FIT5046
Mobile and distributed computing systems

Unit Guide

Semester 2, 2013

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: 01 Jul 2013
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FIT5046 Mobile and distributed computing systems - Semester 2, 2013

Theoretical foundations of mobile computing systems, wireless networks, advanced mobile applications. Architectures of mobile distributed computing systems; wireless network classification and management; mobile distributed file systems; failure recovery, fault tolerance and reliability of mobile computing systems; replication in mobile distributed systems; case studies for distributed mobile database systems; mobile information systems; advanced mobile computing applications and the Internet; research trends; synchronisation and global time concepts; transaction management mechanisms for mobile computing.

Mode of Delivery

Caulfield (Evening)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload requirements

You are expected to spend 12 hours per week on various activities including reading, communication with other students and unit lecturers, and preparation for learning tasks and formal assessments.

Unit Relationships

Prohibitions

CSE5501

Prerequisites

Recommended background in Data Communications, Networking, Databases, Java Programming.

Chief Examiner

Dr Maria Indrawan-Santiago

Campus Lecturer

Caulfield

Pari Delir Haghighi
Tutors

Caulfield

Pari Delir Haghighi
Learning Outcomes

At the completion of this unit students will:

- develop knowledge of the approaches and methods for building distributed and mobile computing systems;
- be familiar with the currently available models and approaches to building mobile and distributed computing systems;
- have developed practical skills in the use of these models and approaches, so that they will be able to select and apply the appropriate tools for a particular case;
- be aware of the current research directions in the field and their possible outcomes.
Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No formal assessment or activities are undertaken in week 0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Introduction to distributed and mobile computing</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cellular networks and radio communications</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Wireless LAN and IEEE 802.11</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Enabling wireless technologies: Part 1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Enabling wireless technologies: Part 2</td>
<td>Assignment 1: Practical Assignment Due</td>
</tr>
<tr>
<td>6</td>
<td>Internet mobility and Mobile IP</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Context-Aware and Situation-Aware Computing</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Wireless Sensor Networks</td>
<td>Assignment 2: Practical Assignment Due</td>
</tr>
<tr>
<td>9</td>
<td>Web Services</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Distributed and Ubiquitous Systems</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Location-Awareness and Resource-Awareness in mobile environments</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Future trends</td>
<td>Research Paper Presentations</td>
</tr>
<tr>
<td></td>
<td>SWOT VAC</td>
<td>No formal assessment is undertaken in SWOT VAC. Research Paper Assignment Due Week 14</td>
</tr>
</tbody>
</table>

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

Assessment Summary

In-semester assessment: 100%

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>20%</td>
<td>Week 5</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>30%</td>
<td>Week 8</td>
</tr>
<tr>
<td>Presentations</td>
<td>10%</td>
<td>Week 12</td>
</tr>
<tr>
<td>Research Paper Assignment</td>
<td>40%</td>
<td>Week 14</td>
</tr>
</tbody>
</table>
Teaching Approach

Lecture and tutorials or problem classes

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

  This assignment requires students to develop a mobile application and demonstrate it using an emulator.

  Weighting:  
  20%

  Criteria for assessment:  
  Individual assignment.

  Student work will be assessed based on:

  1. The degree to which programs meet the problem specification
  2. How well the code is written and how easy it is to understand

  Due date:  
  Week 5

• Assessment task 2

  Title:  
  Assignment 2

  Description:  
  Practical Assignment.

  This assignment requires students to work on software development on Android-based devices. The completed assignment needs to be demonstrated using an Android emulator.

  Weighting:  
  30%

  Criteria for assessment:  
  Individual assignment.

  Student work will be assessed based on:
Assessment Requirements

1. The degree to which programs meet the problem specification
2. How well the code is written and how easy it is to understand

Due date:
Week 8

• Assessment task 3

Title:
Presentations
Description:
Research Paper Presentation
Weighting:
10%
Criteria for assessment:
Group assignment (groups of 2 to 4)

Student work will be assessed based on:

1. How well the presentation is organised and content is summarised
2. How well visual aids are used and presented to make the presentation more interesting
3. Clarity of presentation

The assignment has a group mark (50%) and an individual component (50%). More details will be provided during the semester.

Due date:
Week 12

• Assessment task 4

Title:
Research Paper Assignment
Description:
Research Paper that reviews and analyses state of the art studies in the mobile computing area.
Weighting:
40%
Criteria for assessment:
Group assignment (groups of 2 to 4)

Student work will be assessed based on:

1. How well the related literature has been studied
2. How well underlying problem has been addressed demonstrated in-depth research
3. The appropriateness of the formatted report style
4. The quality of the student's argument and use of critical thinking and analysis skills.
5. How well in-text citation and referencing are used

The assignment has a group mark (50%) and an individual component (50%). More details will be provided during the semester.

Due date:
Week 14
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

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.monash.edu.au/exams/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.

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). Please note that it is your responsibility to retain copies of your assessments.

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.

Recommended text(s)

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:

- Academic integrity; http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-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/

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

The materials have been updated to reflect a strong relationship between lectures and tutorials. In past years (prior to 2011), the lectures and tutorials work were not well aligned.

Some changes to the materials were made in 2011 taking this feedback into consideration. Further changes include introducing another practical programming component well aligned with theory delivered in lectures around the area of mobile computing.

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