1. **Title of the module**

EENG8220 (EL822) - Data Networks and the Internet

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

Engineering and Digital Arts

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

Level 7

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

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

None

1. **The programmes of study to which the module contributes**

MSc Advanced Communications Engineering

MSc Advanced Digital Systems Engineering

MSc Advanced Electronic Systems Engineering

MEng Electronic and Communications Engineering (incl. with Year in Industry)

MEng Computer Systems Engineering (incl. with Year in Industry)

1. **The intended subject specific learning outcomes.
On successfully completing the module students will be able to:**
2. Understand the theory behind the protocols used in modern communication networks.
3. Understand the operation of the most common modern protocols.
4. Examine network performance through analytical methods and computer simulation.
5. **The intended generic learning outcomes.
On successfully completing the module students will be able to:**
6. Demonstrate skill in generating, analysing, presenting and interpreting data.
7. Use ICT effectively.
8. Use and develop further core key skills, such as learning effectively, critical thinking and time management.
9. Present solutions at examples classes, contributing to the skill of effective communication.
10. **A synopsis of the curriculum**

Local area networks: Ethernet technologies and standards; switched Ethernet and STP; virtual LANs; wireless LANs and WiFi. Personal area network technologies and standards for the Internet of Things: Bluetooth, ZigBee, LoWPAN.

IP Networks: IPv4 and IPv6 addressing, operation; routing protocols; Mobile IP; transport layer (TCP/UDP) and application layer protocols, including real-time protocols.

Network security and encryption mechanisms: IPSec and other security protocols. Network performance analysis, queuing theory, and network simulation.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**
* Tanenbaum, Wetherall, Computer Networks, 5/e, 2013, Pearson
* Kurose, Ross, Computer Networking A top-down approach, 6/e, 2012, Pearson
1. **Learning and teaching methods**

Total contact hours: 47

Private study hours: 103

Total study hours: 150

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

Coursework (15%)

Examination (85%)

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* | *9.1* | *9.2* | *9.3* | *9.4* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |
| **Private Study** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| *Lectures* | **X** | **X** |  | **X** | **X** | **X** |  |
| *Examples* | **X** | **X** |  | **X** | **X** | **X** | **X** |
| *Laboratories* |  |  | **X** | **X** | **X** | **X** |  |
| **Assessment method** |  |  |  |  |  |  |  |
| *Examination* | **X** | **X** | **X** | **X** |  | **X** | **X** |
| *Written assignment* |  |  | **X** | **X** | **X** | **X** |  |

1. **Inclusive module design**

The School 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**

Students are made aware of internationally developed and specified networking standards, and requirements for global data interconnection.

**FACULTIES SUPPORT OFFICE 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 the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
|  |  |  |  |  |
|  |  |  |  |  |

Revised FSO Jan 2018