

MODULE: **WEB DEVELOPMENT**

CODE: **BSCH-2-2-10**

Stage: **II**

Credit Points: 4 semester credits / 6 quarter units

Overview and Aims

This module gives you the opportunity to put into practice the design principles and techniques that you have learned so far, on the scale of a realistic project to develop an internet-based software application.

You will design a dynamic website coupled to a database backend. The website will be designed for a real client (possibly from outside the college) with whom you will have to work on developing a clear, accurate, specification, and for whom you will have to implement and test the system.

You'll see how the elements of computing that you have studied in separate modules are really intertwined and complement each other. What's more you'll learn how to work in a group setting, with other students, each of you taking the responsibility for a major part of the work. From a technology perspective, by the time you complete this module, you'll understand HTTP, HTML, SQL, mobile browsers on telephones, VoiceXML, data modelling, page flow and interaction design, server-side scripting, and usability analysis.

Upon successful completion of this module, you should be able to:

- 1 take vague specifications and turn them into a system design that can be built and launched within a few months
- 2 build a state-based user experience on top of stateless protocols

- 3 develop an object-oriented distributed system where each object is a Web service
 - 4 test prototypes with end-users and refine your application design once or twice within even a three-month project
 - 5 cope with the challenge of short development time via automatic code generation and use of open-source toolkits where appropriate.
- demonstrate an understanding of the ethical issues in web development

Module Content

Introduction and motivation

How the project is organised. Identification of groups. Deadlines and deliverables.

Stages, issues, techniques

Planning.

Software structuring and modularity.

User registration and management. User classes.

Content management. Discussion forums. Search.

HTTP, XML, SOAP, and WSDL.

Usage scenarios. User activity analysis.

Designing tables. Normalization. Metadata

Scaling gracefully. Replanning on the basis of development experience.

Automatic program generation.

Mobile users. Voice (VoiceXML).

Documentation

Professionalism. Writing a report. Making a presentation.

Ethical issues

Privacy / Anonymity on the web

Intellectual property rights on the web

Equal access opportunities