# ENGG512

# Project Appraisal and Evaluation

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Instructor Contact Details

Lecturer-in-charge: Dr. Xiaowei Chen

Email: wlwyxy_29@zju.edu.cn
Office location: Zhejiang University, Hangzhou, China
Consultation Time: Book appointment by sending email to: wlwyxy_29@zju.edu.cn

Teaching Times, Modes and Locations

Course Duration: 20 Dec 2026 to 8 Jan 2027
Modes: Face-to-face
Location: Zhejiang University

Academic Level

Undergraduate

Credit Points:

The course is worth 6 units of credit point.

Credit Hours

The number of credit hours of this course equals to the credits of a standard semester- long course.

Contact Hours

The course contains a total of 53 contact hours, which consists of orientation, lectures, seminars, quiz, discussion, research, case study, small tests, assignments, on-site field trip(s), in-class and after-class activities, revision, self-study, and final exam. Students will receive an official transcript which is issued by Zhejiang University when completing this course.

Enrolment Requirements

Eligibility requires enrollment in an overseas university as an undergraduate or postgraduate student, proficiency in English, and pre-approval from the student's home institution.

## Course Description:

This course introduces the fundamental principles and methods of project appraisal for engineering and infrastructure projects. Students develop the knowledge and analytical skills required to evaluate project feasibility using financial, economic, and strategic assessment techniques. Key topics include the time value of money, discounted cash flow analysis, investment evaluation methods, cost-benefit analysis, risk and uncertainty, taxation, depreciation, and sustainability considerations. Through practical case studies and real-world applications, students learn to compare alternative investment options, interpret appraisal results, and support informed decision-making in engineering and project management contexts.

## Prerequisite:

Prior knowledge in fundamental engineering is required for taking this

course.

## Learning Resources

- Park, Chan S. Contemporary Engineering Economics. 7th ed., Pearson, 2021.
- Sullivan, William G., Elin M. Wicks, and C. Patrick Koelling. Engineering Economy. 17th Global ed., Pearson, 2020.

## Learning Objectives

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

・Explain the fundamental principles of project appraisal, including the time value of money, cash flow analysis, and investment evaluation criteria.

・ Apply engineering economic methods to evaluate project feasibility using commonly adopted financial appraisal techniques.

・ Analyze project alternatives by considering financial, environmental, social, and strategic factors within different decision-making contexts.

・Assess the effects of risk, uncertainty, inflation, taxation, depreciation, and exchange rate fluctuations on project performance.

・Recommend appropriate project appraisal methods to support informed investment and engineering management decisions.

Course Delivery:

- Face-to-face Lecture mode includes lectures, seminars, quiz, discussion, research, case study, small tests, assignments, on-site field trip(s), in-class and after-class activities, revision, and final exam.

The following course will be taught in English. There will also be guest speakers and optional field trips available for students who would like to enhance their learning experience. All courses and other sessions will be run during weekdays.

Topics and Course Schedule:

| WK | Topic | Activities |
| --- | --- | --- |
| 1 | Introduction to Auditing | Lecture; Tutorial |
| 1 | Introduction to Project Appraisal and Engineering Economics | Lecture; Tutorial |
| 1 | Time Value of Money and Cash Flow Analysis | Lecture; Tutorial |
| 1 | Project Evaluation Methods: Present Worth, Annual Worth and Future Worth | Lecture; Tutorial |
| 1 | Investment Decision Methods: NPV, IRR and Payback Period | Lecture; Tutorial |
| 2 | Cost–Benefit Analysis and Project Comparison | Lecture; Tutorial |
| 2 | Inflation, Exchange Rates and Cost of Capital | Lecture; Tutorial |
| 2 | Depreciation, Taxation and Financing Analysis | Lecture; Tutorial |
| 2 | Quiz | Closed book |
| 2 | Asset Replacement and Life-Cycle Cost Analysis | Lecture; Tutorial |

