

APSC 221 – ECONOMIC AND BUSINESS PRACTICE

Course Syllabus – Summer 2024

This is your course syllabus. Please download the file and keep it for future reference.

LAND ACKNOWLEDGEMENT

Queen's University is situated on traditional Anishinaabe and Haudenosaunee Territory.
See: <http://www.queensu.ca/encyclopedia/t/traditional-territories>

INCLUSIVITY STATEMENT

Queen's students, faculty, and staff come from every imaginable background – small towns and suburbs, urban high rises, Indigenous communities, and from more than 100 countries around the world. You belong here: <https://www.queensu.ca/inclusive/>.

TEACHING TEAM

COURSE INSTRUCTOR

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Office hours: By appointment



APSC 221 (S 3-0-0 3)

COURSE DESCRIPTION

This course will provide the student in the Engineering program with the ability to appropriately incorporate selected economic and business practices into the practice of engineering. The practices covered include: business planning for the enterprise, enterprise economic analysis, project management process, project economic analysis, risk analysis and management, quality management and change management. Assignments and examples are based on situations from engineering-based industries.

Prerequisites: Nil

(0/0/36/0/0) (Mathematics/Natural Sciences/Complementary Studies/Engineering Science/Engineering Design)

PRE-REQUISITE KNOWLEDGE

Basic knowledge of interest rates/percentages and probability.

COURSE LEARNING OUTCOMES (CLO)

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

CLO	DESCRIPTION	INDICATOR
CLO 1	Recognize different cost concepts and apply them using a variety of cost estimation techniques.	EC - Economics
CLO 2	Solve cash flow analysis problems utilizing the time value of money.	EC – Economics
CLO 3	Determine the effect of taxes and inflation on project viability.	EC – Economics
CLO 4	Apply replacement analysis concepts to determine minimum equivalent annual costs.	EC – Economics
CLO 5	Examine risk and change management approaches for project management.	EC – Management
CLO 6	Assess the financial strength and viability of a new venture.	EC – Management
CLO 7	Write a business plan.	EC - Management

COURSE EVALUATION

ASSESSMENT WEIGHTING

Assessment Tool	Due Date (before 23:59 ET)	Weight	Alignment with CLOs
Quizzes	Day 7 of Weeks indicated below in Weekly Course Learning Outcomes	17%	1-7
Assignments		20%	
Assignment 1	Day 1 of Week 3	5%	1-2
Assignment 2	Day 7 of Week 6	5%	3-5

Assessment Tool	Due Date (before 23:59 ET)	Weight	Alignment with CLOs
Assignment 3	Part A – Day 5 of Week 9 Part B – Day 7 of Week 10 Part C – Day 7 of Week 12	10%	6-7
Midterm Exam	Week 7	15%	1-5
Final Exam **		48%	1-7
		100% **	

** To pass the course, the following is required:

1. Pass the final examination (minimum exam grade of 50%); **and**
2. Pass the course (minimum course grade of 50%).

ASSESSMENT DESCRIPTIONS

Quizzes

There is a series of 17 short online quizzes, one for each chapter, in this course. These quizzes, which comprise of true/false, multiple choice, and arithmetic calculation questions, are designed to provide learners with immediate feedback on their knowledge. These online quizzes are open for a **limited time** specified in onQ, and therefore no late attempts. Once initiated, you have 45 minutes, but they are universally designed to be completed within 20 minutes. Therefore, extra time will only be provided to students with an accommodation of “double time” or more. You have up to two attempts for each quiz; however, the recorded score will be the average of the two attempts.

Assignments

There are three assignments in this course. More details about these assignments can be found in onQ. All assignments must be submitted online through onQ and must include a signed cover sheet. A late penalty of 10% per 24-hour period will be applied and submissions will not be accepted once grades/feedback has been posted.

Midterm Exams

There is one midterm exam that is 1.5-hours long and open-book. Students must write their exam on the day and time scheduled.

Final Exam

The final exam is closed book. Students must write their exam on the day and time scheduled. You should not schedule vacations, travel, etc. during the exam period. The [Term and Session Dates](#) will indicate the final exam period session dates in each term. You must achieve a passing grade in the Final Exam, in addition to a passing grade overall in the course, to receive credit for this course.

