Course Unit Title	Internet Technologies		
Course Unit Code	ACSC476		
Type of course unit:	Elective		
Level of course unit:	Bachelor (1st Cycle)		
Year of study:	3/4		
Semester when the unit is delivered:	5/7 (Fall)		
Number of ECTS credits allocated	6		
Learning Outcomes of the course unit	By the end of the course, the students should be able to: 1. Describe and explain how the main application-layer protocols (for web, email, etc) operate and discuss their actual usage in the Internet. 2. Design and construct high-quality static web pages using XHTML and CSS. 3. Evaluate the differences between client-side and server-side programming, be familiar with the dominant programming languages that support each type, and argue on the efficiency/effectiveness of each on various scenarios. 4. Develop client-side web programs employing technologies such as JavaScript and employ commonly used libraries such as JQuery. 5. Construct elementary server-side components to process HTTP requests in PHP. 6. Discuss the impact of XML technologies in the development of the web and evaluate and critique the emergence of the Semantic Web. Appreciate the impact of various emerging technologies in the Internet domain (e.g. HTML5, web services).		
Mode of Delivery	Face-to-face		
Prerequisites	AMDM100, AMDM182	Co-requisites	NONE
Recommended optional program components	NONE		
Course Contents	**Part 1: Review of Networking Essentials:** Networking Layers and the TCP/IP stack. Sockets. Common Internet applications and their protocols. Understanding HTTP, SMTP, POP3 and other dominant protocols. Elementary socket programming. Packet analysing. **Part 2: Web Content Development:** Syntax of XHTML, Basics of web page construction. Web page presentation and web browsers. Page Styling. Advanced Design features with CCS3. Principles of web design, design and usability issues. HTML5. **Part 3: Programmatic Support in Web Applications:** Client-side versus server-side programming. Client-side technologies. The DOM structure. The JavaScript language and client-side applications. Elementary server-side programming. PHP code. Basics of server-side data management (variable visibility, containers). Cookies and session tracking. **Part 4: XML Documents and the future of the Web (2 weeks):** The XML meta-language. XML languages and documents. Well-formed and valid documents. XML language definition (DTD, XSD). Impact of XML on Internet development. The receding of XML today and the emergence of alternative approaches. JSON documents. Introduction to the Semantic Web and Web 2.0.		
Recommended and/or required reading:			
Textbooks	• No specific textbook is followed		

References	• Kurose J, Ross K; Computer Networking: A top down approach. Addison Wesley.
	• Deitel, Internet & World Wide Web, How to Program, Pearson Education.
	• Bowers M, Pro CSS and HTML Design Patterns, O'Reilly.
	• Crockford D JavaScript: The Good Parts, O'Reilly.
Planned learning activities and teaching methods	The course is taught in a traditional manner of lectures (2 hours per week) backed up with laboratory sessions (2 hpw). Lectures consist of presentations of new material and discussion of new concepts. Laboratory work mainly consists of demonstrations and programming exercises to gain practical skills.
	The course material (notes, exercises, forum, etc) is maintained on the university's e-learning platform.
Assessment methods and criteria	Assignments 15% Test 10% Lab work 15% Final Exam 60%
Language of instruction	English
Work placement(s)	NO