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1. Staff Contact Details

Summary of the Course

The course consists of two sections:

Section 1 (Week 1-6) : Dr Maruf Hasan

Section 2 (Week 7-12): Guy Allinson

The course will focus on providing comprehensive coverage of the concepts of economic decision analysis in engineering and will also address practical concerns of engineering economic analysis.

Aims of the Course

The objective of the course is to provide engineers and managers with the knowledge of principles, basic concepts and methodology of economic decision analysis. This will assist the students to develop proficiency with the methods and with the process for making rational decision they are likely to encounter in professional practice.

Student learning outcomes

This course is designed to address the below learning outcomes and the corresponding Engineers Australia Stage 1 Competency Standards for Professional Engineers as shown. The full list of Stage 1 Competency Standards may be found in Appendix A.

After successfully completing this course, you should be able to:

| Learning Outcome | | EA Stage 1 Competencies |
|------------------|--|--|
| 1. | Apply the knowledge of systematic evaluation of the costs and benefits of proposed technical and business project and ventures | PE 1.2, PE1.3, PE2.4, PE3.4 |
| 2. | Understand cost concepts, cash flows, their estimation and interest formulae. Also, to understand various depreciation methods and learn about the effect of income tax on economy studies | PE1.2, PE1.3PE3.4 |
| 3. | Be familiar with various methods for economy studies and comparing alternative investments | PE 2.3, PE 2.4, PE3.4 |
| 4. | Understand the role of probability analysis in decision making and decision tree analysis | PE1.1, PE 1.2, PE 1.3, PE2.4, PE3.4 |
| 5. | Value information and analyse a portfolio of investments | PE 2.1, PE 2.2, PE 2.3, PE3.1 - PE 3.6 |

3. Teaching strategies

Readings and lectures will be used to introduce and explain the theoretical foundations of various economic analysis principles. Problem solving exercises will be used to apply and reinforce the understanding of the concepts and how they can be applied to solve problems

Module B

| Week | Date | Topic |
|------|-------|--|
| 7 | 10/09 | Limitations of sensitivity analysis Using probability distributions |
| 8 | 17/09 | Exploration decisions |
| 9 | 24/09 | Binomial distributions |
| | 1/10 | Mid Semester Break |
| 10 | 8/10 | Decision trees |
| 11 | 15/10 | Value of information |
| 12 | 22/10 | Monte Carlo simulation Portfolio analysis |

Course revision (Week 13)

| | | |
|----|-------|-----------------|
| 13 | 29/10 | Course Revision |
|----|-------|-----------------|

We reserve the right to change lecturers and topics depending on the availability of the lecturers and the progress of the course

5. Assessment

The assessment will be through class tests and a final examination. The various parts of the course contributing to the overall grade is as follows:

7. Course evaluation and development.

Feedback on the course is gathered periodically using various means, including the Course and Teaching Evaluation and Improvement (CATEI) process, informal discussion in the final Problem solving session for the course, and the School's Student/Staff meetings. Your feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback.

Program Intended Learning Outcomes