



**MONASH** University  
Information Technology

**FIT5010**  
**Advanced internet protocols and applications**

**Unit Guide**

**Semester 2, 2012**

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

*Last updated: 05 Jul 2012*

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# **FIT5010 Advanced internet protocols and applications - Semester 2, 2012**

In-depth coverage of the protocols used to operate the Internet and intranets, and a selection of major applications, including specific implementations of the protocols and systems. The topics include: Advanced Internet Addressing: IPv6, subnetting, supernetting. TCP Performance and Enhancements: Reno, New-Reno, Fast Retransmit and Recovery, etc. Unicast and multicast routing protocols: BGP4, OSPF, MOSPF, DVMRP, etc. Messaging systems: SMTP, MIME, POP3, IMAP, World Wide Web systems: client-server implementations, HTTP, Real Time Protocols: RTP, RTCP,RSVP. Security and Firewall. Quality of Service issues: DiffServ and IntServ. Network management and Remote File activities.

## **Mode of Delivery**

Caulfield (Day)

## **Contact Hours**

2 hrs lectures/wk, 2 hrs tutorials/wk

## **Workload**

For on-campus students, workload commitments are:

- Lectures: 2 hours per week
- Tutorials/Lab Sessions: 2 hours per week per tutorial which requires advanced preparation

and up to an additional 8 hours in some weeks for completing lab and project work, private study and revision.

## **Unit Relationships**

### **Prohibitions**

CSE5803

### **Chief Examiner**

Professor Balasubramaniam Srinivasan

### **Campus Lecturer**

### **Caulfield**

**Bala Srinivasan**

## **Tutors**

### **Caulfield**

**Guy Kijthaweesinpoon**

# Academic Overview

## Outcomes

At the completion of this unit students will:

- have a well-developed conceptual framework, enabling them to keep pace with developments in the rapidly changing field of network computing;
- have a thorough understanding of one or more specialised areas of study within network computing;
- be familiar with using current technology, systems and software relevant to network computing;
- be able to practise professionally as a network computing specialist.

## Graduate Attributes

Monash prepares its graduates to be:

1. responsible and effective global citizens who:

- a. engage in an internationalised world
- b. exhibit cross-cultural competence
- c. demonstrate ethical values

critical and creative scholars who:

- a. produce innovative solutions to problems
- b. apply research skills to a range of challenges
- c. communicate perceptively and effectively

## Assessment Summary

Examination: 50%; In-semester assessment: 50%

<b>Assessment Task</b>	<b>Value</b>	<b>Due Date</b>
Mid-semester Test	25%	Week 9 tutorial
Research Topic (Report and Presentation)	25%	Report due Week 8; Presentation in Week 10, 11 or 12 lecture (to be scheduled)
Examination 1	50%	To be advised

## Teaching Approach

### Lecture and tutorials or problem classes

This teaching and learning approach provides facilitated learning, practical exploration and peer learning.

## Feedback

### Our feedback to You

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
- Test results and feedback
- Solutions to tutes, labs and assignments

### Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through SETU, Student Evaluation of Teacher and Unit. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, and on student evaluations, see:

<http://www.monash.edu.au/about/monash-directions/directions.html>

<http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html>

### Previous Student Evaluations of this unit

For the first time in 2011 this unit included a research topic and presentation to the entire class. Student feedback indicated that this provided a broader perspective of Internet Protocols and their applications. This will continue to be included for this year.

If you wish to view how previous students rated this unit, please go to

<https://emuapps.monash.edu.au/unitevaluations/index.jsp>

## Unit Schedule

Week	Activities	Assessment
0	Review knowledge of Data Communications and Networks before coming to the first lecture	No formal assessment and activities are undertaken in Week 0
1	IPv6 - An Introduction and comparison with IPv4	
2	IPv6 - Control messages	
3	IP protocols and their operations I	
4	IP protocols and their operations II	
5	Routing	
6	Neighborhood discovery	
7	Applications I	
8	Applications II	Research Topic Report due
9	Applications III	Mid-semester Test in tutorial
10	Research Topic Presentation I	Research Topic Presentation in lecture (to be scheduled)
11	Research Topic Presentation II	Research Topic Presentation in lecture (to be scheduled)
12	Research Topic Presentation III	Research Topic Presentation in lecture (to be scheduled)
	SWOT VAC	No formal assessment is undertaken in SWOT VAC
	Examination period	LINK to Assessment Policy: <a href="http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html">http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html</a>

\*Unit Schedule details will be maintained and communicated to you via your MUSO (Blackboard or Moodle) learning system.

