

COLLEGE OF ENGINEERING MECHANICAL AND ELECTRICAL DEPARTMENT



Course name: PROJECT INTEGRATOR IEA
Course ID: 5671
U.A.S.L.P. ID:
CACEI ID:
Study plan level: IX
Credits: 10
Hours per week: 3
Total hours per week: 48
Lab hours per week: 4
Extra-class work hours per week: 3
Course type: IEA/Mandatory, it belong to the program
Curricular last review: 2013
Prerequisite course (name and ID): More than 360 credits approved

JUSTIFICATION OF THE COURSE

Most graduates engaged in projects in the beginning of his professional life, faced problems that integrate different areas of knowledge (not exactly with his own career), such as medicine, computer science, natural and social sciences, as well as the areas of human, financial and technology resources in order to establish relationships with suppliers and customers (inside and outside the company where they work). They have to work with limited resources and infrastructure to obtain a final product or service of the highest quality and at the same time have to deal with pressures to meet the lowest possible cost, the minimum error (where permitted) and the due date.

Factors such as globalization, diversity of specializations, unemployment and high competitiveness have placed professional work experience as a critical factor for obtaining certain positions, besides the need for more flexible people, capable of covering positions temporarily or permanently.

What is sought in this course is that students can have a close experience to what will be their work environment and the demands of industry in real life, and based on this, facilitate their incorporation into the professional life in a smoother way, leading them to exploit their skills and knowledge in the shortest time, giving them a competitive advantage against students from other schools and universities, causing a feeling of satisfaction and success that results in the search for new harder challenges in working life

INSTRUCTIONAL OBJETIVES

Help students to acquire the necessary experience to integrate much of the knowledge

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, as their knowledge and capabilities in the area of design. 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.

THEMATIC CONTENT

1. METHODOLOGY

1 Hrs

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.

2. DRAFT

8 Hrs

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).

2.8- Preparation of proposal.

3. PROJECT 36

Hrs

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.

4. VALIDATION

3 Hrs

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.

METHODOLOGY

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.

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

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

EVALUATION

The assessment of this course corresponds to specific legislation, indicated in section (3.4.1.Ab) of the Manual for the design of curriculum proposals and management plans offer new educational authorized by H. College Board of Directors.

The first four items of assessment will be the assessed by the teacher of the course, and the final evaluation of the project will be given by a panel of experts designed by the Project Committee of each program.

10.00% Requirement analysis and programming activities (team).

6.00% Evaluation of e-portfolio (individual).

Advances 24.00% of the project (team).

10.00% Written examination (individual).

50.00% Final evaluation of the project (team).

BIBLIOGRAPHY

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

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Manual del profesor

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