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**FIT2020 Network architecture - Semester 1, 2013**

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FIT2020 Network architecture - Semester 1, 2013

This unit will introduce students to advances in the distributed networked environment. The unit provides knowledge of internetworking protocols, QoS for critical applications, network management and TCP/IP operation. Access to the university's computer systems through an internet service provider is compulsory for distance education students.

Mode of Delivery

- Gippsland (Day)
- Gippsland (Off-campus)
- South Africa (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs tutorials/wk

Workload requirements

For on-campus students, workload commitments are:

- two-hour lecture and
- two-hour tutorial
- a minimum of 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.
- You will need to allocate up to 5 hours per week in some weeks, for use of a computer, including time for newsgroups/discussion groups.

Off-campus students generally do not attend lecture and tutorial sessions, however, you should plan to spend equivalent time working through the relevant resources and participating in discussion groups each week.

Unit Relationships

Prohibitions

GCO3824

Prerequisites

One of FIT1031, FIT1005 or GCO3812 or equivalent

Chief Examiner

Associate Professor Joarder Kamruzzaman
Campus Lecturer
Gippsland
Joarder Kamruzzaman

South Africa
Mohan Das

Tutors
Gippsland
Joarder Kamruzzaman

South Africa
Mohan Das
Academic Overview

Learning Outcomes

At the completion of this unit students will be able to:

- describe the ISO OSI reference model;
- analyse physical layer for networking;
- understand the architecture of data link layer for networking;
- analyse the main functions and design issues of the network layer;
- describe the operation of IPv6;
- analyse the operation of TCP;
- understand integrated and differentiated services architecture;
- understand network management architecture;
- understand the basic concepts of multimedia communications and QoS.
## Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Orientation week</td>
<td>No formal assessment or activities are undertaken in week 0</td>
</tr>
<tr>
<td>1</td>
<td>Concepts of Protocols and Layered Architecture</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Physical Layer: Data and Signals a Theoretical Concepts</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Physical Layer: Transmission Media</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Data Link Layer: Communication Techniques</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Data Link Layer: HDLC</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>WAN: Circuit and Packet Switched</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Routing Schemes and congestion Control</td>
<td>Assignment 1 due Friday 26 April 2013, midnight</td>
</tr>
<tr>
<td>8</td>
<td>Internetworking and IP</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Internetworking and IP Version 6 (IPv6)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Internetworking Operation</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Transport Layer Operation: TCP and UDP</td>
<td>Assignment 2 due Friday 24 May 2013, midnight</td>
</tr>
<tr>
<td>12</td>
<td>Application Layer: Network Management and Multimedia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SWOT VAC</td>
<td>No formal assessment is undertaken in SWOT VAC</td>
</tr>
</tbody>
</table>

*Unit Schedule details will be maintained and communicated to you via your learning system.

## Assessment Summary

Examination (3 hours): 60%: In-semester assessment: 40%

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>15%</td>
<td>Friday 26 April 2013, midnight</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>25%</td>
<td>Friday 24 May 2013, midnight</td>
</tr>
<tr>
<td>Examination 1</td>
<td>60%</td>
<td>To be advised</td>
</tr>
</tbody>
</table>
Teaching Approach

Lecture and tutorials or problem classes

The teaching and learning approach provides facilitated learning, practical exploration and peer learning, equipping you with the ability to apply skills upon completion.
Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

Academic Integrity - Please see the Demystifying Citing and Referencing tutorial at
http://lib.monash.edu/tutorials/citing/

Assessment Tasks

Participation

• Assessment task 1

  Title: Assignment 1
  Description: This assignment will test concepts of layered approach, physical and data link layers
  Weighting: 15%
  Criteria for assessment: Student should demonstrate skills in OSI model, internetworking, physical & data link layers.
  Due date: Friday 26 April 2013, midnight

• Assessment task 2

  Title: Assignment 2
  Description: This assignment will test concepts of wide area networks, routing protocols, transport layer, network management, QoS and application layer. This assignment will also require students to do lab work and include results to support their answers.
  Weighting: 25%
  Criteria for assessment: Students should demonstrate skills in WAN, routing protocols, transport layer, network management and application layer.
  Due date: Friday 24 May 2013, midnight

Examinations
Assessment Requirements

- Examination 1
  
  Weighting:  
  60%
  
  Length:  
  3 hours
  
  Type (open/closed book):  
  Closed book
  
  Electronic devices allowed in the exam:  
  None

Learning resources

Monash Library Unit Reading List  
http://readinglists.lib.monash.edu/index.html

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
- Solutions to tutes, labs and assignments

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:

Returning assignments

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

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 learning system for this unit, which you can access via links in the my.monash portal.

Required Resources

Please check with your lecturer before purchasing any Required Resources. Limited copies of prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

OPNET software trial version from OPNET.COM (free for teaching and learning purposes).

Wireshark software from wireshark.org (free).

Prescribed text(s)

Limited copies of prescribed texts are available for you to borrow in the library.


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: www.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
- Special Consideration; http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.html
- 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/dates/
- Orientation and Transition; http://intranet.monash.edu.au/infotech/resources/students/orientation/
- Code of Practice for Teaching and Learning; http://www.policy.monash.edu/policy-bank/academic/education/conduct/suppdocs/code-of-practice-teaching-learning-policy.html
- Graduate Attributes Policy
  http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.html

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 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/.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to 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/.
Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

Website: http://www.monash.edu/equity-diversity/disability/index.html
Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Community Services at 03 55146018 at Sunway
Email: dlu@monash.edu
Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus

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 the Student Evaluation of Teaching and Units (SETU) survey. 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, see:
www.monash.edu.au/about/monash-directions and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this Unit

Based on previous student feedback this unit is well structured and no changes have been made for this semester.

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