# Assessment Requirements

## Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://www.infotech.monash.edu.au/resources/staff/edgov/policies/assessment-examinations/unit-assessment-hu>)

Academic Integrity - Please see the Demystifying Citing and Referencing tutorial at

<http://lib.monash.edu/tutorials/citing/>

## Assessment Tasks

### Participation

#### • Assessment task 1

**Title:**

Mid-semester Test

**Description:**

A multiple choice / short answer paper to test the understanding of the conceptual principles of the internet and how it operates.

**Weighting:**

25%

**Criteria for assessment:**

Understanding of the principles, as well their application to real world situations and problems, is demonstrated.

**Due date:**

Week 9 tutorial

#### • Assessment task 2

**Title:**

Research Topic (Report and Presentation)

**Description:**

Each student will be given a random topic that is related to the unit. Students need to do research in the library as well as on the internet, submit a written report in Week 8 and make a presentation of 30 - 40 minutes to the entire class. The topic for this study will be assigned in Week 2.

The written report will be marked by the lecturer/tutor for its content, analysis and conclusion. The presentation will be evaluated by the lecturer, tutor and the students in the class.

**Weighting:**

25%

**Criteria for assessment:**

Written report and presentation:

1. Quality of content
2. Depth of analysis
3. Quality of conclusion

Marks: 15% for the report, 5% for the presentation and 5% for peer evaluation.



**Due date:**

Report due Week 8; Presentation in Week 10, 11 or 12 lecture (to be scheduled)

## Examinations

- **Examination 1**

**Weighting:**

50%

**Length:**

2 hours

**Type (open/closed book):**

Closed book

**Electronic devices allowed in the exam:**

None

## Assignment submission

It is a University requirement

(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html>) for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at <http://www.infotech.monash.edu.au/resources/student/forms/>. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz).

## Online submission

If Electronic Submission has been approved for your unit, please submit your work via the VLE site for this unit, which you can access via links in the my.monash portal.

## Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process:

<http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html>.

## Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

## Other Information

### Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at:

<http://policy.monash.edu.au/policy-bank/academic/education/index.html>

Key educational policies include:

- Plagiarism  
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html>)
- Assessment  
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-p>)
- Special Consideration  
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.h>)
- Grading Scale  
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html>)
- Discipline: Student Policy  
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html>)
- Academic Calendar and Semesters (<http://www.monash.edu.au/students/key-dates/>);
- Orientation and Transition (<http://www.infotech.monash.edu.au/resources/student/orientation/>);  
and
- Academic and Administrative Complaints and Grievances Policy  
(<http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy>)
- Codes of Practice for Teaching and Learning  
(<http://www.policy.monash.edu.au/policy-bank/academic/education/conduct/suppdocs/code-of-practice-tea>)

### Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at [www.monash.edu.au/students](http://www.monash.edu.au/students). For Sunway see <http://www.monash.edu.my/Student-services>, and for South Africa see <http://www.monash.ac.za/current/>

The Monash University Library provides a range of services and resources that enable you to save time and be more effective in your learning and research. Go to <http://www.lib.monash.edu.au> or the library tab in my.monash portal for more information. At Sunway, visit the Library and Learning Commons at <http://www.lib.monash.edu.my/>. At South Africa visit <http://www.lib.monash.ac.za/>.

Academic support services may be available for students who have a disability or medical condition. Registration with the Disability Liaison Unit is required. Further information is available as follows:

- Website: <http://monash.edu/equity-diversity/disability/index.html>;
- Email: [dlu@monash.edu](mailto:dlu@monash.edu)
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus
- Telephone: 03 9905 5704, or contact the Student Advisor, Student Community Services at 03 55146018 at Sunway