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# SCSSE

**School of Computer Science and Software Engineering  
Faculty of Informatics**

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**MCS9322 Systems Administration  
Subject Outline  
Spring Session 2009**

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Head of School –Professor Willy Susilo, Student Resource Centre, Tel: (02) 4221 3606

## GENERAL INFORMATION

### Subject Coordinator

Telephone Number:

Email:

Location:

Mr Daniel Saffioti

02 4221 4357

dfs@uow.edu.au

3.202

Mr Saffioti's consultation times during session:

Day

Tuesday

Thursday

Time

12:30 – 14:30

16:00 – 18:00

### Subject Organisation

Session:

Credit Points

Contact hours per week:

Lecture Times & Location:

Spring Session, Wollongong Campus

6 credit points

3 hours lectures, 2 hours Computer lab

Lecture A 10:30-12:30 Wed, 3.122

Lecture B 15:30-16:30 Fri, 1.G05

Tutorial Day, Time and Location can be found at: <http://www.uow.edu.au/student/timetables/index.html>

Students should check the subject's web site regularly as important information, including details of unavoidable changes in assessment requirements will be posted from time to time via e-Learning space <http://www.uow.edu.au/student/>. Any information posted to the web site is deemed to have been notified to all students.

### Subject Description

This subject will cover the practical and theoretical aspects of system administration. The various resource areas which have to be managed will be discussed and examined, and the possible methods of monitoring and controlling them in various systems will be investigated. The features unique to both single processor and networked systems will be investigated.

### Subject Objectives

On successful completion of this subject the student should be able to:

- i) identify the manageable components of a typical system,
  - ii) demonstrate an understanding of the steps to follow when the system being managed grows and changes with time.
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## Graduate Qualities

This subject will continue to the following graduate qualities:

Informed

Problem Solvers

Effective Communicators

Responsible

Further information can be found at:

<http://www.uow.edu.au/informatics/scsse/current/SubjectInformation/UOW049401.html>

## Attendance Requirements:

It is the responsibility of students to attend all lectures/tutorials/labs/seminars/practical work for subjects for which you are enrolled. It should be noted that the amount of time spent on each 6 credit point subject should be at least 12 hours per week, which includes lectures/tutorials/labs etc.

Satisfactory attendance is deemed by the University, to be attendance at approximately 80% of the allocated contact hours.

Attendance rolls will be kept for lectures and laboratories. If you are present for less than 80% and would have otherwise passed you need to apply for student academic consideration, otherwise a TF (technical fail) grade will be recorded.

Students MUST attend their **allocated** tutorial unless they have the written permission of the subject coordinator.

## Method of Presentation:

In order to maximize learning outcomes, it is strongly recommended that students attend all lectures. There will be 3 hours of lectures every week.

Lecture notes and other subject resources will be available from the subject's e-Learning site at <http://www.uow.edu.au/student/lol>. These notes do not include many of the examples and explanations given in lectures for which attendance at lectures will be required. Examples and further material will be covered in lectures and supplemental notes will appear on the subject website.

## Lecture Schedule:

A proposed Lecture schedule for the subject is as follows:

| Week  | Topic  |
|-------|--|
| 1     | L1: Introduction.<br>L2: Operating System Fundamentals and Structure.  |
| 2     | L3: Deployment and Management of Enterprise Computing platforms.   |
| 3     | L3: Management of Operating Systems  |
| 4-5   | L5: Networking Basics.<br>L6: Advanced Networking: Routing and Protocols.  |
| 6-7   | L7: Application Services and Protocols (DNS, Mail, HTTP, SNMP).  |
| 8     | L8: Directory Services and Infrastructure (LDAP, NIS, NIS+).<br>L9: System Administration Toolbox.                         |
| 9-10  | L10: Backup and Disaster Recovery.<br>L11: Designing and implementing a scalable computing platform.                       |
| 11    | L12: Security and the Systems Administrator (Systems and User Security),<br>L13: System Administration: Ethics and Policy, |
| 12-13 | L14: Trends in Storage, Services, Redundancy and Security.<br>L15: Tuning your platforms.<br>L16: Revision.                |

Changes to the above schedule will be posted via e-Learning space <http://www.uow.edu.au/student/>. Any information posted to the web site is deemed to have been notified to all students.

