
The University of Tulsa
Petroleum Engineering Department
Course Syllabus

Course General Information

Number	Title	Credit Hours	Required or Elective
PE 3003	Petroleum Economics and Property Evaluation	3	Required

Catalog Description

Time value of money; profitability measures; engineering analysis and prediction of cash flows of oil and gas properties; revenues, discounts, depreciation, depletion; and risk analysis.

Requisites

Number	Title	Type (Pre or Co)
PE 2113	Rock Properties	Prerequisite
PE 2123	Fluid Properties	Prerequisite

Pre-requisites by Topics

Fundamental single and multi-phase rock properties; estimation of fluid properties; black oil models

Class/Lab Schedule

This course consists of 2.5-hour lecture each week. There is no lab associated with this course.

Textbook and References

M. Kelkar: Petroleum Economic Evaluation and Risk Assessment (2002), self published.
Additional material is posted on WebCT as needed.

Course Objectives

Introduce students to the concept of how value of money is related to time
Explain various evaluation methods to reach economic decisions
Describe the effects of taxes and oil and gas contracts on economic evaluation
Demonstrate importance of uncertainties in Petroleum evaluations
Introduce the concept of oil and gas reserves
Develop the ability to solve open ended problems with field projects and case studies

Main Topics Covered

Decision Making Process; Time Value of Money; Methods of Economic Evaluation; Cash Flow Analysis;
Oil and Gas Reserves; Uncertainty Analysis

Contribution to ABET Professional Program Criteria

ABET Professional Program Criteria are statements describing competencies that students must possess by the time of graduation. This course contributes to the following Program Specific Criteria.

Program Specific Criteria	
e	Competency in application of reservoir engineering principles and practices for optimizing resource development and management
f	Use of project economics and resource evaluation methods for design and decision making under conditions of risk and uncertainty

Relationship to Program Outcomes

Program outcomes describe what students are expected to know or be able to do by the time of graduation from the Program. This course contributes to the following Program outcomes.

d	Ability to function on multi-disciplinary teams, e.g.; work on projects jointly
f	Understanding professional and ethical responsibilities, e.g.; how the economic evaluation can be impacted by professional responsibilities
g	Ability to communicate effectively: e.g., class communication, presentations
h	The broad education necessary to understand the impact of engineering solution in a global and social context, e.g. how the economic evaluation can be affected by environmental considerations.
j	Knowledge of contemporary issues; e.g., how the oil price affects economic evaluation
k	Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice; e.g., use of EXCEL, Powerpoint to complete the project; the tests and the case studies

Contribution to Program Professional Component and to Design Component

The entire course is case study driven. The students are encouraged to understand how the principles learned in the class can be applied to actual field cases. Each week, a new case study is assigned for students to work on which includes real life constraints, uncertainties, and contemporary issues. The tests and the final project are also based on actual case studies so that students get the training in solving real field problems

Person Responsible for Course Syllabus

This syllabus was prepared by Mohan Kelkar on January 8, 2010.

Fall 2009 Information

Instructor: Dr. Mohan Kelkar

E-mail: mohan@utulsa.edu

Class Hours: M/W 2:00 – 3:15 pm at KEP - U 1

Office Hours: M/W 1:00 – 2:00, 3:30 – 5:00

T/Th/F 1:00 – 5:00

Grading: Your weighted average grade will be calculated as follows: Quizzes-10%; Two exams 60%; Final Project 30%.; Quizzes will be given on WebCT and zero credit is given if you do not take the quiz. No makeup exams or quizzes will be given. A perfect attendance would receive 10 % of the grade as extra credit. That includes class participation. If the attendance is greater than 85 %, but less than 100 %, you will receive 5 % extra credit. Some additional credit may be assigned as time permits.

POLICY ON ACADEMIC MISCONDUCT

The policy in this class on academic misconduct will follow that stated in:

*Policies and Procedures Relating to Academic Misconduct
in the College of Engineering and Applied Sciences.*

Any action by the instructor on a specific instance of alleged academic misconduct can be appealed by the student involved to the Review Board for Cases of Academic Misconduct if he/she so desires.

Any student detected cheating on an examination will receive a grade of zero on the examination for the first offense and a grade of F will be given for the course if there is a second offense. If another student is involved in the offense knowingly, he will receive the same penalty.

Any student detected copying homework, or allowing his or her homework to be copied, will receive a zero grade for that homework. Repeated offenses will result in an F grade in the course.

In the event that the instructor awards an F grade in the course because of academic misconduct, he will so notify the Review Board and will recommend to them that if the student has been involved in similar cases that the student be dismissed from the University.

POLICY ON ABSENCES

Although attendance is not required, it is clear that attendance is desirable because a good deal of the factual information conveyed (which may be covered in the exams) is passed on in class. Furthermore, class discussion of regularly assigned homework enhances a student's understanding. In case of a final grade that is borderline, attendance will be considered as a deciding factor.

Absence at examination time is excusable only in case of illness of the student or a similar emergency. A written doctor's statement is necessary in case of an illness that requires makeup of an exam. An unexcused absence from an exam will result in a zero grade on that exam.