GRADING

All assessments in this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to the established [Grade Point Index](#).

Feedback on Assessments

The teaching team will provide feedback on graded activities. You can expect feedback on your assessments within seven days of the due date.

Accessing Your Final Grade

Your final grades will show on SOLUS. Official transcripts showing final grades will be available on the Official Grade Release Date. Please note that in official transcripts, a mark of IN (incomplete) is considered a grade, and your transcript is released with this grade.

COURSE MATERIALS

Required Textbook

Economic and Business Practices in Engineering, Eighth Custom Edition for Queen's University

Other Material

All other course material is accessible via OnQ.

Required Calculator

A Casio 991 is required. **ONLY** this type of non-programmable, non-communicating calculator will be allowed during tests and exams.

Suggested Time Commitment

This course represents a study period of one semester spanning 12 weeks. Learners can expect to invest on average 7-9 hours per week in this course. Learners who adhere to a pre-determined study schedule are more likely to successfully complete the course.

WEEKLY COURSE LEARNING OUTCOMES

Week	Learning Outcomes	Assessment
1	<ul style="list-style-type: none"> Cost Concepts & Design Economics [CLO1] Cost-estimation Techniques [CLO1] Time Value of Money [CLO2] 	Quizzes 1 – 3 [CLO1][CLO2]
2	<ul style="list-style-type: none"> Cash flow analysis [CLO2] Present value, Annual worth, and Payback Methods [CLO2] 	Quizzes 4 – 5 [CLO2]
3	<ul style="list-style-type: none"> Internal and External Rates of Return Methods [CLO2] 	Quiz 6 [CLO2] Assignment 1 [CLO1][CLO2]
4	<ul style="list-style-type: none"> Taxes [CLO3] Replacement Decisions [CLO4] 	Quizzes 7 – 8 [CLO3][CLO4]
5	<ul style="list-style-type: none"> Inflation & Price Indices [CLO3] Dealing with Uncertainty & Risk [CLO5] 	Quizzes 9 – 10 [CLO3][CLO5]
6		Assignment 2 [CLO3][CLO4][CLO5]
7		Midterm [CLO1-5]
8	<ul style="list-style-type: none"> Risk Management [CLO5] Change Management [CLO5] 	Quiz 11 & CM [CLO5]
9	<ul style="list-style-type: none"> Recognizing Opportunities & Generating Ideas [CLO6] Feasibility Analysis [CLO6] 	Quizzes 12 – 13 [CLO6] Assignment 3 Part A [CLO6]
10	<ul style="list-style-type: none"> Assessing a New Venture's Financial Strength & Viability [CLO6] Writing a Business Plan [CLO7] 	Quizzes 14 – 15 [CLO6][CLO7] Assignment 3 Part B [CLO6]
11	<ul style="list-style-type: none"> Basic Management Processes & Concepts 	Quiz 16 [CLO7]
12		Assignment 3 Part C [CLO7]
		Final Exam [CLO1-7]

COURSE COMMUNICATION

GENERAL COURSE PHILOSOPHY

This is an introductory course in the concepts of Engineering Economics. As such, demonstrating an understanding of the concepts and processes is worth more than getting a “correct” answer. Showing all your work and your thought process in the written assessments is critical, including showing the development of the model and showing all equations used. The majority of part marks are awarded in showing the process. Graders will not recalculate subsequent answers that rely on previous parts, but will grant part marks for correct process. In line with this philosophy, full solutions will not be posted. A solution process will be posted to show the steps to the solution only. For most questions, you should get within a few dollars of the model answer. Seeking help from the instructor should be the last step and be accompanied by rough work showing how you have attempted a problem.

TIME ZONES & SUBMISSIONS

All time zones used in this course are Eastern Daylight Time (ie, time in Kingston, Ontario, Canada). It is the student's responsibility to ensure that submissions are made on time through onQ. onQ's system clock will determine the late submission threshold.

Acceptable file formats for submissions are .doc, .docx, or .pdf files. While spreadsheets are useful tools to complete or check your work, Excel files will not be accepted unless explicitly stated in the assignment instructions. You cannot embed a spreadsheet as part of a Word or PDF file submission. Image files, such as .png or .jpg, are not accepted.

