CSCI222  Systems Development
Subject Outline
Spring Session 2008

GENERAL INFORMATION

Subject Coordinator
Associate Professor Neil Gray
Telephone Number: 4221 3812
Email: nabg@uow.edu.au
Location: 3.206

Associate Professor Gray’s consultation times during session:
Day       Time
Tuesday   9.30-11.30
Wednesday 13.30-15.30

Lecturer
Dr Janusz Getta
Telephone Number: 4221 4339
Email: jrg@uow.edu.au
Location: 3.210

Lecturer’s consultation times during session:
Day       Time
Monday   11.30 – 13.30
Wednesday 9.30 – 11.30

Subject Organisation
Session: Spring Session, Wollongong Campus
Credit Points: 6 credit points
Contact hours per week: 3 hours lectures, 2 hours Computer lab
Lecture Times & Location: Wednesday: 15.30 – 17.30 at 20.LT5
                         Thursday: 09.30 – 10.30 at 20.LT5
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/lol. Any information posted to the web site is deemed to have been
notified to all students.

Subject Description
This subject provides an introduction to the practical aspects of developing and managing a software
project. Students will be gain practical experience with tasks including: Project Management;
Requirements Analysis; Software Design; Source Control and Software Testing. The subject will also
include review of object-oriented design and implementation, design patterns and provide an overview of technologies for re-use. CSCI222 provides a framework for understanding and developing the necessary skills to successfully undertake the major third year software project. The emphasis of this subject is on the design and development process and its application to real world problems.

Objectives
On successful completion of this subject, students should be able to: 1. Demonstrate an understanding of the principles of good software design 2. Use appropriate tools to design a software application of moderate size and complexity 3. Use appropriate tools to develop and implement a software application of moderate size and complexity 4. Create, plan and implement a test plan for a software application of moderate size and complexity 5. Use modelling concepts and notations such as UML, use-case and the entity-relationship model.

Graduate Qualities
All Schools in the Faculty of Informatics have adopted the UOW Graduate Qualities. On completion of their course graduates will be informed, independent learners, problem solvers, effective communicators and responsible. Further information can be found at http://www.uow.edu.au/about/teaching/qualities/.

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 to be attendance at approximately 80%* of the allocated contact hours. Attendance rolls will be kept for lectures, tutorials and laboratories. If you are present for less than 80%* you need to apply for special consideration, otherwise a fail grade will be recorded.

Method of Presentation:
In order to maximize learning outcomes, it is strongly recommended that students attend all lectures. Lectures and laboratory assignments

Lecture Schedule:
A proposed Lecture schedule for the subject is as follows:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Overview of subject, and introduction to the IDE environment that is to be used in the laboratories</td>
</tr>
<tr>
<td>2</td>
<td>Review of classes and revision of their realization in C++ ; “Testing”</td>
</tr>
<tr>
<td>3</td>
<td>“Software Engineering”, cppUnit unit testing for C++</td>
</tr>
<tr>
<td>4</td>
<td>Software process models – sequential, iterative, agile; unit testing and version management</td>
</tr>
<tr>
<td>5</td>
<td>UML modeling of a program; subversion version management</td>
</tr>
<tr>
<td>6</td>
<td>Modeling; Group work and group organization</td>
</tr>
<tr>
<td>7</td>
<td>Rational Unified Process (RUP)</td>
</tr>
<tr>
<td>8</td>
<td>RUP and RUP case study continued</td>
</tr>
<tr>
<td>9</td>
<td>Distributed Systems</td>
</tr>
<tr>
<td>10</td>
<td>Distributed Systems continued; UML modeling of “systems”</td>
</tr>
<tr>
<td>11</td>
<td>UML modeling continued; Requirements</td>
</tr>
<tr>
<td>12</td>
<td>“Reuse”, “finding classes”; other software engineering topics</td>
</tr>
<tr>
<td>13</td>
<td>User interface issues, summarize</td>
</tr>
</tbody>
</table>

Changes to the above schedule will be posted via e-Learning space http://www.uow.edu.au/student/lol. Any information posted to the web site is deemed to have been notified to all students.
The above schedule, based on the 2007 version of this subject, is provisional. It is likely that there will be some shifts of content.

In the first part of session, the subject is covered in two “strands”. The Wednesday 2 hour lectures are “theory”, while the Thursday lectures are “practical”. The Thursday lectures cover topics like the Integrated Development Environment that is to be used in laboratories, details of the use of a Unit Test Framework (cppUnit), use of the “subversion” version management system, and aspects of group work.

**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.

Lectures notes and assignment specifications will be available through e-Learning space http://www.uow.edu.au/student/lol.

