A) COURSE

Course Id:	Course
5646	ENGINEERING ECONOMIC ANALYSIS

Class Hours per Week	Lab hours per week	Complementary practices	Credits	Total hour course
3	0	3	6	48

B) GENERAL COURSE INFORMATION:

	EE (IEA)	ME (IM)	MME (IMA)	EME (IME)	MTE (IMT)
Level:	X	VIII	NA	NA	NA
Course Type (Required/Elective)	ELECTIVE	ELECTIVE	NA	NA	NA
Prerequisite Course:	PRINCIPLES OF ADMINISTRATION	315	NA	NA	NA
CACEI Classification:	CI	CI	NA	NA	NA

C) COURSE OBJECTIVE

At the end of the course, the student will be capable of:
It is important for students of mechanical engineering career, learn and use the basic tools of a basic general accounting system, cost control and project evaluations for decision making.

D) TOPICS (CONTENTS AND METHODOLOGY)

1 . FINANCIAL ACCOUNTING		12 Hours
Specific Objective:	The student will understand the role of financial accounting in a firm, its origins and practical applications.	

1.1	Objectives of financial accounting
1.1.1	Principles and objectives of financial accounting
1.1.2	Mechanical engineering and financial accounting
1.2	Understanding the accounting process
1.2.1	Capital, objective, classification and application
1.2.2	Active, passive, objective, classification and application
1.3	Financial statements
1.3.1	Balance sheet
1.3.2	Profit and loss statement
1.3.3	Statement of cash flows
1.3.4	Results analysis
1.4	Financial ratios
1.4.1	Liquidity ratio
1.4.2	Debt ratio
1.4.3	Coverage ratio
1.4.4	Activity ratio
1.4.5	Profitability ratio
1.5	Economic value added
1.5.1	General formula
1.5.2	Examples of economic value added

Readings and other resources	Books, Articles, Further literature, Internet Links.
Teaching Methodologies	Exhibition themes, concept analysis, problem resolution and discussion, group work and individual.
Learning Activities	Preparation of reports. Tasks and teamwork .

2.- **COST ACCOUNTING**	**12 Hours**
Specific Objective:	The student will learn the principles of cost accounting. The student will also learn the role of cost accounting in a decision-making process, continuous improvement systems and operations management.

2.1	Purpose of cost accounting
2.1.1	Objectives of cost accounting
2.1.2	Financial accounting vs. cost accounting
2.2	Cost classification
2.2.1	Concepts, definitions and classifications of cost
2.2.2	Cost structure of a product
2.3	Product costing
2.3.1	Differences between manufacturing and service firms
2.3.2	Manufacturing cost statement and cost of sales statement
2.3.3	Activity-based costing (ABC)
2.4	Cost-volume-profit analysis
2.4.1	Definitions, concepts and basic graph
2.4.2	Applications
2.5	Cost-revenue analysis for short-term decision-making
2.5.1	Managerial decision-making process
2.5.2	Relevant cost and revenue analysis
2.5.3	Problems in the decision-making process
2.5.4	Buy or make?
2.5.5	Product discontinuation analysis
2.5.6	Optimal product mix analysis
2.5.7	To sell finished or semi-finished goods?
2.5.8	Buy or make?
2.5.9	Additional shifts or labor overtime?
2.5.10	Credit and discount policies
2.5.11	To outsource or not to outsource?
2.5.12	Fixed cost analysis

Readings and other resources	Books, Articles, Further literature, Internet Links.
Teaching Methodologies	Exhibition themes, concept analysis, problem resolution and discussion, group work and individual.
Learning Activities	Preparation of reports. Tasks and teamwork .

3. - PROJECT FORMULATION		**12 Hours**
Specific Objective:	The student will learn and apply the principles of project formulation management.	
3.1 What is a project? 3.2 Market feasibility study 3.2.1 Market research 3.2.2 Supply analysis 3.2.3 Demand analysis 3.2.4 Price analysis 3.25 Marketing channels and distribution 3.3 Technical feasibility study 3.3.1 Facility size analysis 3.3.2 Facility location analysis 3.3.3 Facility layout analysis 3.4 Economic feasibility study 3.4.1 Cost-revenue analysis 3.4.2 Equilibrium value analysis 3.4.3 Preparation of financial statements		
Readings and other resources	Books, Articles, Further literature, Internet Links.	
Teaching Methodologies	Exhibition themes, concept analysis, problem resolution and discussion, group work and individual.	
Learning Activities	Preparation of reports. Tasks and teamwork .	

4**.- PROJECT EVALUATION**		**12 Hours**
Specific Objective:	The student will learn the principles involved in the economic evaluation of projects.	
4.1 Time value of money 4.2 Time value of money formulas 4.2.1 Present value 4.2.2 Future value 4.2.3 Annuity series 4.2.4 Gradient series 4.2.4.1 Arithmetic gradient series 4.2.4.2 Geometric gradient series 4.2.5 Principal and interest payment 4.3 Net cash flow principles 4.3.1 Depreciation methods 4.3.2 Interest payment 4.3.3 Calculation of net cash flow 4.4 Project evaluation parameters 4.4.1 Net present value 4.4.2 Internal rate of return 4.4.3 Minimum acceptable rate of return 4.4.4 Benefit/cost analysis 4.4.5 Payback period 4.4.6 Salvage value 4.4.7 Modified net present value 4.5 Project selection		
Readings and other resources	Books, Articles, Further literature, Internet Links.	
Teaching Methodologies	Exhibition themes, concept analysis, problem resolution and discussion, group work and individual.	
Learning Activities	Preparation of reports. Tasks and teamwork .	

E) TEACHING AND LEARNING METHODOLOGIES

The teaching of the course will be held in the manner:
Introduction and analysis of concepts by the teacher, according to thematic content, number of hours and the book for the topic. It will also discuss issues within the classroom and conduct problems to work with them.

F) EVALUATION CRITERIA:

Evaluation:	Schedule	Suggested Form of Evaluation and weighing	Topics
1er. Evaluation Partial	Session 14	Exam 80% , Homework 20%	Unity 1 y 2
2º Evaluation Partial	Session 12	Exam 80% , Homework 20%	Unity 3
3er. Evaluation Partial	Session 12	Exam 50% , Project 50%	Unity 4
Evaluation Final Ordinary		100% Average partial evaluations	
Other Activity:			
Exam Extraordinary	According to schedule school secretary	100% Exam	100% Program
Exam of title	According to schedule school secretary	100% Exam	100% Program
Exam regularization	According to schedule school secretary	100% Exam	100% Program

G) BIBLIOGRAPHY AND ELECTRONIC RESOURCES

David Noel Ramírez Padilla
(administrative accounting)
- EVALUACIÓN DE PROYECTOS
Mc Graw Hill.
Gabriel Baca Urbina.
(Evaluation of Projects)

- CONTABILIDAD BÁSICA
Mc Graw Hill.
Interamericana de México, 1994.
Moreno Hernández Joaquín, I.
(Basic Accounting)

- PRIMER CURSO DE CONTABILIDAD
Lara Flores Elías,
Trillas, México, 1994.
(First Accounting Course)

CONTABILIDAD PARA NO CONTADORES
Mc. Graw Hill. 2004.
Guajardo Cantú Gerardo.
(Accounting for Non-Accountants)
Ralph Polimeni- Frank J. Fabozzi- Arthur Adelberg

CONTABILIDAD GERENCIAL
Editorial Trillas.
Juan Manuel Izar Landeta

(Managerial Accounting)

-CONTABILIDAD ADMINISTRATIVA
Mc Graw Hill.

Main Books

Complementary Books