1. **Title of the module**

COMP5440 (CO544) - Networking

1. **Division or partner institution which will be responsible for management of the module**

Division of Computing, Engineering, Mathematical Sciences (CEMS)

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 5

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn or Spring

1. **Prerequisite and co-requisite modules**

Pre-requisite: COMP3200: Introduction to Object-Oriented Programming

Or COMP5420 Fundamentals of Information Technology and Computing

1. **The course(s) of study to which the module contributes**

BSc (Hons) Computing

BSc (Hons) Information Technology (Consultancy)

BSc Business Information Technology

BSc Computer Science (Health)

plus Year-in-Industry variants of these courses.

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1 Have a comprehensive and systematic understanding of current network architectures and their individual protocol layers. [A1, A3]

8.2 Be able to understand the specification of network protocols . [A2, A3, B5, C1, C3]

8.3 Be aware of performance issues in general terms, and of the trade-offs involved. [A3, C2]

8.4 Have a deeper understanding of selected key topics at the forefront of this field, including recent developments and outstanding issues. [A3]

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**

9.1 Be able to analyse a problem specification and to design and implement a solution. [B5, C1]

9.2 Be able to evaluate systems in terms of function and performance, with an awareness of possible trade-offs. [C2]

9.3 Be able to communicate technical issues clearly to specialist audiences. [D2]

9.4 Be able to make effective use of IT facilities. [D3]

9.5 Be able to manage their own learning and time. [D5]

1. **A synopsis of the curriculum**

Packet data networks, overview of general equipment and function (e.g. hubs, switches, routers). Large network architecture (e.g. the Internet).

The OSI Seven layer model and packet encapsulation.

An understanding and appreciation for physical issues (such as cabling and wireless mediums, bandwidth, interference, etc).

Data-link layer issues (e.g. IEEE 802.3, IEEE 802.11, collisions, retransmissions, error recovery)

Network layer issues covering underlying protocols (e.g. IPv4/IPv6) and routing protocols (e.g. RIP/OSPF/AODV)

Transport layer issues and protocols (e.g. TCP/UDP)

Session layer issues and protocols (e.g. TCP).

Presentation layer overview

Application layer protocols (e.g. DNS, HTTP, FTP, SMTP/POP3)

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

"Business Data Networks and Telecommunications" Raymond R. Panko. ISBN 0135009391.

“Computer Networking: a top-down approach featuring the Internet” James Kurose and Keith Ross Addison-Wesley

"Computer Networks" Andrew S. Tanenbaum. Prentice Hall.

1. **Learning and teaching methods**

Total contact hours: 22

Private study hours: 128

Total study hours: 150

1. **Assessment methods**
   1. Main assessment methods

Coursework 1 (25 hours) (25%)

Coursework 2 (25 hours) (25%)

2 hour unseen written examination (50%)

13.2 Reassessment methods

Like for like.

1. **Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** |  | *8.1* | *8.2* | *8.3* | *8.4* | *9.1* | *9.2* | *9.3* | *9.4* | *9.5* |  |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |  |
| **Private Study** |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |
| **Lectures** |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |  |
| **Examination** |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |
| **Coursework** |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |

1. **Inclusive module design**

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

The topics addressed by this module relate to a field which is of international importance, given the global role of computers in today's technological innovation. The topics covered by this module are international in nature, being identical worldwide and independent of traditional spoken language. The School recognises and has embedded the expectations of current state of the art for all aspects of the Networking related material worldwide.

**DIVISIONAL USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 23/11/2020 | Minor | September 2021 | 16 | No |
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