

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE  
COLLEGE OF ENGINEERING  
DEPARTMENT OF ELECTRICAL ENGINEERING  
ABET COURSE SYLLABI

**ICH2103 ENVIRONMENTAL IMPACT ASSESSMENT WORKSHOP**

- Credits and contact hours:** 10 UC credits /10 hours (3 h. Lectures; 1,5 h. Assistanship and 5,5 h. Independent learning experiences)
- Instructor's name:** Ignacio Toro, Gonzalo Pizarro, Pablo Pastén, Ignacio Vargas, Carlos Bonilla
- Course coordinator's name** Ignacio Toro
- Textbook:** Workshop course. Literature depends on assigned project.  
It relies heavily on the public repository of projects submitted to the national environmental assessment system at [www.sea.gob.cl](http://www.sea.gob.cl)
- Course Catalog Description:** Investment and development initiatives are prone to cause environmental impact assessments, positive and negative. Depending on the specific characteristic of projects they need to be submitted to the environmental impact assessment system (SEIA). The environmental appraisal seeks to identify, quantify, and manage in a systematic way the environmental impacts associated to a project, avoiding, minimizing the negative impacts and enhancing the positive impacts. This workshop considers real or adapted projects from the SEIA system that enable students to practice and integrate educational outcomes from their program courses, build conceptual and quantitative models, and identify technologies to prevent, minimize and mitigate environmental impacts.
- Prerequisite Courses:** 330 CR Approved
- Co-requisite Courses:** None
- Status in the Curriculum:** Required Crr 2013
- Course Learning Outcomes:**
1. Identify and analyze the environmental components that are prone to receive impacts by the different stages of a project life (conception, construction, operation, and abandonment), discriminating which environmental impacts should be further analyzed and the specific legal framework evaluated.
  2. Define and develop conceptual and quantitative models that allow for the objective evaluation of environmental impacts, propose assessment scenarios, propose mitigation measures, define mitigation measures, and monitoring plan following a continuous improvement cycle of the conceptual and quantitative model.
  3. Correct communication of the environmental impacts through written material, visuals (drawings, figures, diagrams, graphs, etc.), oral

presentations, organizing the messages to enhance understanding and decision making involved in the process.

4. Peruse technical and scientific information including sources of environmental quality data, current literature with case studies, conceptual and quantitative modeling, or technologies for environmental control.
5. Gain insight on the Chilean SEIA and their life cycle within the system.
6. Effective teamwork.

**Relation of Course to ABET  
Criteria:**

- a. Knowledge of mathematics, science and engineering
- b. Design and conduct experiments: analyze and interpret data
- c. Design a system, component, or process
- d. Multidisciplinary teams
- e. Identify, formulate, and solve engineering problems
- f. Professional and ethical responsibility
- g. Effective communication
- h. Broad education necessary for global, economic, environmental and societal context
- i. Recognition of the need for, and an ability to engage in life-long learning
- j. Knowledge of contemporary issues
- k. Techniques, skills, and modern tools for engineering practice.

**Topics covered:**

1. Project definition and environmental applicable legal framework
2. Systematic identification and prioritization of environmental impacts.
3. Conceptual and quantitative modeling of key environmental impacts.
4. Definition of control measures for environmental impacts.
5. Definition of monitoring plans.
6. Preparation of technical-economic materials for the environmental appraisal following the format and structure indicated by the SEIA.