



NATIONAL UNIVERSITY OF ENGINEERING
COLLEGE OF ELECTRICAL AND ELECTRONICS
ENGINEERING
ELECTRICAL ENGINEERING PROGRAM

SYLLABUS - EE384 ECONOMICS ENGINEERING

I. GENERAL INFORMATION

CODE	: EE384
SEMESTER	:
CREDITS	: 4
HOURS PER WEEK	: 4 (Theory – Practice)
PREREQUISITES	: EE353 Analysis of Power Systems I
CONDITION	: Elective

II. COURSE DESCRIPTION

The Economics Engineering course is theoretical-practical and represents the study of subjects such as market theory, production theory, costs of projects, company and organizations, the objectives of which is to provide microeconomic instruments most applied to the study of technical-economic options in engineering.

III. COURSE OUTCOMES

1. Learn basic tools to perform the analysis of the market supply and demand, assessing the importance of this analysis in reality.
2. Identify and analyze consumer behavior, assessing consequences of the economic decisions.
3. Interpret and manage company behavior, understanding the link between production and costs, assessing corporate social sense.
4. Identify and interpret several types of market and the corporate economic environment, understanding and assessing the importance of it for the company and the society.

IV. LEARNING UNITS

1. DEMAND AND SUPPLY BEHAVIOR, PROJECTIONS

Economics, Economic Systems
Market research: Demand
Supply, Demand, Marketing, Prices

2. PRODUCTION THEORY AND PROJECTS PROFILE

Production Theory and Profile studies in private investments.
Production Theory and Public Investment Project (PIP) Methodology according to National Public Investment Systems (SNIP)
General Aspects, and Public Investment Identification
Mid-term exam

3. COST THEORY AND INVESTMENT FINANCING

Investment components assessment
Financial Factors, application in the investment taking of decisions
Costs and their classification, Incomes and Profits
Project's Economics and financial engineering assessment

4. MODERN MANAGEMENT IN INVESTMENTS AND FINANCIAL MANAGEMENT

Company's Financial Operation
Company's Financial Management and financial statements
Yield and Financial leverage

V. PRACTICAL EXPERIENCES

Quizzes applied to real cases are carried out in class.

VI. METHODOLOGY

This course is carried out in two modes:

- a. Theory sessions: Active methodology is used to favor students' learning, with participation during readings, oral interventions and discussions in group dynamic.
- b. Practice sessions: Quizzes are taken with the aim of developing skills and flairs in calculation competences. Students also prepare group research papers and expose them. The hardware and aids, such as computer, multimedia projector, offprints, slides, board and virtual campus allow students to understand the subjects.

VII. EVALUATION FORMULA

The average grade PF is calculated as follows:

$$PF = ((P1 + P2 + P3)/3 + EP + EF)/3$$

EP: Mid-Term Exam

EF: Final Exam

P#: Quizzes

VIII. BIBLIOGRAPHY

1. **BACA URBINA GABRIEL**
Economics Engineering Fundamentals (Spanish)
Edit. McGraw Hill, 2009
2. **HÉCTOR VISCENCIO B.**
Economics for taking of decisions (Spanish)
Prentice Hall, 2008
3. **DE LA TORRE**
Investment Projects assessment (Spanish)
Prentice Hall Editorial, 2008
4. **SAPAG CHAIN NASSIR**
Investment Projects, Formulation y Assessment (Spanish)
Pearson Prentice Hall, Mexico, 2007