

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
SCHOOL OF ENGINEERING
DEPARTAMENT OF CONSTRUCTION ENGINEERING AND MANAGEMENT
ABET COURSE SYLLABI

ICC2204 PROJECT PLANNING AND CONTROL

Credits and contact hours:	10 credits / 10 hours (3 hours in lectures, 7 h. individual work hours per week)
Instructor's name:	Luis Fernando Alarcón
Course coordinator's name	Luis Fernando Alarcón
Textbook:	Serpell, A.; Alarcón, L. (2007) Planificación y control de proyectos. Ediciones Universidad Católica.
Course Catalog Description:	This course aims at professional applications of project planning and control. The course covers a wide range of tools and methods. During the class, the students will conduct a real project field study and different case studies. They will observe the practice of diverse projects and control tools during the course, including computer methods.
Prerequisite Courses:	EYP1113 Probability and Statistics
Co-requisite Courses:	None.
Status in the Curriculum:	Required
Course Learning Outcomes:	<ol style="list-style-type: none">1. Knowing the organization, administration, context and stages in which projects are conducted.2. Knowing the role of engineers in project development.3. Organizing a project administration team.4. Planning engineering projects.5. Planning projects resources.6. Monitoring and control of projects, and applying computer tools for project planning and control.
Relation of Course to ABET Criteria:	<ol style="list-style-type: none">a. Knowledge of mathematics, science and engineering.b. Designing and conducting experiments: to analyze and interpret data.c. Designing a system, component, or process.d. Identifying, formulating, and solving engineering problems.e. Broad education necessary for global, economic, environmental and societal context.f. Techniques, skills, and modern tools for engineering practice.

Topics covered:

1. Project characteristics and development.
 - 1.1. Project planning and administration.
 - 1.2. Historical development.
 - 1.3. The systems concept and project planning and control.
 - 1.4. Planning and control process.
 - 1.5. Planning applications.
2. Definition of the project or task.
 - 2.1. Information and analysis. Work Breakdown Structure. Activities and events.
 - 2.2. Organization of the activities. Estimate of the activities' duration and cost. Plans and programs.
3. Basic planning techniques.
 - 3.1. Bar chart. Logic diagrams and planning.
 - 3.2. Critical path method.
 - 3.3. Precedence method.
 - 3.4. Computer tools.
4. Special techniques: Rhythmic programming. Line of Balance Scheduling. Lineal systems. Probabilistic methods.
5. Resource analysis.
 - 5.1. Feasibility of a plan.
 - 5.2. Resources leveling.
 - 5.3. Scheduling with resource constraints.
6. Planning of financial resources: Budgets. Cash flow analysis.
7. Use of planning techniques: Calendars. Updating the Schedule. Project acceleration. Optimization.
8. Project monitoring and control.
 - 8.1. General methodology.
 - 8.2. The S curve.
 - 8.3. Variance analysis.
 - 8.4. Future plan.
 - 8.5. Corrective actions.
 - 8.6. Information systems.