

# Informatics

The aim of this module is to provide a unified understanding of the role of information systems and semantic web technology in coordinating information exchange. Coverage includes information modelling for open systems (including the Web), information querying and transformation and quality assurance, and informatics for application domains (including health informatics, bioinformatics, geoinformatics and business informatics).

School	COMSC
Module Code	CM2203
External Subject Code	G500
Number of Credits	10
Level	2
Module Leader	Dr Irena Spasic
Module offered on a free-standing basis?	No
Any restrictions to free-standing basis?	
Maximum Number on Module	150
Language of module delivery	English

## On completion of the module a student will be able to:

1. Develop an understanding of how information is captured, shared and exploited in organisations
2. Analyse and critically evaluate existing definitions techniques for querying, transforming and assuring quality of information
3. Relate knowledge to individual application domains such as health informatics, bioinformatics, geoinformatics and business informatics

## How the module will be delivered

16 lectures supplemented by 6 seminars and 10 tutorial/lab classes

## Skills that will be practised and developed

- Able to create information models for information capture, sharing and reuse
- Able to use information query, transformation and quality assurance tools
- Able to choose approaches appropriate to particular domains (e.g. health informatics, bioinformatics, geoinformatics, business informatics)

## How the module will be assessed

Assessments are listed below indicating relation to learning outcome. No academic or competence standards limit the availability of adjustments or alternative assessments for disabled students.

Type of assessment	% Contribution	Title	Learning Outcomes	Approx. date of Assessment
Coursework	30	Case study in a selected application domain	3	9
Examination (2 hours)	70	Examination	1, 2, 3	Spring Exam Weeks

## The potential for reassessment in this module

Reassessment will take the form of examination during the summer period.

## Syllabus content

Information modelling for open systems

- XML
- Semantic data models
- Ontologies, taxonomies and folksonomies

Information querying, transformation and workflow

- Web information architecture (data linking)
- Queries, rules, stylesheets for information transformation and publishing
- Information-driven workflow, including information assurance and security policies

Informatics for application domains

- Health Informatics: The design and implementation of healthcare information systems
- Bioinformatics: Theoretical and practical issues in the application of informatics to biology
- Geoinformatics: Introduction to the functionality, architecture and applications of Geographical Information Systems
- Business informatics: Introduction to design and management of complex information infrastructures in business organisations.

## Indicative Reading and Resource List:

Moller A, Schwartzbach M (2006) *An Introduction to XML and Web Technologies*. Addison Wesley

Salam AF, Stevens JR (2006) *Semantic Web Technologies and Ebusiness: Toward the Integrated Virtual Organization and Business Process Automation*. IGI Publishing