### Subject Materials:

Any readings/references are recommended only and are not intended to be an exhaustive list. Students are encouraged to use the library catalogue and databases to locate additional readings. Further readings and materials will be discussed in the first lecture and remain on the lecture slides.

### Textbook(s):

The subject may be used in conjunction with the following texts (which are optional):

E. Nemeth, G. Snyder, S. Seebass, T.R. Hein, UNIX System Administration Handbook, Prentice Hall

S. Garfinkel and G. Spafford, Practical UNIX & Internet Security, O'Reilly Press

M. Lutz, Programming Python, O'Reilly Press

### Assessment:

This subject has the following assessment components.

| ASSESSMENT ITEMS & FORMAT          | % OF FINAL MARK | GROUP/INDIVIDUAL | DUE DATE  |
|------------------------------------|-----------------|------------------|---|
| Four Coding/Practical Assignments. | 20%             | Individual       | Coding Assignment 1: End of Week 3<br>Coding Assignment 2: End of Week 7<br>Coding Assignment 3: End of Week 11<br>Coding Assignment 4: End of Week 13<br>Refer to notes (a) – (g) below. |
| Two Theory (Essay) Assignments     | 10%             | Individual       | Theory Assignment 1: End of Week 5<br>Theory Assignment 2: End of Week 9<br>Refer to notes (a) – (g) below.   |
| Lab Exercises                      | 10%             | Individual       | To be completed Weeks 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 Lab Classes. See (j) below.  |
| Final Examination                  | 60%             | Individual       | Examination Period.   |

### Notes on Assessment:

All assignments are expected to be completed independently. Plagiarism may result in a FAIL grade being recorded for that assignment.

### Electronic Submission of Assessment Items:

Unless otherwise notified by the subject coordinator, all written assignments must be submitted electronically. Submission of assessment items via email will not be accepted.

### Other Procedures for the submission of assessment items:

- There will be 6 assignments. Each assignment is worth 5 marks. Assignments will be returned within two weeks.
- Assignments are to be submitted electronically before the scheduled time, normally Sunday, 11.59pm. Receipts for submitted work are e-mailed to the student and should be kept by the student as evidence of submission. The receipt will contain compilation messages. It is the student's responsibility to ensure that any errors reported are corrected. All coding tasks must compile with the Sun C/C++ compilers.
- Students who copy an assignment may receive **zero** for that assignment. This also covers assignments which may be the product of community effort by several students. Working together is acceptable, but the final coding should be the work of the individual student, as assessment is a measure of your ability. Plagiarism may result in a FAIL grade being recorded for that assessment task.

- (d) Assignments are to be completed in the students time outside of class.
- (e) Coding assignments will typically require students to demonstrate an understanding of programming with either C, C++, Perl, Python and even shell. These assignments will be focused on writing code using various system interfaces and libraries to perform the task of system administration. Students may also get the opportunity to configure services and systems which form part of the task. There will be four such tasks during the semester.
- (f) Theory assignments will provide students with an opportunity to express ideas on systems administration from both a technical and policy viewpoints. There will be two theoretical assignments during the semester.
- (g) During the course of the semester coding and theoretical assignments will be mixed together. Assignments will be due fortnightly from Week 2. All assignments must be submitted using the *submit* program on banshee.
- (h) An extension of time for the completion of an assignment may be granted in certain circumstances. A request for an extension must be made to the Subject Coordinator **before** the due date. Supporting documentation must accompany the request for extension. Late assignments without granted extension will be marked but the mark awarded will be reduced by 1 mark for each day late. Assignments will not be accepted more than three days late. Medical evidence of reasons for lateness may be considered, and should be submitted to Student Administration. Penalties will apply to all late work, except in the case of protracted (and certified) illness.
- (i) Assessed items will be returned to students via the lecturer during allocated lab times.
- (j) Commencing week two, there will be a weekly lab task which is to be completed by the student during the allocated lab time. The tasks will generally involve doing a real world exercise. Failure to complete the task in the allocated time i.e. 1 hour will result in a 0 mark being recorded. All lab tasks are worth 1 mark.

