.

PROYECTO FINAL

VISION AND FRAMEWORK

"**FINAL PROJECT CHAIR** faces students to the challenge of performing a work of integration and application of the knowledge that they have acquired during their career with the international framework of project management".

UTN FACULTAD REGIONAL MENDOZA
UNIVERSIDAD TECNOLÓGICA NACIONAL

ELECTRONICS DEPARTMENT

AUTHORITIES

ING. JOSÉ BALACCO
DEAN OF NATIONAL TECHNOLÓGICAL UNIVERSITY
Mendoza Regional Faculty

ING. HUGO MORALES.
DIRECTOR OF ELECTRONICS ENGINEERING CAREER DEPARMENT
NATIONAL TECHNOLÓGICAL UNIVERSITY
Mendoza Regional Faculty

TEACHING STAFF

ING. ANTONIO ALVAREZ ABRIL.
PROFESSOR OF FINAL PROJECT
NATIONAL TECHNOLÓGICAL UNIVERSITY
Mendoza Regional Faculty

ING. NELSON MERINO
PROFESSOR OF FINAL PROJECT
NATIONAL TECHNOLÓGICAL UNIVERSITY
Mendoza Regional Faculty

ING. NÉSTOR MANZUR
PRACTICAL WORK ASSISTANT
NATIONAL TECHNOLÓGICAL UNIVERSITY
Mendoza Regional Faculty

ING. HIGINIO FACCHINI
GENERAL ASSISTANT
NATIONAL TECHNOLÓGICAL UNIVERSITY
Mendoza Regional Faculty

CONCEPTUAL FRAMEWORK OF FINAL PROJECT.

For several decades the engineering careers have incorporated within their curricular structure integrative disciplines which seek to carry out activities of cognitive relational systematization between the contents that the students have been doing in the different chairs of their careers which usually have an average of four to five years in most of the world.

Curricular spaces such as "Final Project, Final Project Report or Final Report of Degree", are a clear example of this trend that seeks students to carry out an engineering project that has a certain level of technical complexity but also incorporates the tools of management

In this context, these types of disciplines should provide the student with two fields of knowledge that are related to each other but which differ in their approach perspectives.

A field of knowledge is related to what we now call "project management".

The other field of action is related to the development of a technological project on which the knowledge of the technology learned by the students in their degree matters will be applied.

The convergence of Project Management (PM) with the Development Technological Project (DTP) is the challenge of integrating design chairs in the last year of engineering careers in most of the world's universities.

Project Final in Engineering Electronics at National Technological University of Argentina-Mendoza , goes through this point of view and this discipline gives to the students an approach to Project Management into the framework of technological products design.

The principal knowledge nuclei of Final Project go through key points in relation to the most important schools of Project Management and the students work on real needs related to research and development projects.

Students do their projects at the Center of Computation and Neuroengineering at Department of Electronics in the National Technological University with the help of professionals and center´s researchers.

THE ROLE OF FINAL PROJECT IN THE CONTEXT OF AN ACADEMIC UNIT OF THE XXI CENTURY.

In the most prestigious Universities of the world, curricular spaces and professors like PROYECTO FINAL fulfill an academic function that is developed in the following lines of action:

1.- Approach the students to the key concepts of Project Management that for several years have evolved in processes of increasing international methodological standardization, pointing to the increasingly frequent work strategies based on development and technological innovation.

2.- Integrate contents, knowledge and skills of the disciplines that students have learned during their career but now focused from the perspective of a project inserted in the multidimensionality and complexity of the real world to be accessed through research, development and innovation. For which project management is essential knowledge.

3.- Within the institutional framework FINAL PROJECT in the most prestigious universities in the world are part of a dynamic R & D & I strategy of the Research, Development and Innovation Centers associated with the respective Degree Course. In this case Electronics Engineering.

4.- From the point of view of the student, the link to this R & D & I Center allows his work not to be lost on a shelf or in a diaspora of "unfinished things", but it can be assumed by new students which come from lower divisions in the career. So the project can endure more than calendar year.

INTERNATIONAL FEATURE

Because of its final-grade nature, Final Project is an ideal discipline to carry out internationalization and exchange of students in engineering education.

For this reason, many lectures and materials are referenced in English and require that important parts of the project documents are written in that language so that students know the key words of project management at the international level.

