

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

IIC2513 WEB TECHNOLOGIES AND APPLICATIONS

Credits and contact hours:	10 credits / 10 hours (3 h. lectures; 7 h. Individual learning experience)
Instructor's name:	Jaime Navón Cohen
Course coordinator's name	Jaime Navón Cohen
Textbook:	Ruby, S.; Thomas, D.; Heinemeier Hansson, D. (2013) Agile Web Development with Rails
Course Catalog Description:	This course aims at providing the students the necessary knowledge to understand the technological infrastructure that supports the World Wide Web so they can learn how to design, build and deploy simple web applications.
Prerequisite Courses:	IIC2233 Advanced computer programing
Co-requisite Courses:	None
Status in the Curriculum:	Required
Course Learning Outcomes:	<ol style="list-style-type: none">1. Know and understand the standards (protocols, languages) involved in the WWW2. Understand the architecture of a web site or web application3. Build a simple web site or web application that includes both server and client code4. Deploy a web application into a local server or in the cloud
Relation of Course to ABET Criteria:	<ol style="list-style-type: none">c. Design a system, component, or processe. Identify, formulate, and solve engineering problemsf. Professional and ethical responsibilityi. Recognition of the need for, and an ability to engage in life-long learningj. Knowledge of contemporary issuesk. Techniques, skills, and modern tools for engineering practice.

Topics covered:

1. Introduction
 - 1.1. The WWW: past, present and future
 - 1.2. The Web as a development platform
 - 1.3. The architecture of a Web application (MVC)
 - 1.4. Languages and frameworks
2. Ruby and Rails
 - 2.1. A first view to the Rails framework
 - 2.2. The Ruby programming language
 - 2.3. Presentation of the running (example) application
3. Components of the Web Application
 - 3.1. Protocol HTTP
 - 3.2. Views and controllers
 - 3.3. HTML, XML, JSON, CSS
 - 3.4. The Model
 - 3.5. Class, tables and migrations
4. A web of APIs
 - 4.1. Introduction to Web Services
 - 4.2. REST APIS and Restful APIS
 - 4.3. Design of a Restful API
5. Rich Internet Client
 - 5.1. JavaScript and the DOM
 - 5.2. JQuery
 - 5.3. AJAX
 - 5.4. HTML5 new APIs
6. Advanced Topics
 - 6.1. Security considerations (HTTPs, SSL, SET)
 - 6.2. Performance considerations