**To be eligible for a Pass in this subject a student must achieve a mark of at least 50% in the final exam. Students who fail to achieve this minimum mark & would have otherwise passed will be given a TF (Technical Fail) for this subject.**

#### **Procedures for the return of assessment items:**

Assessed items will be returned to students via the lecturer during allocated lab times.

#### **Penalties for late submission of assessment items:**

Penalties apply to all late work, except if student academic consideration has been granted. Late submissions will attract a penalty of 1 mark per day.

Work more than three (3) days late will be awarded a mark of zero.

#### **Tutorial/Lab Closure Policy**

If for any reason, the number of students in a tutorial or lab falls below a sustainable enrolment level, as determined by the Head of School, tutorials/labs offered for that subject may be collapsed or deleted.

You will have to attend the new tutorials/lab if this closure affects the one you are attending.

We will endeavour to make this decision no later than Week 4 of session.

#### **Supplementary Exams**

Supplementary Exams will be dealt with in accordance with student academic consideration policy (<http://www.uow.edu.au/about/policy/studentacademicconsiderationpolicy.pdf>) 9.2 Timing of Supplementary Exams.

While the School normally grants supplementary exams when the student does not sit the standard exam for an acceptable reason, each case will be assessed on its own merit and there is no guarantee a supplementary exam will be granted. If a supplementary exam is granted, you will normally be notified via SOLS Mail the time and date of this supplementary exam. You must follow the instructions given in the email message.

**Please note that if this is your last session and you are granted a supplementary exam, be aware that your results will not be processed in time to meet the graduation deadline.**

### **Student Academic Consideration Policy**

The School recognises that it has a responsibility to ensure equity and consistency across its subjects for all students. Sometimes, in exceptional circumstances, students need to apply for student academic consideration in order to complete all assessable work.

The University applies strict criteria to the granting of student academic consideration. Before applying for student academic consideration, students should carefully read the University's policy which can be found at: <http://www.uow.edu.au/about/policy/studentacademicconsiderationpolicy.pdf>.

### **Plagiarism**

**When you submit an assessment task, you are declaring the following**

1. It is your own work and you did not collaborate with or copy from others.
2. You have read and understand your responsibilities under the University of Wollongong's policy on plagiarism.
3. You have not plagiarised from published work (including the internet). Where you have used the work from others, you have referenced it in the text and provided a reference list at the end of the assignment.

Students must remember that:

Plagiarism will not be tolerated.

Students are responsible for submitting original work for assessment, without plagiarising or cheating, abiding by the University's policies on Plagiarism as set out in the University Handbook under University Policy Directory and in Faculty handbooks and subject guides. Plagiarism has led to the expulsion from the University.

### **Student Academic Grievance Policy**

The School aims to provide a fair, equitable and productive learning environment for all its students. The Student Academic Grievance Policy seeks to support the achievement of this goal by providing a transparent and consistent process for resolving student academic grievances.

Any student who has a grievance over a result should obtain a Faculty of Informatics Appeal Against Decision or Action Affecting Academic Experience form from the Informatics Student Enquiry Centre. (<http://www.uow.edu.au/content/groups/public/@web/@inf/@faculty/documents/doc/uow017433.pdf>) The student should firstly take the form to the marker/lecturer to discuss the matter and, if the student is still not satisfied, s/he should take the next step as outlined on the form.

Once the grievance has been considered by the Faculty, if the student still feels the situation has not been fully resolved s/he may consult the Dean of Students. However, the Dean of Students can have no input into the academic judgment of the lecturer and can only review the grievance to ensure proper procedure has been followed.

### **Relevant University Policies, procedures and students services:**

For more information students must refer to the Faculty handbook, online references or consult the UOW policy in full at <http://www.uow.edu.au/handbook/courserules/studacgrievpol.html> which contains a range of policies on educational issues and student matters.