All requests for extensions **MUST** be received at least 24-hours prior to the due date, including those students seeking to use their academic accommodations. As an online course, no exceptions will be made to this requirement.

Re-evaluation requests for assignments and the midterm must be made within 7 calendar days of your grade/feedback being posted. No requests will be accepted after this period. Re-evaluations will be conducted as time permits during the term, but all requests will be addressed no later than 2 days prior to the final exam. Do not send follow-ups to re-evaluation requests unless it has not been addressed by the timeline above.

QUESTIONS ABOUT COURSE MATERIAL

Questions or comments regarding the course material that can be of benefit to other students should be posted in the Q&A forum on the class website. The instructor and students are encouraged to answer these questions directly in the discussion forum for the benefit of everyone in the course.

COURSE ANNOUNCEMENTS

The instructor will routinely post course news in the Announcements section on the main course homepage on OnQ. Please sign up to be automatically notified by email when the instructor posts new information in the Announcements section. Instructions on how to modify your notifications are found in the **Begin Here** section of the onQ course site.

OFFICE HOURS

In addition to interaction in the Q&A discussion forums, you will have the opportunity to interact with the instructor through office hours, by appointment.

CONFIDENTIAL MATTERS

If you have a confidential matter you would like to discuss with your instructor, their contact details are on the first page of this document. Expect email replies within 48 hours.

ABSENCES (ACADEMIC CONSIDERATIONS) AND MISSED ASSIGNMENTS

For information on academic considerations due to extenuating circumstances, please review the information on the [Smith Engineering website](#). Note that unacceptable reasons include extra-curricular activities, travel plans, generally behind on schoolwork, etc. Do not schedule travel during midterms and final exams, as travel is not an acceptable reason for granting academic considerations.

If a quiz or assignment is missed prior to the midterm, the marks will be redistributed to the midterm exam. If a quiz or assignment is missed after the midterm, the marks will be redistributed to the final exam.

LATE POLICY

For Quizzes, no late attempts will be permitted. For Assignments, a 10% penalty will be assessed for each 24-hour period up to 120-hours (5 days), at which point no late submissions will be accepted. In the event of extenuating circumstances, you must follow the policies for requesting academic consideration (as described above). In the absence of an approved consideration request, the normal late penalty will apply as described in the assignment or any course/departmental policies.

STANDARD QUEEN'S AND SMITH ENGINEERING POLICIES

NETIQUETTE

In this course, you may be expected to communicate with your peers and the teaching team through electronic communication. You are expected to use the utmost respect in your dealings with your colleagues or when participating in activities, discussions, and online communication.

Following is a list of netiquette guidelines. Please read them carefully and use them to guide your online communication in this course and beyond.

1. Make a personal commitment to learn about, understand, and support your peers.
2. Assume the best of others and expect the best of them.
3. Acknowledge the impact of oppression on the lives of other people and make sure your writing is respectful and inclusive.
4. Recognize and value the experiences, abilities, and knowledge each person brings.
5. Pay close attention to what your peers write before you respond. Think through and re-read your writings before you post or send them to others.
6. It's alright to disagree with ideas, but do not make personal attacks.

7. Be open to be challenged or confronted on your ideas and challenge others with the intent of facilitating growth. Do not demean or embarrass others.
8. Encourage others to develop and share their ideas.

STUDENT CODE OF CONDUCT

Queen's University values maintaining an environment free of, and will not tolerate, harassment, discrimination, and reprisal. The Student Code of Conduct applies to all students at Queen's. It outlines the activities and behaviours that could be considered Non-Academic Misconduct (NAM). The Code also describes the NAM process and the sanctions that could be imposed on a student found responsible for a violation.

All students should be familiar with the Student code of conduct and related policies on sexual violence prevention and response and harassment and discrimination prevention and response.

