Faculty of Science and Technology

Bachelor of Engineering (Honours) in

Civil Engineering

SCE5481

Principles of Project Finance

Teaching and Learning Outline (Brief)

A. QF Level 5

B. Credit Values 3

C. Year 4

D. Pre-requisite Nil

E. Co-requisite Nil

F. Module Aim(s)

The module aims to introduce students to the concepts and processes in project funding, particularly for capital intensive and infrastructure projects. It introduces the techniques of financial instruments, appraisal of risks and funding options and provides an overview of the role of public and private sector funding mechanisms. Students will be able to understand the financial implications of a project, particularly the role of a project engineer.

G. Module Learning Outcomes

On completion of this Module, students are expected to be able to:

1. apply the principles and techniques of project finance processes and financial management for the identification, analysis, allocation and management of risks associated with a project;

2. evaluate investment strategies, sources of finance and the internal reporting structure of engineering projects; and

3. formulate strategies and preliminary financial models for capital-intensive infrastructure projects.

H. Module Outline

The following topics/areas will be covered:

1. *Basic financial tools:*
   - interest and rates; present worth evaluation; cash flow; rates of return; inflation and depreciation; cost benefit analysis

2. *Project appraisal:*
   - project bankability; agreement and ancillary contracts; types of risk; risk analysis and management; budgetary control; non-economics based appraisal methods

3. *Project finance structure:*
   - debt finance; Mezzanine finance; equity finance

4. *Financing capital-intensive infrastructure projects:*
   - joint venture; outsourcing; public-private partnerships (PPP); private finance initiative (PFI); build-operate-transfer (BOT); case studies

I. Curriculum Hours / Class Contact Hours

- Lecture : 28 hours
- Tutorial : 14 hours

J. Teaching and Learning Strategies

A mixture of teaching and learning approaches and strategies would be adopted to develop students' knowledge and skills to prepare for and evaluate the financing of a project.

Direct instructions in lecture would be used to facilitate an effective transmission of fundamental concepts and knowledge from the instructors to students. Seminars and classroom interactions would be an effective way for students to construct knowledge with support from speakers, tutors, fellow students and others. In this module, a variety of learning activities including group discussions, case studies, problem solving etc. will be adopted to facilitate students' learning process and enhance their generic skills.

The campus also provides a virtual learning environment to encourage the development of independent learning skills through interactions with tutors and fellow students.

K. Assessment Strategies

Assessment will be criteria-based and will enable students to demonstrate their achievement of both the programme and module learning outcomes. Assessment may take a variety of forms. Appropriate assessment methods and tasks are chosen and designed with reference to the measurement dimensions. The measurement dimensions are set in alignment with the programme and module learning outcomes and used as reference in assessing students' progress and achievement.

The following abilities will be assessed through coursework and examination. Coursework includes assignments and a case study project report.

1. Ability to prepare and critically examine the cash flow and economic feasibility of a project.

2. Ability to identify, assess and prioritize risk in different types of project finance.

3. Ability to propose, with justification, an appropriate financial structure for a project.

A summary of assessment methods is shown in the table below:

Module Learning Outcomes (MLOs)	Assessment Methods				Details of Assessment Methods
	A	P	T	E	
1. Apply the principles and techniques of project finance processes and financial management for the identification, analysis, allocation and management of risks associated with a project;	✓	✓		✓	- Assignment: Paper assignments of basic concepts in project finance and/or review of worldwide practices - Project: A financial proposal for a capital-intensive project - Examination: Comprehensive paper examination with both calculations and structured problem solving
2. Evaluate investment strategies, sources of finance and the internal reporting structure of engineering projects; and	✓	✓		✓	- Assignment: Paper assignments of basic concepts in project finance and/or review of worldwide practices - Project: A financial proposal for a capital-intensive project - Examination: Comprehensive paper examination with both calculations and structured problem solving
3. Formulate strategies and preliminary financial models for capital-intensive infrastructure projects.		✓			- Project: A financial proposal for a capital-intensive project

Legends: A – Assignment
P – Case Study Project
T – Term Test
E – Final Examination

The percentage contributions to the overall module assessment are:-

- Assignment : 20%
- Project : 40%
- Examination : 40%

L. Reading List

Textbooks:

1. ROGERS, M. (2001) *Engineering project appraisal: the evaluation of alternative development schemes*. Oxford: Blackwell Science.

2. PRETORIUS, F. *et al*. (2008) *Project Finance for Construction & Infrastructure; principles & case studies*. Oxford: Blackwell Publishing.

3. TAN, W. (2007) *Principles of project and infrastructure finance*. London: Taylor & Francis.

References:

4. YONG, H.K. (ed.) (2010) *Public-private partnerships policy and practice: a reference guide*. London: Commonwealth Secretariat.

5. ESTY, B.C. (2004) *Modern project finance: a casebook*. New York: John Wiley & Sons.

6. DELMON, J. (2011) *Public-private partnership projects in infrastructure: an essential guide for policy makers*. New York: Cambridge University Press.

7. DELMON, J. (2009) *Private sector investment in infrastructure: project finance, PPP projects and risk*. Alphen aan den Rijn, the Netherlands: Kluwer Law International.

8. GATTI, S. (2008) *Project finance in theory and practice: designing, structuring, and financing private and public projects*. Amsterdam: Elsevier/Academic Press.