At present, through the Center for Research and Development in Computing and Neuroengineering, agreements are being made with prestigious universities in the world for students who study this subject and carry out their experiences abroad in order to achieve a better understanding of technology and also other cultures

CLASS	THEME	ACTIVITIES	CAMPUS
1.-	**START** Presentation of the chair. Chair's regulation. What are projects? Project management. Most important development lines in project management. Life cycle of a project.	Lecture Presentation. Descriptive synthesis of differentiation between most important lines of PM, PRINCE2, ISO 21,500, SCRUM, etc.	Compulsory Reading. Presentation video PMBOOK
2.-	Elaboration of preliminary projects. Formats. Processes of a project. Presentation of lines of work in CeRECoN.	Lecture: Preliminary Projects. Study Cases.	Compulsory Readings Formats Analysis.
3.-	**PRELIMINARY PROJECT AND FEASIBILITY STUDY.** Technical feasibility. Economical. Market. Environmental	Lecture: Preliminary Projects. Study Cases.	Compulsory Readings Formats Analysis.
4.-	**ECONOMIC FEASIBILITY OF PROJECTS.** Payback Net Present Value IRR ROI Sensitivity.	Lecture: Preliminary Projects. Study Cases.	Compulsory Readings Formats Analysis.

CLASS	THEME	ACTIVITIES	CAMPUS
5.-	**MANAGEMENT OF STARTING A PROJECT.** Start Processes. Charter Project Documentation.	Lecture and Presentation. Examples of Charter Project	Define the Project Start Act. Formats Analysis. Charter Project Project.
6.-	**REQUIREMENTS AND SCOPE OF A PROJECT** Definition of Scope. Stakeholders negotiations. Scope Traceability Matrix. Scope Framework.	Matrix of Traceability of Requirements. Statement of Scope.	Compulsory Reading Examples of Requirements Traceability Matrix. Formats Analysis.
7.-	**WORK BREAKDOWN STRUCTURE.** Definition of Work Package. Hierarchical criteria. Breakdown levels. MOSCOW Method	WBS and Project WBS. WBS diagram	Compulsory reading. Examples of EDT or WBS. Formats Analysis.
8.-	**PROGRAMMING OF THE PROJECT.** Criteria for sequencing tasks. Dependencies. Attributes. Schedule of milestones. Resource allocation. PDM Method	Lecture. Presentation. Resource allocation. Formats Analysis.	Compulsory reading. 5 Questions. Criteria for sequencing activities. Formats Analysis.

CLASS	THEME	ACTIVITIES	CAMPUS
9.-	**PROGRAMMING OF THE PROJECT.** PERT Method CPM Method	Lecture. Presentation. Case Analysis.	Compulsory reading. Software analysis. CPM Video Synthesis activity in software analysis.
10.-	**PROJECT COST MANAGEMENT**. Estimates by analogy. Parametric estimations. Proposed estimate of third parties. Request for proposal (RFP). Botton-Up Estimate Estimates based on activity. Elaboration of the budget.	Presentation. Lecture. WBS and budget relationship. Budgeting by analogy. Parametric elaboration	Compulsory reading. . RFP estimation Formats Analysis. Video about budgeting and types.
11.-	**PROJECT COST MANAGEMENT.** Flow management. Reserves of contingencies. Evaluation of budget. Earned Value Analysis. Cost of work done and value earned. Presentation.	Presentation. Lecture. Design of the flow or cash flow of the project. Case analysis.	Compulsory reading. Flow design in Software Project.
12.-	**MONITORING AND QUALITY CONTROL.** Control of the execution of the project. Follow-up maps. Quality in the project framework. Definition of the degree of quality. Basic statistics applied to project quality control. Competitive value of quality.	Presentation. International standards. Quality assurance. Follow-up strategies. Quality Charter. Case analysis.	Compulsory reading. Quality control tools. Formats. software Video Quality & Projects.

CLASS	THEME	ACTIVITIES	CAMPUS
13.-	**PROJECT RISK MANAGEMENT.** Organizational and Project Risk. Identification of risks. Methods of risk assessment. Method of the correlations. Risk mitigation techniques. Contingency plan. Project Risk Phases.	Presentation. Risk assessment. Case analysis.	Compulsory Readings Risk assessment instruments. Videos.
14.-	**MANAGEMENT COMMUNICATION PROJECT.** Communication plan. Interested in the project. Methods of communication. Communication requirements. Analysis of technology. Information management. Performance reports. Change reports. Document updates.	Presentation. Communication Plan. Case analysis	Compulsory Readings Methods of communication. Videos.
15.-	**PROJECT CLOSURE MANAGEMENT.** Elements of closing a project. Types of contracts closing. Evaluation of projects. Archives.	Presentation. Learned lessons. Case analysis	Compulsory Readings. Videos

Final Class	**PRESENTATION OF PRE-PROYECTS.**	Presentation. Learned lessons. Case analysis	Compulsory Readings. Videos