| | | |
|---|---|---|
| 3 | Risk, Uncertainty and Sensitivity Analysis | Lecture; Tutorial |
| 3 | Decision Trees and Project Risk Assessment | Lecture; Tutorial |
| 3 | Sustainable Project Appraisal and Multi-Criteria Decision Making | Lecture; Tutorial |
| 3 | Infrastructure Project Appraisal: Case Studies | Lecture; Tutorial |
| 3 | Integrated Project Evaluation and Investment Decision Making | Lecture; Tutorial |
| 3 | Revision | Tutorial |
| 3 | Final exam | Closed book |

Assessments:

| | |
|---|---|
| Class participation | 15% |
| Quiz | 15% |
| Assignments | 20% |
| Final exam | 50% |

Pass Requirement (Double Pass Rule)

To pass this course, students are required to achieve:

- an overall mark of 50% or above, and
- a pass mark (50% or above) in the Final Examination.

Students who achieve an overall mark of 50% or above but do not achieve a pass in the Final Examination will receive a fail grade for the course.

Grade Descriptors:

| | | |
|---|---|---|
| HD | High Distinction | 85-100 |
| D | Distinction | 75-84 |
| Cr | Credit | 65-74 |
| P | Pass | 50-64 |
| F | Fail | 0-49 |

**High Distinction 85-100**

- Treatment of material evidences an advanced synthesis of ideas Demonstration of initiative, complex understanding, and analysis.
- Work is well-written and stylistically sophisticated, including appropriate referencing, clarity, and some creativity where appropriate.
- All criteria addressed to a high level.

**Distinction 75-84**
- Treatment of material evidences an advanced understanding of ideas Demonstration of initiative, complex understanding and analysis Work is well-written and stylistically strong.
- All criteria addressed strongly.

**Credit 65-74**
- Treatment of material displays a good understanding of ideas.
- Work is well-written and stylistically sound, with a minimum of syntactical errors.
- All criteria addressed clearly.

**Pass 50-64**
- Treatment of material indicates a satisfactory understanding of ideas Work is adequately written, with some syntactical errors.
- Most criteria addressed adequately.

**Fail 0-49**
- Treatment of ideas indicates an inadequate understanding of ideas Written style inappropriate to task, major problems with expression.
- Most criteria not clearly or adequately addressed.

Academic Integrity

Students are expected to uphold the university's academic honesty principles which are an integral part of the university's core values and principles. If a student fails to observe the acceptable standards of academic honesty, they could attract penalties and even disqualification from the course in more serious circumstances. Students are responsible for knowing and observing accepted principles of research, writing and any other task which they are required to complete.

Academic dishonesty or cheating includes acts of plagiarism, misrepresentation, fabrication, failure to reference materials used properly and forgery. These may include, but are not limited to: claiming the work of others as your own, deliberately applying false and inaccurate information, copying the work of others in part or whole, allowing others in the course to copy your work in part or whole, failing to appropriately acknowledge the work of other scholars/authors through acceptable referencing standards, purchasing papers or writing papers for other students and submitting the same paper twice for the same subject.

This Academic Integrity policy applies to all students of the Zhejiang University in all programs of study, including non-graduating students. It is to reinforce the University's commitment to maintain integrity and honesty in all academic activities of the University community.

Policy

The foundation of good academic work is honesty. Maintaining academic integrity upholds the standards of the University. The responsibility for maintaining integrity in all the activities of the academic community lies with the students as well as the faculty and the University. Everyone in this community must work together to ensure that the values of truth, trust and justice are upheld.

Academic dishonesty affects the University's reputation and devalues the degrees offered. The University will impose serious penalties on students who are found to have violated this policy. The following penalties may be imposed:

- ✓ Expulsion
- ✓ Suspension
- ✓ Zero mark /fail grade
- ✓ Marking down
- ✓ Re-doing/re-submitting of assignments or reports, and
- ✓ Verbal or written warning.