This subject outline can be found at: <http://www.uow.edu.au/informatics/scsse/current>

This outline should be read in conjunction with the following documents:

|  |   |
|--|---|
| Code of Practice - Teaching and Assessment<br><a href="http://www.uow.edu.au/handbook/codesofprac/teaching_code.pdf">http://www.uow.edu.au/handbook/codesofprac/teaching_code.pdf</a>  | Code of Practice - Students<br><a href="http://www.uow.edu.au/handbook/codesofprac/cop_students.html">http://www.uow.edu.au/handbook/codesofprac/cop_students.html</a>                                      |
| Code of Practice-Honours<br><a href="http://www.uow.edu.au/handbook/CodeofPractice-Honours.pdf">http://www.uow.edu.au/handbook/CodeofPractice-Honours.pdf</a>  | Acknowledgement Practice <b>Plagiarism will not be tolerated:</b><br><a href="http://www.uow.edu.au/handbook/courserules/plagiarism.html">http://www.uow.edu.au/handbook/courserules/plagiarism.html</a>    |
| Key Dates<br><a href="http://www.uow.edu.au/student/dates.html">http://www.uow.edu.au/student/dates.html</a>   | Student Academic Consideration Policy:<br><a href="http://www.uow.edu.au/about/policy/studentacademicconsiderationpolicy.pdf">http://www.uow.edu.au/about/policy/studentacademicconsiderationpolicy.pdf</a> |
| Course Progress Requirements:<br><a href="http://www.uow.edu.au/student/mrp/index.html">http://www.uow.edu.au/student/mrp/index.html</a>   | Graduate Qualities Policy:<br><a href="http://www.uow.edu.au/about/teaching/qualities/index.html#_The new UOW">http://www.uow.edu.au/about/teaching/qualities/index.html#_The new UOW</a>                   |
| Academic Grievance Policy (Coursework and honours students)<br><a href="http://www.uow.edu.au/handbook/courserules/studacgrievpol.html">http://www.uow.edu.au/handbook/courserules/studacgrievpol.html</a>   | Non-Discriminatory Language Practice and Presentation<br><a href="http://staff.uow.edu.au/eed/nondiscrimlanguage.html">http://staff.uow.edu.au/eed/nondiscrimlanguage.html</a>                              |
| Occupational Health and Safety<br><a href="http://staff.uow.edu.au/ohs/commitment/ohspolicy/index.html">http://staff.uow.edu.au/ohs/commitment/ohspolicy/index.html</a>  | Ownership of Work & Intellectual Property Policy:<br><a href="http://www.uow.edu.au/handbook/generalcourserules/UOW028651.html">http://www.uow.edu.au/handbook/generalcourserules/UOW028651.html</a>        |
| Human Research Ethics Committee:<br><a href="http://www.uow.edu.au/research/rso/ethics/human/">http://www.uow.edu.au/research/rso/ethics/human/</a>  | Rules for student conduct:<br><a href="http://www.uow.edu.au/handbook/generalrules/StudentConductRules.pdf">http://www.uow.edu.au/handbook/generalrules/StudentConductRules.pdf</a>                         |
| Independent Learners' Introductory Program<br><a href="http://www.uow.edu.au/student/attributes/ilip/">http://www.uow.edu.au/student/attributes/ilip/</a>  | Informatics Faculty Librarian, Ms Annette Meldrum, phone: 4221 4637, email: <a href="mailto:ameldrum@uow.edu.au">ameldrum@uow.edu.au</a>  |
| Student Support Services:<br><a href="http://www.uow.edu.au/student/services/">http://www.uow.edu.au/student/services/</a><br>Informatics Faculty SEDLO ( <b>Student Equity and Diversity Liaison Officers</b> ) Virginie Schmelitschek, phone 4221 3833, <a href="mailto:virginie@uow.edu.au">virginie@uow.edu.au</a> | SCSSE Internet Access & Student Resource Centre<br><a href="http://www.uow.edu.au/informatics/common/uow024466.html">http://www.uow.edu.au/informatics/common/uow024466.html</a>                            |
| SCSSE Computer Usage Rules<br><a href="http://www.uow.edu.au/informatics/common/uow024457.html">http://www.uow.edu.au/informatics/common/uow024457.html</a>  | SCSSE Subject Outlines<br><a href="http://www.uow.edu.au/informatics/scsse/current">http://www.uow.edu.au/informatics/scsse/current</a>   |