***Department of Computer Science and Software Engineering***

**MODULE HANDBOOK**

***CSE205***

***Introduction to Networking***

## Charles Fleming

## Semester Fall

**2016/2017**

**SECTION A: Basic Information**

* **Brief Introduction to the Module**

To introduce networked computer systems in general, and the Internet in particular: the basic principles that govern their operation, the design and organisation principles of successful computer networks, and the key protocols and technologies that are used in the contemporary Internet.

* **Key Module Information**

Module name: *Introduction to Networking*

Module code: *CSE205*

Credit value: *5*

Semester in which the module is taught: *Fall*

Pre-requisites needed for the module: *Introductory Programming*

Programmes on which the module is shared: *CST, ICS, DMT*

* **Delivery Schedule**

*(Description of time & venue required if format below does not suit.)*

Lecture room: *SD254*

Lecture time: *Monday 1-3pm*

Tutorial times: *Tuesday 2-4pm*

* **Module Leader and Contact Details**

Name: *Charles Fleming*

Email address: *Charles.fleming@xjtlu.edu.cn*

Office telephone number: *8816-1515*

Room number and office hours: *SD451*

Preferred means of contact: *e-mail*

* **Additional Teaching Staff and Contact Details**

*Dacheng Jiang dacheng.jiang@xjtlu.edu.cn*

**SECTION B: What you can expect from the module**

* **Educational Aims of the Module**

To introduce networked computer systems in general, and the Internet in particular: the basic principles that govern their operation, the design and organisation principles of successful computer networks, and the key protocols and technologies that are used in the contemporary Internet.

* **Learning Outcomes**

[A] Calculate basic network performance statistics (e.g. average throughput), given network configuration and parameters.  
[B] Apply standard network algorithms such as (e.g. Distance vector, ARP discovery, virtual circuit setup) to specific problems and demonstrate both intermediate and final states.  
[C] Analyze and implement simple versions of standard network protocols.  
[D] Given a set of desired network parameters, design new protocols which address the specific goals of that network  
[E] Select and use existing network security protocols for a given problem

* **Assessment Details**

1. *In class test 15%*
2. *Tutorial project 15%*
   1. *This project will be completed in stages as part of the tutorial sessions. Each component may be turned in up to five days after the tutorial session it is assigned, but only if the student attends the tutorial.*
3. *Programming projects 10% and 15%*
   1. *These projects will involve implementing network protocols at different layers. The exact nature of the projects will be announced in class and on ICE*
4. *Final exam 45%*

* **Methods of Learning and Teaching**

Students will be expected to attend two hours of formal lectures as well as to participate in two hours of practicals in a computer lab in a typical week. Lectures will introduce students to the academic content and practical skills which are the subject of the module, while computer practicals will allow students to practice those skills.  
In addition, students will be expected to devote six hours of unsupervised time to solving continuous assessment tasks and private study. Private study will provide time for reflection and consideration of lecture material and background reading.  
Continuous assessment will be used to test to what extent practical skills have been learnt.

* **Syllabus & Teaching Plan**

Lecture 1: the theoretical basis for data communication The OSI seven layer model   
Lectures 2-3: the presentation & application layers, including DNS, email, WWW, and multimedia protocols  
Lectures 4-5: the transport layer - including the TCP & UDP protocols   
Lectures 6-7: the network layer, including routing and congestion handling, quality of service  
Lectures 8-9: the data link layer, including error correction, and the medium access sublayer  
Lecture 10: the physical layer (physical communications media)   
Lectures 11-12: network security issues, including public key encryption, cryptography, authentication & repudiation   
Lecture 13: Revision

* **Tutorial Schedule**

Tuesday 2-4pm

* **Reading Materials**

Required (Essential) Textbook:

COMPUTER NETWORKING: A TOPDOWN APPROACH, J. F. KUROSE AND K. W. ROSS

##### SECTION C: Further Information

* **Student Feedback**

The University is keen to require student feedback to make improvements for each module in every session. It is University policy that the preferred way of achieving this is by means of an Online Module Evaluation Questionnaire Survey. Students will be invited to complete the questionnaire survey for this module at the end of the semester.

**You are strongly suggested to read policies mentioned below very carefully, which will help you better perform in your academic studies. All the policies and regulations related to your academic study can be found in Student Academic Services section under the heading “Policies and Regulations*”* on** [**E-bridge**](https://ebridge.xjtlu.edu.cn/urd/sits.urd/run/siw_lgn)**.**

* **Plagiarism, Cheating, and Fabrication of Data.**

Offences of this type can result in attendance at a University-level committee and penalties being imposed. You need to be familiar with the rules. Please see the “Policy for Dealing with Plagiarism, Collusion and Data Fabrication” document available on e-Bridge in the Student Academic Services section under the heading ‘Policies and Regulations’.

#### Rules of submission for assessed coursework

The University has detailed rules and procedures governing the submission of assessed coursework. You need to be familiar with them. Details can be found in the “Code of Practice for Assessment” document available on e-Bridge in the Student Academic Services section under the heading ‘Policies and Regulations’.

#### Late Submission of Assessed Coursework

The University attaches penalties to the late submission of assessed coursework. You need to be familiar with the University’s rules. Details can be found in the “Code of Practice for Assessment” document available on e-Bridge in the Student Academic Services section under the heading ‘Policies and Regulations’.

#### Mitigating Circumstances

The University is able to take into account mitigating circumstances such as illness or personal circumstances which may have adversely affected student performance on a module. It is the student’s responsibility to keep their Academic Adviser, Programme Director or Head of Department informed of illness and other factors affecting their progress during the year and especially during the examination period. Students who believe that their performance on an examination or assessed coursework may have been impaired by illness, or other exceptional circumstances should follow the procedures set out in the Mitigating Circumstances Policy, which can be found on e-Bridge in the Student Academic Services section under the heading ‘Policies and Regulations’.

* **ICE**

Copies of lecture notes and other materials are available electronically through ICE, the University’s virtual learning environment at: [ICE @ XJTLU](http://ice.xjtlu.edu.cn/).