Course Specification

Description: System Administration

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<tr>
<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
<th>Campus</th>
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<tr>
<td>CSC</td>
<td>2405</td>
<td>24424</td>
<td>2, 2003</td>
<td>EXT</td>
<td>1.00</td>
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Academic Group: FOSCI
Academic Org: FOS003
HECS Band: 2
ASCED Code: 029999

STAFFING
Examiner: Zhongwei Zhang
Moderator: Leigh Brookshaw

PRE-REQUISITES
Pre-requisite: CSC2408 Co-requisite: CSC2404

RATIONALE
System administration is management and configuration of one or more computers with multiple operating systems, multiple hardware architectures, multiple software suites, together with the shared resources necessary, such as networks, to make them work together. System administration requires an understanding of how computer systems work, an attention to detail, problem solving, people skills, ethics, security and planning. Computers which function as servers may run Unix-like systems, although others run proprietary software such as that from Novell, IBM or Microsoft.

SYNOPSIS
This unit introduces students to the administration of computer systems and their networks. Coverage includes system administration tools, security, system initialisation, resource management, backups, kernel rebuilding, performance measurement, and network administration. Further topics include ethics, documentation policy development and disaster recovery. Practical work requires use of Unix-like operating systems on dedicated Intel-architecture PCs or equivalent hardware and software negotiated with the lecturer prior to commencement of the semester.

OBJECTIVES
On successful completion of this course students will be able to:
- demonstrate an intermediate level of understanding of general principles of computer system administration.
- demonstrate an ability to write and modify system-level programs in at least two relevant computer languages.
- demonstrate an ability to select, install, and configure applications on an Open Source operating system.
- manage and implement a system for backup and recovery.
- maintain routing tables and firewalls.

**TOPICS**

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>1. Introduction</td>
<td>5.00</td>
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<td>2. Planning and record keeping</td>
<td>5.00</td>
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<td>3. Ethics Basic Concepts</td>
<td>5.00</td>
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<td>4. System Programming</td>
<td>10.00</td>
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<td>5. Shell programming, Scripting</td>
<td>10.00</td>
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<td>6. File system, LVM</td>
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<td>7. Security, monitoring, audit and LDAP</td>
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<td>8. Resource management</td>
<td>5.00</td>
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<td>9. Network services</td>
<td>20.00</td>
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<td>10. Backups &amp; disaster recover</td>
<td>5.00</td>
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<td>11. Building systems</td>
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**TEXT and MATERIALS required to be PURCHASED or ACCESSED:**

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at http://bookshop.usq.edu.au by entering the author or title of the text.

Students will require access to the Internet. All course material can be found at http://www.sci.usq.edu.au/courses.

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Department of Mathematics and Computing CDROM SET 1, 2003 (available from the USQ Bookshop). This CD set contains course material, Windows and Linux Software relevant to this course offering only. Department of Mathematics and Computing CDROM SET 2, 2003 (available from the USQ Bookshop). This set contains a complete RedHat Linux distribution which is required for this course. For more information about the CD sets and their use, please refer to http://www.sci.usq.edu.au/cdrom.
STUDENT WORKLOAD REQUIREMENTS

ACTIVITY       HOURS
Examinations   3
Private Study  160

ASSESSMENT DETAILS

<table>
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<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
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<tr>
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<td>100.00</td>
<td>15.00</td>
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<td>18 Aug 2003</td>
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<td>ASSIGNMENT 2</td>
<td>100.00</td>
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<td>15 Sep 2003</td>
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<td>ASSIGNMENT 3</td>
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<td>3 HR OPEN EXAMINATION</td>
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<td>55.00</td>
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<td>END S2</td>
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NOTES:
- Examination dates will be available during the Semester. Please refer to the examination timetable when published.

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:
   If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks available for the assignment will apply for each working day late.

4 Requirements for student to be awarded a passing grade in the course:
   To be assured of a pass in this course, students must obtain an overall mark of at least 50%, and obtain at least 50% of the marks available in the examination(s), and obtain an overall mark of at least 50% in the assignments.

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 an Open Examination, candidates may have access to any material during the examination except the following: electronic communication devices, bulky
materials, devices requiring mains power and material likely to disturb other students.

7 Examination period when Deferred/Supplementary examinations will be held: Students who obtain an overall passing mark, but who do not perform satisfactorily in an examination, may, at the discretion of the Examiner, be granted a supplementary examination. Students will be granted a deferred examination only if they perform satisfactorily in all other assessment items. 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/SECARIAT/calendar/Part5/ or in the printed version of the current USQ Handbook.

ASSESSMENT 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 Students must retain a copy of each item submitted for assessment. If requested, students will be required to provide a copy of assignments submitted for assessment purposes. Such copies should be despatched to USQ within 24 hours of receipt of a request being made.

OTHER REQUIREMENTS

1 Computer requirements: Students must have exclusive and fully privileged access to an Intel x86 architecture PC with at least 500MB free disk space and an unused disk partition.

2 To complete the examination satisfactorily, students must obtain at least half of the marks available for the examination.