir Simulators
- Weeks 6,7 Decline Curve Analysis (Continued)
- Weeks 8, 9, 10 Basic Concepts of Economic Analysis
- Weeks 11, 12, 13 Investment Decision Analysis
- Week 14 Group Presentations

Important Dates

- 19 August First day of classes for PNGE 441
- 22 August Last day to register
- 7 October Project 1 due
- 9 October Midterm Exam
- 14 October Fall Break- No classes
- 24 October Last day to drop a class
- 4 November Election Day- No classes
- 24-28 November Fall Recess- No classes
- 4 December Project 2 due
- 4 December Group Presentation
- 8 December Last day to withdraw from the university
- 9 December Group Presentation
- 16 December Final Exam

Grading

- Attendance* and Quizzes 10%
- Homework 15%
- Project 1- Individual 20%
- Project 2- Group 20%
- Exams (2) 35%

** More than three unauthorized absents results in 5% deduction from your final grade (missed homework, project, quiz, or exam is not included and their grades will be deducted separately). If you miss more than 5 sessions you will lose 10% from your final grade (missed homework, project, quiz, or exam is not included and their grades will be deducted separately) and more than 7 unauthorized absents results in failing the course with grade F.*

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Grading Scale:

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|---------------------------------|---------------------------------|
| • A⁺: 96-100 | • C⁺: 74-76.9 |
| • A: 90-95.9 | • C: 70-73.9 |
| • A⁻: 87-89.9 | • C⁻: 65-69.9 |
| • B⁺: 84-86.9 | • D: 60-64.9 |
| • B: 80-83.9 | • F: < 60 |
| • B⁻: 77-79.9 | |

Attendance Policy

- Class attendance is mandatory unless excused in advance or in the case of a documented legitimate emergency.
- Students who are absent from class for any reason are responsible for all missed work.
- Students who miss a quiz or an exam will not be permitted to make it up.
- Make-up exam will be given only when there is an excused absence.

Days of Special Concern:

- WVU recognizes the diversity of its students and the needs of those who wish to be absent from class to participate in Days of Special Concern, which are listed in the schedule of courses.
- Students should notify their instructors by the end of the second week of classes regarding Day of Special Concern observances that will affect their attendance.
- Reasonable accommodation will be made for missed Quizzes or Exams as a result of observing a Day of Special Concern.

Classroom Conduct:

- You are expected to conduct yourself in a professional manner while in this class.
- Be on time. Do not enter the classroom after the class has started.
- Attend to any personal needs (drink, restroom, phone calls, etc.) prior to class time.
- Do not return to class if you have to leave the class for any reason.
- While in the class, everyone is expected to remove their hats and sunglasses, put away the newspaper, refrain from eating and drinking, and **turn off cell phones**.
- Bring your notes, paper, ruler, and a calculator to the class.

Please do not force the instructor to remind you that you should behave in a professional manner.

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Course Policies:

- Homework must be submitted at the beginning of the class on the due date.
- Homework submitted in the office, via email, or placed in the mail box is not accepted.
- Late homework will not be accepted.
- In case of an excused absence, the homework must be submitted prior to the due date.

WVU Social Justice Statement

West Virginia University is committed to social justice. **I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination.** Our university does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestion as to how to further such a positive open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangement with Disability Services (293-6700).

WVU Academic Integrity Statement

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. **Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course.**

For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code at:

<http://studentlife.wvu.edu/studentconductcode.html>

Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.