



**NATIONAL UNIVERSITY OF ENGINEERING  
COLLEGE OF GEOLOGICAL, MINING AND METALLURGICAL  
ENGINEERING**

**GEOLOGICAL ENGINEERING PROGRAM**

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**GE930 – PROJECT MANAGEMENT**

**I. GENERAL INFORMATION**

<b>CODE</b>	: GE930 Project Management
<b>SEMESTER</b>	: 10
<b>CREDITS</b>	: 3
<b>HOURS PER WEEK</b>	: 3 (Theory – Practice)
<b>PREREQUISITES</b>	: GE732 Metallic Mineral Deposits
<b>CONDITION</b>	: Compulsory

**II. COURSE DESCRIPTION**

In the theoretical part of this course, the instructor introduces concepts, tools, techniques, good practices and methods which allow manage the project lifecycle, from its initiation to its termination.

Initiation process, planning, execution, control and closure are explained, applying Project Management Body of Knowledge (PMBOK) guide from the Project management Institute (PMI), this document is a standard in project management and will allow students to develop a good performance in the IT project management and ensures the probabilities of success.

In the workshop sessions, an IT project management plan will be worked out. Additionally, the skill to use Microsoft Project 2013 for the project control, monitoring and planning will be developed.

**III. COURSE OUTCOMES**

1. Acquire a detailed insight of management concepts applied to projects, taking into consideration what is a project, why it is started and what is its function within the organization and the mission in the informatics field.
2. Develop the project management plan, defining the project's scope, the activities to be executed, work out cost and resources estimates.
3. Manage project risks, communications with roles and with stakeholders, and the project team management.
4. Direct and participate in a project team and play roles and follow defined procedures in the project management plan.
5. Carry out a project monitoring directed to its compliance and design the strategies for a proper project execution.
6. Manage the quality of project outcomes.
7. Use Microsoft Project 2007 as a tool for planning, monitoring and controlling the project.

**IV. LEARNING UNITS**

**1. INTRODUCTION – INITIATION OF A PROJECT / 4 HOURS**

What is a project? / Typical reasons for the failure of projects / Critical factors for an IT project success / Project lifecycle / Why do we have to manage projects? / IT projects selection and financing / Identification of key interested parties (Stakeholders) / Identify and structure the customer's requirements / Requirement analysis / Project Charter.

**2. PLANNING – SCOPE MANAGEMENT / 4 HOURS**

Scope planning / Definition of project scope / Activity resources estimate / Establishment of the Work Detailed Structure.

**3. PLANNING – TIME MANAGEMENT / 4 HOURS**

Activities definition / Scheduling of activities / Activity resources estimate / Activity duration estimate / Execution of the project's schedule.

#### **4. PLANNING – COST MANAGEMENT / 8 HOURS**

Resource cost estimate / Types of costs / Calculation of the project's budget / S-curve calculation.

#### **5. PLANNING – RISK MANAGEMENT / 4 HOURS**

Risk management planning / Risk identification / Risk analysis / Monte Carlo simulation / Risk response plan / Risks register.

#### **6. PLANNING – QUALITY MANAGEMENT / 4 HOURS**

Definition of quality standards / Quality assurance / Quality control / Quality tools.

#### **7. PLANNING – ACQUISITION, COMMUNICATION AND HUMAN RESOURCES MANAGEMENT**

Project organization chart / Responsibility Assignment Matrix (RAM) / Roles and responsibilities / Communication matrix / Types of contracts.

#### **8. PLANNING – PROJECT MANAGEMENT PLAN / 4 HOURS**

Importance of the Project Management Plan / Plan changes in the project management / Important considerations for the project plan management / Project baseline / Approval of plan.

#### **9. EXECUTION OF THE PROJECT PLAN / 4 HOURS**

Soft skills of the project manager / Resolution of problems, project team motivation / Project quality audit.

#### **10. PROJECT CONTROL AND MONITORING / 8 HOURS**

Project control / Report of project performance using Earned Value / project quality control / Risk monitoring.

#### **11. PROJECT CLOSURE / 4 HOURS**

Approval of project results / Register learnt lessons.

### **V. WORKSHOP SESSIONS:**

**Workshop 1:** Stakeholders' analysis.

**Workshop 2:** Determination of the project scope and elaborating its WBS / Entering the scope in MS project.

**Workshop 3:** Elaboration of the schedule and budget in MS Project.

**Workshop 4:** Identification, analysis and response to risks / Determination of the project baseline / Monte Carlo simulation using @Risk.

**Workshop 5:** Determination of requirements / Definition of attributes and quality metrics / Elaboration of specifications.

**Workshop 6:** Elaboration of the project organization chart / RAM / Roles and responsibilities / Communication matrix.

**Workshop 7:** Elaboration of a project performance report using the Earned Value in MS Project.

**Workshop 8:** Registration of learnt lessons.

### **VI. METHODOLOGY**

The course is carried out through introductions of concepts, good practices, tools and project management techniques, referring to real cases of IT projects. In workshop sessions, students form work teams to perform the partial deliverables which make up the management plan in a project. Before the midterm and final exam work teams will hand in and expose the management plan of their IT project.

### **VII. EVALUATION FORMULA**

The average grade PF is calculated as follows:

$$PF = (EP+EF+2TLR)/4$$

EP: Mid-Term Exam

EF: Final Exam

TLR: Group Workshop

### **VIII. BIBLIOGRAPHY**

1. **PMBOK**  
Project Management Body of Knowledge  
P.M.I Publications U.S.A, 2015
2. **STEVE MC CONNELL**  
Management and development of IT projects (Spanish)  
Prentice Hall Editorial, 2013