# PET E 484 Oil and Gas Property Evaluation

**Fall 2024 - September 03 to December 09**

Class time: Tuesday, Thursday 9:30-10:50 Location: MEC 3-1

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**Instructor:**

Nobuo Maeda, PhD, P.Eng
(780)492-6524
nobuo@ualberta.ca
DICE 6-245
Office Hours: By appointment

**Course Description:**

*3 (fi ) (either term, 3-0-0) Principles of property evaluation as a function of resource type, economics, technology, risk, and policies. Investment decision making tools. Cost information for petroleum exploration, drilling, production and development. Case studies on conventional and unconventional resources. Canadian and international oil and gas regulations. International and regional factors impacting oil and gas prices. Corequisite: ENG M 310 or 401 or equivalent

**Course synchronous and asynchronous content delivery schedule:**

All course content will be delivered synchronously.

**TA Information:**

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**Course Objectives & General Content:**

This course is about the principles of property evaluation as a function of resource type, economics, technology, risk, policies and markets and how these factors may influence producer choices for property acquisition or disposition, prioritizing projects by economic criteria to add the greatest value to shareholders and considering risk, policy, technological change, environmental and other factors.
The course consists of lectures and two design projects that are focused on designing of investment strategies in the contemporary economical, technological, industrial, market and regulatory settings.

**Learning Outcomes:**

By the end of this course, students should be able to:

1. Describe the principles of property evaluation as a function of resource type, economics, technology, risk, policies and markets and how these factors may influence producer choices for property acquisition or disposition, prioritizing projects by economic criteria to add the greatest value to shareholders and considering risk, policy, technological change, environmental and other factors.

2. Use economic tools to rank and evaluate potential oil and gas investments to determine economic sensitivities, major economic drivers and potential mitigation options.

3. Demonstrate proficiency in preparing cash flows and calculating present values for projects of increasing complexity.

4. Contrast the relative impacts of Canadian and international oil and gas policies, regulations and royalty regimes and market forces, on the value of an upstream property.

5. Articulate the technical, international and regional trade and geopolitical factors impacting oil and gas prices.

6. Assess the potential impacts of potential technology changes to the value of oil and gas assets.

7. Recall and explain the wide range of risks which may impact the value of an asset and how those risks might be mitigated.

8. As part of open-ended team projects, conduct high level evaluations of specific assets in specific geographic regions for assets in either: Conventional Oil, Conventional Gas, In-situ Oilsands, Unconventional Hydrocarbons, Offshore developments, or International Operation/Developments, which will require them, in some cases, to locate and infer capital and operating cost information on various types of oil and gas assets; and/or assess the productivity and revenue generated from assets assigned for team projects; and/or assess the characteristics and impacts of a technology on specific assets; and/or assess the impact of policy (government, mineral rights owner and company) of specific projects; and/or assess risks associated with assigned projects and how those risks might be mitigated; and/or, assess how behaviour of commodity markets and transportation infrastructure impact projects.

9. As part of an individual project, research business and development objectives for a range of oil and gas producers and assess them against knowledge of the industry, historical trends and perform a SWOT analysis of the company assigned.

10. Participate actively in open-ended in class discussions of emerging or recently announced changes in the oil and gas industry, locally, regionally and internationally which may impact the value of oil and gas assets of various types.

11. Learn basic principles of team formation, functioning of teams and team self-appraisals. May be part of another course but is required

**Marking Scheme:**

| Activity | (A)Synchronous | Due/Scheduled | Weight |
|---|---|---|---|
| Project 1 | | TBA | 40% |
| Project 2 | | TBA | 30% |
| Final Exam | | TBA | 30% |

The Faculty recommended grade point average for a 400 level course is 3.1. Instructors have the leeway to deviate from this average and can assign grades based on their own scheme. All grades are approved by the department chair (or delegate). The office of the Dean has final oversight on all grades.

**Term Work**

All term work solutions will be posted no later than the last day of classes. All term work will be returned to students by the final day of classes, with the exception of major term work due in the last week of classes.

The latter will be returned by the day of the final examination or the last day of the examination period if there is no final examination in the course as per university policy; instructors will make accommodations to return these term work. It is the responsibility of the student to pick up all their term work at the specified time and place. Any unreturned term work, shall be retained and then shredded six months after the deadline for reappraisal and grade appeals. Final examinations will be kept for one year as required by university guidelines and the Government of Alberta's Freedom of Information and Protection of Privacy Act.

**Calculator Policy**

There is no calculator policy in this course; students are free to use the calculator they wish for all assessments.

**Text and References (Mandatory):**

Course notes (eClass)

*Did you know that the University of Alberta has various low-to-no-cost services to help students succeed? Visit http://www.deanofstudents.ualberta.ca/ for information about the academic, wellness, and various other support services available to U of A students. It's never too early or too late to seek help!*

# University and faculty policies

## Respect and professionalism

The Faculty of Engineering is committed to fostering and protecting an equitable, inclusive, and respectful work and study environment in line with University of Alberta policies and professional engineering industry standards.

The faculty prepares students to uphold industry standards to become a Professional Engineer (P.Eng). Therefore, respect, professionalism, and accountability must be upheld within the Faculty of Engineering and the University of Alberta.

## Academic integrity

All students are expected to follow the University of Alberta's Student Code of Behaviour and Student Conduct Policy. The faculty expects an environment free of harassment, discrimination, and bullying. We encourage you to talk to the Office of Safe Disclosure and Human Rights about experiences, questions, or concerns. Additional resources and support for students are attached below.

