The current and official versions of the course specifications are available on the web at http://www.usq.edu.au/coursedocumentation/current.
Please consult the web for updates that may occur during the year.

**Description: Network Fundamentals and Routing**

<table>
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<th>Subject</th>
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**Academic group:** FOSCI  
**Academic org:** FOS003  
**Student contribution band:** 2  
**ASCED code:** 020113

**STAFFING**

Examiner: Zhongwei Zhang  
Moderator: Yan Li

**RATIONALE**

Explosive growth in computer networks in the last several decades has changed the uses of computers dramatically. The largest computer network, the Internet, is now connecting millions of computers in the world, providing services like email, file transfer, hypermedia information retrieval across all kinds of different platforms. This course is the introductory course in computer networking. It concentrates on basic concepts and protocols of computer networks. This course serves as a foundation for all further courses in the computer networking program.

**SYNOPSIS**

This course addresses the layered structure of computer communication networks. It focuses on networking basics, routers and routing basics and the most widely used TCP/IP protocol suite. After this course, the students will have not only general knowledge about computer networks but also the understanding and practical skills of cabling and managing routers and TCP/IP Internetworking.

**OBJECTIVES**

On successful completion of this course students will be able to:

1. demonstrate an understanding of networking basics (Assignment 1 and exam);
2. describe and explain the nature and roles of protocols and services at the application, network, data link and physical layers using OSI and TCP reference models (Assignment 1 and exam);
3. demonstrate an understanding of Ethernet fundamentals (Assignment 1 and exam);
4. illustrate TCP/IP protocol suite and subnetting (Assignment 1 & 2 and exam);
5. manage and configure Cisco routers (Assignment 2 and exam);
6. explain routing and routing protocols (Assignment 2 and exam).
### TOPICS

<table>
<thead>
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<tr>
<td>1. Network terminologies, protocols and standards</td>
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<tr>
<td>2. Roles and functionalities of network layers in OSI and TCP layered models</td>
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<td>3. IP Addressing and Subnetting</td>
<td>15.00</td>
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<td>4. Ethernet</td>
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<td>5. Routers and Router Programming</td>
<td>10.00</td>
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<tr>
<td>6. Routing and Routing Protocols</td>
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### TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at http://bookshop.usq.edu.au click 'Semester', then enter your 'Course Code' (no spaces).


### REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

*Network Fundamentals, CCNA Exploration Labs and Study Guide*,

STUDENT WORKLOAD REQUIREMENTS

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<thead>
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<th>ACTIVITY</th>
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<td>Examinations</td>
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ASSESSMENT DETAILS

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<td>ASSIGNMENT 2</td>
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<td>ASSIGNMENT 3</td>
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<td>ASSIGNMENT 4</td>
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NOTES

1. Due date 8am AEST, Monday of Week 3
2. Due date 8am AEST, Monday of Week 6
3. Due date 8am AEST, Monday of Week 8
4. Due date 8am AEST, Friday of Week 11
5. Examination dates will be available during the semester.

IMPORTANT ASSESSMENT INFORMATION

1. Attendance requirements:
   There are no attendance requirements for this course. However, it is the students’ responsibility to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.

2. Requirements for students to complete each assessment item satisfactorily:
   To complete each of the assessment items satisfactorily, students must obtain at least 50% of the marks available for each assessment item.

3. Penalties for late submission of required work:
   Feedback may be significantly delayed for late submissions. If students submit assignments after the due date without (prior) approval of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted.

4. Requirements for student to be awarded a passing grade in the course:
   To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.

6 Examination information:
In a Restricted Examination, candidates are allowed to bring writing and drawing instruments, non-programmable calculators and unmarked, paper-based translation dictionaries.

7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the examination period at the end of the semester of the next offering of this course.

8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL http://www.usq.edu.au/corporateservices/calendar/part5.htm or in the current USQ Handbook.

ASSSESSMENT NOTES

9 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner.

10 In accordance with University policy, the Examiner may grant an extension of the due date of an assignment in extenuating circumstances.

11 The Faculty will NOT accept submission of assignments by facsimile.

12 In the event that a due date for an assignment falls on a local public holiday in their areas, such as a Show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the Examiner's convenience.

13 Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non directed personal study.

OTHER REQUIREMENTS

1 Students will require access to e-mail and the Internet.