<https://www.queensu.ca/nonacademicmisconduct/policies>

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Course materials created by the course instructor, including all slides, presentations, synchronous and asynchronous course recordings, handouts, tests, exams, and other similar course materials, are the intellectual property of the instructor. It is a departure from academic integrity to distribute, publicly post, sell or otherwise disseminate an instructor's course materials or to provide an instructor's course materials to anyone else for distribution, posting, sale or other means of dissemination, without the instructor's **express consent**. A student who engages in such conduct may be subject to penalty for a departure from academic integrity and may also face adverse legal consequences for infringement of intellectual property rights and, with respect to recordings, potentially privacy violations of other students.

ACADEMIC INTEGRITY

As an engineering student, you have made a decision to join us in the profession of engineering, a long-respected profession with high standards of behaviour. As future engineers, we expect you to behave with integrity at all times. Please note that Engineers have a duty to:

- Act at all times with devotion to the high ideals of personal honour and professional integrity.
- Give proper credit for engineering work

The standard of behaviour expected of professional engineers is explained in the [Professional Engineers Ontario Code of Ethics](#). Information on policies concerning academic integrity is available in the [Queen's University Code of Conduct](#), in the [Senate Academic Integrity Policy Statement](#), on the [Smith Engineering website](#), and from your instructor.

Departures from academic integrity include plagiarism, use of unauthorized materials or services, facilitation, forgery, falsification, unauthorized use of intellectual property, and collaboration, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the University.

In the case of online or remotely proctored exams, impersonating another student, copying from another student, making information available to another student about the exam questions or possible answers, posting materials to online services, communicating with another person during an exam or about an exam during the exam window, or accessing unauthorized materials, including internet sources and using unauthorized materials, including smart devices, are actions in contravention of academic integrity.

GENERATIVE ARTIFICIAL INTELLIGENCE (AI) TOOLS, LIKE CHATGPT

Using generative AI writing tools such as ChatGPT in your submitted work is prohibited in this class. This type of use constitutes a Departure from Academic Integrity.

REMOTE PROCTORING – PROCTORTRACK

The final exam in this course will be closed book and use remote proctoring provided by a third-party, cloud-based service that enables the completion of a proctored exam or test from an off-campus location, through OnQ. This online proctoring solution was chosen as part of the approach to maintaining academic integrity in online assessment. Details about how remote proctoring will be used in this course can be found in the “Using Proctortrack for the Final Examination” content module in OnQ and/or additional information will be provided close to the date of the examination.

When writing examinations using remote proctoring, you are connecting to the third-party service. Queen’s has conducted a privacy and security review of the service in accordance with Ontario’s privacy legislation. You should also take measures yourself to protect your information by keeping your NetID password and challenge questions private, closing all applications prior to starting an exam/test, and ensuring your device is updated and safeguarded against malware. For more information about remote proctoring, see the Student FAQs on the OUR Exams resource page for remote proctoring.

TURNITIN STATEMENT

This course makes use of Turnitin, a third-party application that helps maintain standards of excellence in academic integrity. Normally, students will be required to submit their course assignments through onQ to Turnitin. In doing so, students’ work will be included as source documents in the Turnitin reference database, where they will be used solely for the purpose of detecting plagiarized text in this course. Data from submissions is also collected and analyzed by Turnitin for detecting Artificial Intelligence (AI)-generated text. These results are not reported to your instructor at this time but could be in the future.

Turnitin is a suite of tools that provide instructors with information about the authenticity of submitted work and facilitates the process of grading. The similarity report generated after an assignment file is submitted produces a similarity score for each assignment. A similarity score is the percentage of writing that is similar to content found on the internet or the Turnitin extensive database of content. Turnitin does not determine if an instance of plagiarism has occurred. Instead, it gives instructors the information they need to determine the authenticity of work as a part of a larger process.

Please read Turnitin’s [Privacy Policy](#), [Acceptable Use Policy](#) and [End-User License Agreement](#), which govern users’ relationship with Turnitin. Also, please note that Turnitin uses cookies and other tracking technologies; however, in its service contract with Queen’s Turnitin has agreed that neither Turnitin nor its third-party partners will use data collected through cookies or other tracking technologies for marketing or advertising purposes.

For further information about how you can exercise control over cookies, see [Turnitin's Privacy Policy](#).

Turnitin may provide other services that are not connected to the purpose for which Queen's University has engaged Turnitin. Your independent use of Turnitin's other services is subject solely to Turnitin's Terms of Service and Privacy Policy, and Queen's University has no liability for any independent interaction you choose to have with Turnitin.

