



SE-833-FA2

ENERGY FINANCIAL ASSESSMENT

6 ECTS

- Year of study:** First year MSc.
Semester: Spring.
Level of course: 4.-5. Second cycle, introductory-intermediate.
Type of course: Taught in the Iceland School of Energy. Elective for all MSc programs in engineering. Recommended elective for MSc Engineering Management, MSc Financial Engineering, MSc Energy Engineering and MSc Electrical Power Engineering.
Prerequisites: None.
Schedule: Taught during the 12-week teaching period. Schedule will be introduced in the learning management system Canvas.
Supervisor: Juliet Newson.
Lecturer: Páll Jensson.

Learning outcome:

After the course students will be able to develop computer models to assess the profitability/feasibility of investments. This main Learning Outcome can be broken down into the following sub-outcomes:

Knowledge:

- Understand the theoretical basis for profitability assessment and the time value of money
- Understand the relations and the difference between company financial statement
- Discuss and explain with the concepts and principles of accounting and financial management
- Understand the difference between feasibility studies and business plans and the objectives of each
- Understand Multi Criteria Decision Making
- Understand what working capital is

Skills:

- Use and calculate the main measures of profitability including Net Present Value and Internal Rate of Return
- Know and calculate the main ways to finance a project
- Use the three-point method budgeting and investment cost estimations
- Perform sensitivity analysis including impact analysis and scenario analysis of projects
- Do Monte Carlo simulations for risk assessment of projects
- Use Decision Trees as a method for making investment decisions
- Apply the AHP method
- Calculate the most important financial ratios

Competence:

- Write a good business plan including the economical calculations for profitability assessment of an investment project
- Build up Operating Statement, Cash Flow and Balance Sheet for a planned operation
- Present and interpret the results of profitability calculations

All course descriptions may be subject to change. Revised information on the course schedule, reading material, teaching and learning activities, and assessment methods will be introduced in the learning management system Canvas at the beginning of the semester.

**Content:**

The basic concepts and principles of project finance with emphasis on profitability assessment of projects and feasibility studies. Among items are project profitability measures, planning cash flow, company operating statements, balance sheets and financial ratios. During the course the students develop themselves an Excel model including measures of profitability assessment. The teaching is mainly computer work and group work exercising project feasibility studies, sensitivity analysis and risk assessment applied to a real world case study.

Reading material; Teaching and learning activities; Assessment methods: Will be introduced in the learning management system Canvas at the beginning of the semester.

Language of instruction: English.

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