PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
SCHOOL OF ENGINERING
DEPARTMENT OF INDUSTRIAL AND SYSTEM ENGINEERING
ABET COURSE SYLLABI

# ICS2122 OPERATIONS RESEARCH PROJECT SEMINAR (Capstone)

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| **Credits and contact hours:** | 10 UC Credits /10 hours (2:40 hours lectures; 1:20 hours recitation and 6 hours individual work hours per week) |
| **Instructor's name:** | To be defined |
| **Course coordinator's name:** | None |
| **Textbook:** | G. Alred, C. Brusaw, W. Oliu, Handbook of Technical Writing, 10a. edición, St. Martin Press, 2011.<br>J.L. Doumont, Trees, Maps and Theorems: Effective communications for rational minds, Principiae, 2009. |
| **Course Catalog Description:** | This course will allow students to do an integration of the knowledge acquired during their Operations Research degree. To achieve this, students will develop a semester long project based on a real industrial situation. In addition, the course will review some case studies that illustrate successful applications of Operations Research in various sectors. |
| **Prerequisite Courses:** | ICC1113 Optimization, ICS2123 Stochastic Models, (ICS2562 Applied Econometrics or EYP2114 Statistical Inference) |
| **Co-requisite Courses:** | None |
| **Status in the Curriculum:** | Required Crr2013 |
| **Course Learning Outcomes:** | 1. To be able to develop Operations Research models to address a real situation.<br>2. To apply analytical and computational methods of optimization, simulation and statistics to the solution of a model and be able to interpret the results.<br>3. To be able to critically discuss the appropriateness of an Operations Research model to a real situation and to use software tools to modeling real problems.<br>4. Be able to present written reports as well as to present results in front of an audience. |

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**Relation of Course to ABET Criteria:**

a. Knowledge of mathematics, science and engineering
b. Design and conduct experiments: analyze and interpret data
d. Multidisciplinary teams
e. Identify, formulate, and solve engineering problems
g. Effective communication
k. Techniques, skills, and modern tools for engineering practice.

**Topics covered:**

I. Introduction: Presentation and course organization
II. Research Methodology and Problem Analysis in Operational Research.
III. Development and construction of technical documents and presentations.
IV. Case Studies in Operational Research
V. Course Project.

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