Engineering students studying in the province of Alberta must also follow the Code of Ethics set by the Association of Professional Engineers and Geoscientists of Alberta (APEGA).

Course outline policies, course requirements, evaluation and grading information can be found in the University Calendar.

## Safety during learning activities

In all Faculty of Engineering courses, labs, seminars or other learning activities, safety is of paramount importance. In some cases, laboratory work in a program requires high standards for risk management to keep potential hazards safely under control.

Anyone found to be unable to function safely in the class, lab, seminar or other learning activity may be asked to leave or be removed for their and the safety of other participants and instructors in alignment with the Student Code of Behaviour and Student Conduct Policy. As members, or prospective members, of the engineering profession, it is your responsibility to identify and inform the proper authorities of unsafe work.

## Audio and video recording

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan.

Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Only those items specifically authorized by the instructor may be brought into the exam facility. Students must not bring any unauthorized electronic device into an examination room, including cell phones or other devices.

# Student services and support

## Health & Wellness Support

### Counselling and Clinical Services

Free, short-term, appointment-based counselling and psychiatric services. Also offers drop-in workshops. Book an initial consultation. Visit uab.ca/CCS to learn more.

### Wellness Supports Social Workers

Free one-on-one support for students in the areas of housing, finances, academics, personal wellness, life skill development, family dynamics, system navigation, and any area of life where there is a desire to invite change. Visit uab.ca/wellness to learn more.

### Sexual Assault Centre

Free, anonymous, and confidential drop-in counselling. Visit uab.ca/UASAC to learn more.

### The Office of Safe Disclosure & Human Rights (OSDHR)

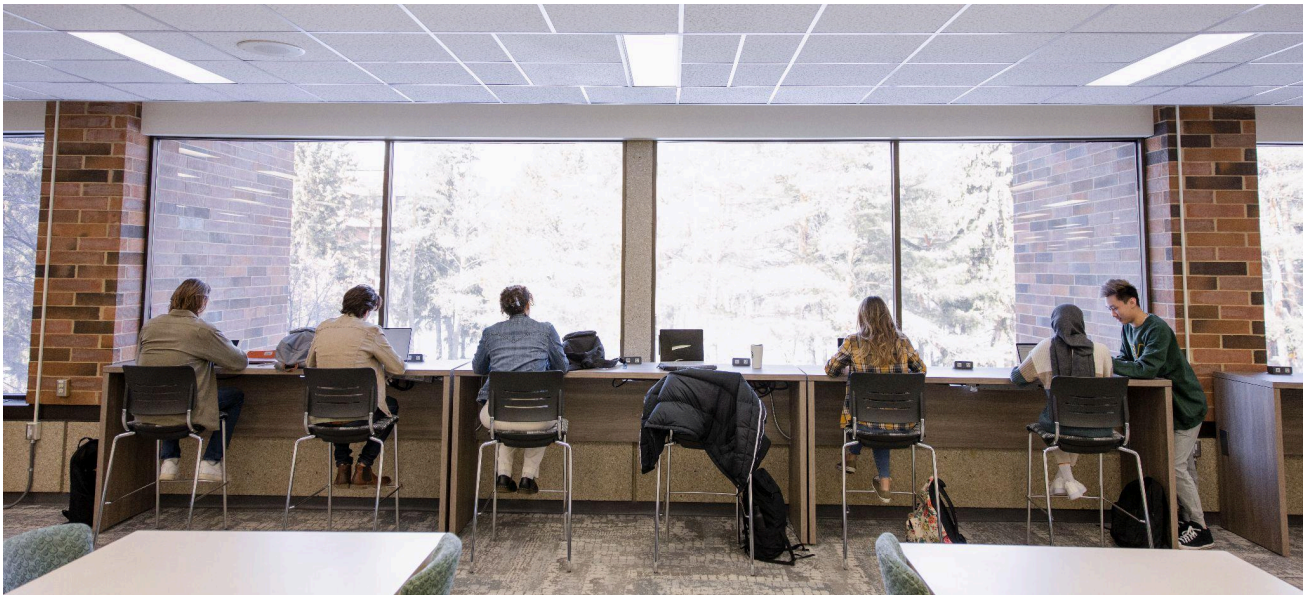
The OSDHR advises confidentially on sensitive issues you may not feel comfortable solving on your own. Contact the OSDHR if you want to get help or to make a report while keeping your privacy. Visit uab.ca/OSDHR to learn more.

### HIAR (Helping Individuals at Risk)

If you're worried about someone, contact HIAR, who can help assess risk and connect individuals to support. Learn more at uab.ca/HIAR.

### Immediate External Supports

Health Link Alberta: 811
Suicide Crisis Helpline: 988



## Academic support

### Academic Success Centre
Access to a variety of services to maximize your academic success. Learn more at uab.ca/ASC.

### Accessibility Resources
Connects students with disabilities to accommodations. Learn more at uab.ca/Access under accommodations + accessibility.

### Decima Robinson Support Centre
Academic support for 100- or 200-level introductory calculus, linear algebra and statistics courses. Visit uab.ca/DSC to learn more.

### Engineering Student Success Centre
The Faculty of Engineering provides drop-in tutoring for first-year courses. Visit uab.ca/ESSC to learn more.

### Office of the Student Ombuds
Call for complex problems and conflict mediation. Learn more at uab.ca/ombuds.

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## Financial support

### Student Service Centre

For awards and other funding support. Learn more at uab.ca/ask.

### Campus Food Bank

The Campus Food Bank Society is an independent charity supporting University of Alberta students, faculty, staff, and alumni for up to five years. For additional information visit their website at campusfoodbank.com.