Portions of this document have been adapted, with permission, from the University of Toronto Centre for Teaching Support and Innovation tip sheet "[Turnitin: An Electronic Resource to Deter Plagiarism](#)".

INVALID EXAMS

An exam may be declared invalid in case of an interruption in an in-person examination; if the instructions in a remote or online exam were not followed; if the student uploads wrong materials; or if a situation arises where the integrity of the exam cannot be verified. If an exam is declared invalid, the student may be granted a re-write.

ACADEMIC AND STUDENT SUPPORT

Queen's has a robust set of supports available to you including the [Library](#), [Student Academic Success Services \(Learning Strategies and Writing Centre\)](#), and [Career Services](#). Learners are encouraged to visit the Smith Engineering [Current Students](#) web portal for information about various other policies such as academic advisors, registration, student exchanges, awards and scholarships, etc. Students are also encouraged to review the information that is available in the EngQ Hub, posted in onQ.

ABSENCES (ACADEMIC CONSIDERATIONS) AND ACADEMIC ACCOMMODATIONS

For academic accommodations and considerations please review the information on the [Smith Engineering website](#).

ACCOMMODATIONS FOR DISABILITIES

Queen's University is committed to working with students with disabilities to remove barriers to their academic goals. Queen's Student Accessibility Services (QSAS), students with disabilities, instructors, and faculty staff work together to provide and implement academic accommodations designed to allow students with disabilities equitable access to all course material (including in-class as well as exams). If you are a student currently experiencing barriers to your academics due to disability related reasons, and you would like to understand whether academic accommodations could support the removal of those barriers, please visit the QSAS website (<https://www.queensu.ca/studentwellness/accessibility-services>) to learn more about academic accommodations. To start the registration process with QSAS, click the **Access Ventus** button found on the Ventus student portal: <https://www.queensu.ca/studentwellness/accessibility-services/ventus>

Ventus is an online portal that connects students, instructors, Queen's Student Accessibility Services, the Exam's Office, and other support services in the process to request, assess, and implement academic accommodations. To learn more about Ventus, visit A Visual Guide to Ventus for Students: <https://www.queensu.ca/ventus-support/students/visual-guide-ventus-students>

For questions or assistance with requesting Academic Consideration or Accommodation, contact the Smith Engineering Program Advisor (Accommodations and Considerations) at engineering.aac@queensu.ca

Every effort has been made to provide course materials that are accessible. For further information on accessibility compliance of the educational technologies used in this course, please consult the links below.

EDUCATIONAL TECHNOLOGY	ACCESSIBILITY COMPLIANCE INFORMATION
onQ (Brightspace Learning Management System by D2L)	https://www.d2l.com/accessibility/standards/
MS-Teams	https://support.microsoft.com/en-us/office/accessibility-support-for-microsoft-teams-d12ee53f-d15f-445e-be8d-f0ba2c5ee68f
Zoom	https://zoom.us/accessibility

If you find any element of this course difficult to access, please discuss with your instructor how you can obtain an accommodation.

RELIGIOUS OBSERVANCE

Students in need of accommodation for religious observance are asked to speak to their professor within a week of receiving their syllabus. Note also that alternative assignments are considered "reasonable accommodation" under the Ontario Human Rights Code. Students with questions about their rights and responsibilities regarding religious accommodation should contact the Chaplain at Chaplain@queensu.ca.

OTHER HUMAN-RIGHTS BASED ACCESSIBILITY NEEDS

Students who have accessibility needs based on human-rights covered grounds, should inform their instructors within a week of receiving their syllabus. Student can also contact the contact the Smith Engineering Program Advisor (Accommodations and Considerations) at engineering.aac@queensu.ca for guidance.

TECHNICAL SUPPORT

Some basic comfort level with basic hardware and software skills are required for this course. If you require technical assistance, please contact [Technical Support](#).

SUPPORTIVE PERSONAL COUNSELLING

If at any time you find yourself feeling overwhelmed, anxious, sad, lonely, or distressed, consider confidential [personal counselling and wellness services](#) offered by Smith Engineering and the [Queen's student wellness services](#).