

A) COURSE

Course Id:	Course
5668	PROJECT INTEGRATOR IMA

Class Hours per Week	Lab hours per week	Complementary practices	Credits	Total hour course
3	4	3	10	48

B) GENERAL COURSE INFORMATION:

	EE (IEA)	ME (IM)	MME (IMA)	EME (IME)	MTE (IMT)
Level:			IX		
Course Type (Required/Elective)			Required		
Prerequisite Course:			Administration of projects		
CACEI Classification:			IA		

C) COURSE OBJECTIVE

At the end of the course, the student will be capable of:
Help students to acquire the necessary experience to integrate much of the acquired throughout the career in a single project. Materializing the theoretical knowledge into a physical product one hundred percent operational. Developing and strengthening generic and specific competencies. Assuming responsibilities and leadership, and use at maximum the resources that have; limited to work under budget and within the limits previously established for themselves; promoting the study, creativity and decision to make improvements and solve problems. Knowledge.

D) TOPICS (CONTENTS AND METHODOLOGY)

1 . METHODOLOGY		1 Hours
Specific Objective:	That the student understands the methodology that will be used during the course and what is expected of him. Teams will be formed and projects to be allocated.	
1.1-	Objective of the course.	
1.2-	Methodology.	
1.3-	Obligations and responsibilities of students.	
1.4-	Assessment.	
1.5-	Types of projects and selection.	
1.6-	Formation of work teams and projects assignment.	
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		

2.- DRAFT	8 Hours
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Specific Objective:	That the student be able to limits the project based on the requirements, conduct consultations, propose solutions, analyze alternatives and select the best, estimate cost and delivery times and finally submit a proposal.
	2.1- Project analysis. 2.2- Gathering information. 2.3- Intellectual property. 2.4- Conceptualization and creative generation of ideas. 2.5- Sensitivity and feasibility analysis 2.6- Operating forecast. 2.7- Generating basic engineering (preliminary design). Preparation of proposal.
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	

3. - PROJECT 36		8 Hours
Specific Objective:	That the student conducts the following processes: organizations, research, design, control of documents, manufacture, assemble, product testing and product release.	
	3.1- Schedule. 3.2- Research and theoretical support. 3.3- Preparation of detailed engineering. 3.4- Purchase and manufacturing. 3.5- Product assembly. 3.6- Quality control. 3.7- Testing. 3.8- Cost analysis. 3.9- Product release.	
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		

4. - VALIDATION		3 Hours
Specific Objective:	The student analyzes the results obtained during all stages of the project; submit an operation manual of the product, a written report, a physical product and present a formal defense of his project.	
	4.1- Operation and maintenance manual. 4.2- Final report. 4.3- Defense.	
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		

E) TEACHING AND LEARNING METHODOLOGIES

The student will develop on of the following types of projects:

- Project assignment by teacher.
- Research project or project proposed by him.
- Project with industry.

Use the project-oriented learning method (POL). The project will be conducted in the following stages:

1. Analysis of requirements.
2. Research activities.
3. Presentation of alternative solutions.
4. Feasibility analysis.
5. Selecting the best solution.

6. Preparation the proposal.
7. Development of program activities and team organization.
8. Development of the solution.
9. Development the quality inspection format.
10. Preparing the performance tests.
11. Elaboration of the quality certificate.
12. Elaboration of the operation manual.
13. Defense of the project.
14. Presentation of the final report.

For any kind of project, the students has to prepare and final report with the following sections:

- Cover
- Foreword
- Table of contents
- Development
- Bibliography

During the course, students will acquire the experience of developing a project following the methodology POL.

F) EVALUATION CRITERIA:

Evaluation:	Schedule	Suggested Form of Evaluation and weighing	Type
Requirements Analysis and programming activities	Week 3	10.00%	Team
Theoretical exam (Units 1 and 2) .	Week 4	10.00%	Individual
Average evaluation personal portfolios weekly	Weekly	6.00%	Individual
Average evaluation portfolios equipment weekly	Weekly	24.00%	Team
Final evaluation of draft.	End of Semester	50.00%	Team
TOTAL ORDINARY (Weighted sum of previous concepts)		100.00%	
Other activity:	Development of an integrated project , including: Product Physical Calculation memory Maintenance and Operation Manual		
Extraordinary review (It consists of the evaluation end of the project)	Week 17 semester	Work developed in the semester: 10% Analysis requirements and activity program 10% Theoretical exam 6% Average evaluation personal	Team/Individual

		portfolio weekly 24 % Average evaluation Team Portfolio weekly Extraordinary examination : 50 % Final Assessment draft.	
Examination according to (It consists of the evaluation end of the project)	According to schedule of School Secretary	Work developed in the semester: 10% Analysis requirements and activity program 10% Theoretical exam 6% Average evaluation personal portfolio weekly 24 % Average evaluation Team Portfolio weekly Extraordinary examination : 50 % Final Assessment draft.	Team/Individual
Regularization exam (It consists of the evaluation end of the project).	According to schedule of School Secretary	Work developed in the semester: 10% Analysis requirements and activity program 10% Theoretical exam 6% Average evaluation personal portfolio weekly 24 % Average evaluation Team Portfolio weekly Extraordinary examination : 50 % Final Assessment draft.	Team/Individual

G) BIBLIOGRAPHY AND ELECTRONIC RESOURCES

Aalborg University Press. The Aalborg Experiment. Project Innovation in University Education
<http://www.adm.aau.dk/rektor/aalborgexperiment/engelsk/preface.html/> [Consultado el 17/04/2013]

Asimow, Morris. Introducción al proyecto, Herrero Hermanos. 5° Edición, México 1976. 187 pags.

James T. Luxhøj, Poul H.K. Hansen. (1996) Engineering Curriculum Reform at Aalborg University. <http://www.jee.org/1996/july/94.pdf> [Consultado el 18/05/2011]

Kevin Otto & Kristin Wood, Product Design. Techniques in reverse engineering and new product development,
 Prentice Hall, , 2001, eng.

Krick, E. V. Introducción a la Ingeniería y al Diseño de la Ingeniería Limusa. México 1986. 239 pags.
 Schmelkes, Corina, Manual para la presentación de Anteproyectos e Informes de Investigación. Oxford, 2° Ed. México 1998.

Manual del profesor

5720_ProyectoMecatrónico_SINTETICO_PROPUESTA



Main Books

Complementary Books