



**NATIONAL UNIVERSITY OF ENGINEERING**  
**COLLEGE OF SCIENCES**  
**ENGINEERING PHYSICS PROGRAM**

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**IF563 – RESEARCH PROJECT**

**I. GENERAL INFORMATION**

<b>CODE</b>	: IF563 Research Project
<b>SEMESTER</b>	: 10
<b>CREDITS</b>	: 4
<b>HOURS PER WEEK</b>	: 6 (Theory – Practice)
<b>CONDITION</b>	: Compulsory
<b>PREREQUISITES</b>	: IF482 Introduction to Materials Science and Engineering IF462 Control Theory IF511 Electronic Instrumentation Project IF442 Solar Engineering

**II. COURSE DESCRIPTION**

For becoming Professional Engineers, graduates have to submit and defend an engineering project. In this course, students advance the development of the project with the guidance of specialized faculty. Students identify the project theme and work to complete a prototype representing the proper solution to the identified problem or need.

**III. COURSE OUTCOMES**

1. Interpret requirements and needs and translate them into the formulation of an engineering project.
2. Propose proper and adequate solutions to engineering problems.
3. Select equipment and instruments and properly use them according to the experiment to be done.
4. Present clear and well written technical reports using proper symbology and norms.
5. Clearly express ideas supported by coherent arguments.

**IV. COURSE CONTENTS**

**1. Project Theme**

Research themes are proposed by College research groups, faculty or students. Course faculty assures that themes are coherent within Program objectives.

**2. Working Plan**

Student identify the activities of the project, sequence and prioritize them, estimate required time to complete each activity and formulate a working schedule for the semester.

### **3. Project Progress and Development**

Students working in groups advance to develop and complete project activities according to schedule. Students design a complete prototype and simulation and test its behavior and response. Students carry out required experimental work in College laboratories.

### **4. Report**

Faculty presents the norms for report writing, as well as the corresponding formats to be used for students to write and submit the project report.

### **5. Oral Presentation**

All students in each group orally defend the project in front of a specialized jury composed by faculty and practitioners engineers from industry.

## **V. METHODOLOGY**

The course takes place as a workshop with intense work by students. Faculty provides advice to each group to assure that the project will be completed as scheduled.

## **VI. GRADING SYSTEM**

The Final Grade (PF) is calculated with the following formula:

$$PF = (PP + FP) / 2$$

PP: Average grade of partial reports

FP: Final report and final presentation

## **VII. BIBLIOGRAPHY**

The bibliography depends on each particular project. Students are encouraged to search for relevant technical information in books, technical papers, and so on.