

Global Learning Semesters

Course Syllabus

Course: COMP-615 Internet Technologies

Department: Computer Science

Host Institution: University of Nicosia, Nicosia, Cyprus



| Course Summary | | |
|-------------------|-----------------------|---|
| Course Code | Course Title | Recommended Credit Hours |
| COMP-615 | Internet Technologies | 4 |
| Semester Offered | Contact Hours | Prerequisites |
| Please contact us | 42-45 | Students are expected to have undergraduate-level knowledge of object-oriented programming, Data Modeling Concepts, Data Base Management Systems, Internet Technologies, Internet Protocols, standards and services. Referring to the Computer Science undergraduate-level courses offered at Intercollege, the students are expected to have covered the syllabus of the following: COMP-512 Data Modeling and Database, COMP-515 Computer Networks and Operating Systems, COMP-517 Object-Oriented Software Design and Development. |
| Department | Level of Course | Language of Instruction |
| Computer Science | Upper Division | English |

Course Description

This course aims to allow students to reveal an understanding of and demonstrate familiarity with the operation of Internet application software; to design and implement reliable and robust client/server and distributed applications according to specification; to configure, utilize and manage web-based applications suites; to utilize software development and other tools in carrying out development tasks; to relate the role played by web-based information management and processing to the wider activities of the organization; to relate the activities of the IT industry to the expectations of the society.

Prerequisites

Students are expected to have undergraduate-level knowledge of object-oriented programming, Data Modeling Concepts, Data Base Management Systems, Internet Technologies, Internet Protocols, standards and services. Referring to the Computer Science undergraduate-level courses offered at Intercollege, the students are expected to have covered the syllabus of the following: COMP-512 Data Modeling and Database, COMP-515 Computer Networks and Operating Systems, COMP-517 Object-Oriented Software Design and Development.

Topic Areas

1. Introduction to the Languages and Technologies available for the creation of Internet based applications. Internet Structure. WEB servers and clients. WWW caching. Performance of Internet Services, usability and scalability. Security.
2. Detailed examination of client/server and distributed computing. HTTP Protocol. Mark-up languages and programming tools. Client side scripting: Java and Jscript, Java Applets, ActiveX. Server side scripting: Java Servlets, Perl, PHP, ASP, ASP.NET.

3. Data Management and Organization. Databases on the WEB: CGI, JDBC. Client side caching: XML documents. XML documents manipulation. SOAP and WEB services. Custom Markup Languages: WML, XBRL, SMIL.
4. Client site scripting: Analysis of limitations of the current technology based on HTML, DHTML, XML and scripting languages. Concept of "content language". Internet 2 Specifications. Curl as the first commercial implementation of Internet 2 specs.
5. Design and implementation of an Internet based client/server and distributed application.
6. Review and analysis of state-of-the-art Internet technologies.

Course Assessment

Students will be assessed through a series of weekly assignments, project work, a midterm and a final exam. The percentages contributing to the final grade are as follows:

| | |
|---------------------|-----|
| Weekly Assignments: | 5% |
| Project Work: | 20% |
| Midterm Exam: | 25% |
| Final Exam: | 50% |

Description of course assessment:

Weekly assignments: These will consist of non-programming questions/exercises based on the material covered during that week.

Project work: It will be a term project which involves development of small web based data driven applications like:
WEB-based authentication system;
WEB-based phone directory;
WEB-based, etc.

Midterm exam: It will contain the material covered up to the time of the midterm.

Final Examination: This examination will be comprehensive and it will include all the material covered throughout the semester.

Readings and Resources

Required Textbook

- Gordon M., Joly J., Kranz D., Maharry D., Metzger P., Ullman C., "Early Adopter Curl". Wrox Press, Inc., 2001 ISBN 1861005970.
- Ince, D and Freeman, A. Programming the Internet with Java, Addison Wesley, 1999, ISBN: 0-201039844-3.
- Low, D, and Hall, W. Hypermedia & the Web, John Wiley, 1999.
- Hughes, M. et al Java Network Programming, Prentice Hall, 1997.
- McLaughlin, B. and Loukides, M. Java and XML, O'Reilly Associates, 2000, ISBN: 0596000162.