INFORMATION SYSTEMS IMPLEMENTATION AND ARCHITECTURE

- **Course code**

  8129

- **Type of course (compulsory, optional)**

  Compulsory

- **Level of course**

  First Cycle

- **Year of study**

  2013-2014

- **Semester**

  5th Semester

- **Number of credits allocated**

  6 ECTS Credits

  Name of lecturer
  Pramatari Katerina, Assistant Professor

- **Description**

  The aim of this course is to provide students with a complete view of information systems development, in general, and web applications in particular, as well as the technologies used in this context and the applications that can be supported. During the course, practical and theoretical subjects will be covered concerning software design, architectural design, development and control, contemporary software development environments, tools and Internet technologies. Emphasis will be placed on layered architecture design, application design, implementation and testing. At the same time, this course aims to complement and exploit the knowledge students have already acquired in previous courses, such as databases, systems analysis and design, programming etc., in order to support the design and development of a full functional web-site, which constitutes the practical part of the course.

- **Learning outcomes – objectives**

  By attending this course, students are expected to:

  - Acquire a theoretical and practical background of application architecture and design with emphasis on web applications
  - Learn how to design, develop, and test fully functional applications from scratch
  - Acquire knowledge regarding web programming and Internet technologies
  - Get a contemporary view of software applications development and web technologies
  - Comprehend information systems architectures and impact on managerial decisions

- **Mode of delivery (face-to-face, distance learning)**

  Face-to-face

- **Prerequisites and co-requisites**

  Databases

  Systems analysis and design

  Programming

  Networks

- **Recommended optional programme components**

- **Course contents**

  In the detailed program that follows there is a description of the units which will be covered during the lectures.

  Introduction in Basic Terms
  - Lecture 1: Framework, infrastructure and course aims
  - Lecture 2: Web Application Architecture

  High Level System Design
  - Lecture 3-4: Systems' architectures
  - Lecture 5: Indicative applications- examples

  Detailed System Design
  - Lecture 6-7: System design: classes and methods
  - Lecture 8-9: System design: data model
  - Lecture 10-11: System design: human-computer interaction
  - Lecture 12-13: Physical architecture design
  - Lecture 14-15: Indicative applications- example

  Implementation and Testing
  - Lecture 16: Application development environments
  - Lecture 17: System testing
  - Lecture 18: System installation and other functions

  Web Application Frameworks and Technologies
  - Lecture 19: Web Applications' Typical characteristics
  - Lecture 20: MVC Frameworks
  - Lecture 21: Javascript-Ajax

Tutorials' Schedule
- Lecture 1: Servlets- Basic Terms
- Lecture 2: Servlets- Dealing with customers requirements- Form's Data
- Lecture 3: Servlets examples
- Lecture 4: Servlets- interconnection with Data Base
- Lecture 5: Servlets – Errors control
- Lecture 6: Servlets- Session
- Lecture 7: Examples
- Lectures 8-10: JSP

- **Recommended or required reading**

📖 System's Analysis and Design with UML, 3rd American Edition Alan Dennis, Indiana University Barbara Haley Wixom, University of Virginia, Mclntyre School of Business David Tegarden, Virginia Tech ISBN: 978-0-470-07478-8 (American edition), 978-960-461-389-2 (Greek edition) - The chapters that concern this course are chapters 8-14.

📖 Marty Hall, Larry Brown " Core Servlets and Javaserver Pages".

- **Planned learning activities and teaching methods**

Tutorials

- Course tutorials will focus on programming/ web site development using Java and JSP

Laboratory exercises and exams

- Students will have to complete individual lab exercises and pass an individual lab examination

Compalsory group project

- The students in groups will have to conduct a compulsory project dealing with the design and development of a full functional dynamic web site.

- **Assessment methods and criteria**

The final grade of each student is based on 3 criteria:

1. On his/her performance in the project (30%)
2. On his/her performance in the lab exams (20%)
3. On the final written examination (50%)

Prerequisite for a student to pass the course is his performance in all of the three criteria (project, lab exams, and final written exam) to be at least at the base line (grade 5 out of 10).

- **Language of instruction**

Greek

- **Work placement(s)**