Any variations of assignment specifications will be announced in lectures, NOT via e-Learning. Supplementary materials will be found in /share/cs-pub/csci222. These materials may include software systems that can be installed on your own machine, reference manuals for software, and data files.

**Textbook(s):**
Reference books (reserve):
"Software development for small teams [electronic resource]: a RUP-centric approach" by Gary Pollice et al
“The rational unified process: an introduction” by Philippe Kruchten
“Unit Test Frameworks” by Paul Hamill
"Using UML: Software Engineering with Objects and Components", by Perdita Stevens and Rob Pooley

**Assessment:**
This subject has the following assessment components.

<table>
<thead>
<tr>
<th>ASSESSMENT ITEMS &amp; FORMAT</th>
<th>% OF FINAL MARK</th>
<th>GROUP/INDIVIDUAL</th>
<th>DUE DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1: Individual assignment, unit-testing of C++ code</td>
<td>15%</td>
<td>Individual!</td>
<td>August 22nd</td>
</tr>
<tr>
<td>Assignment 2: Group assignment, “Elaboration and Construction”</td>
<td>25%</td>
<td>Group</td>
<td>September 19th</td>
</tr>
<tr>
<td>Assignment 3: Group assignment, “Inception and Elaboration”</td>
<td>20%</td>
<td>Group</td>
<td>October 22nd</td>
</tr>
<tr>
<td>Final Exam</td>
<td>40%</td>
<td>Individual!</td>
<td>Scheduled by the University</td>
</tr>
</tbody>
</table>

**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.

**Other Procedures for the submission of assessment items:**
Assignment marks should be returned about 2 weeks after submission.
Students must form groups of four members prior to the start of the first group assignment. The groups persist for the remainder of the session. Groups will identify their members to the subject coordinator at the start of assignment 2.

The assignments require the preparation of reports containing variously design artifacts, code, evidence for correct operation of code, and other components as specified. These reports are prepared as PDF documents and submitted electronically.

In assignment-1, the unit-test assignment, the submitted work must be that of an individual; collaboration is not permitted. For assignments 2 and 3, groups must electronically submit a single PDF report and, in addition, must manually submit a cover note, signed by all group members, that gives details of the relative contributions made by the individual members of the group.

Assignments are submitted electronically using the turnin program on the University’s banshee computer (the main server for CS undergraduate work). Details of the use of turnin are included in the assignments.

To be eligible for a Pass in this subject a student must achieve a mark of at least 16 out of 40 in the examination. Students who fail to achieve this minimum mark will be given a TF (Technical Fail) for this subject.

Procedures for the return of assessment items:
Marks are posted to the SOLS system. Marker comments will be returned to students via the university’s email system.

Penalties for late submission of assessment items:
Penalties apply to all late work, except if special consideration has been granted. Late submissions will attract a penalty of 25% of the assessment mark per day including weekends. Work more than four (4) days late will be awarded a mark of zero.

The turnin system will stop accepting submissions at 11.59pm on the specified due date. The system has automatic provision for late submission for assignments. The late submission system allows for an additional four days in which to submit work. It is not necessary to apply to use late submission for assignments.

Supplementary Exams
Supplementary Exams will be dealt with in accordance with student academic consideration policy

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.

Special 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 special consideration in order to complete all assessable work.
The University applies strict criteria to the granting of special consideration. Before applying for student special consideration, students should carefully read the University’s policy which can be found at: http://www.uow.edu.au/handbook/courserules/specialconsideration.html

As an example: If a student requires an extension of time for the completion of an assignment this may be granted in certain circumstances. A request for an extension must be made to the Subject Coordinator via SOLs before the due date.

Additional Information
Students must refer to the Faculty Handbook or online references which contains a range of policies on educational issues and student matters.

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/studaegrievpol.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/common/UOW030689.html

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

<table>
<thead>
<tr>
<th>Code of Practice - Teaching and Assessment</th>
<th>Code of Practice - Students</th>
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</thead>
<tbody>
<tr>
<td>Code of Practice - Honours</td>
<td>Acknowledgement Practice Plagiarism will not be tolerated:</td>
</tr>
<tr>
<td>Key Dates</td>
<td>Special Consideration Policy:</td>
</tr>
<tr>
<td>Course Progress Policy:</td>
<td>Graduate Qualities Policy:</td>
</tr>
<tr>
<td>Academic Grievance Policy (Coursework and honours students)</td>
<td>Non-Discriminatory Language Practice and Presentation</td>
</tr>
<tr>
<td>Occupational Health and Safety</td>
<td>Intellectual Property Policy</td>
</tr>
<tr>
<td>Human Research Ethics:</td>
<td>Rules for student conduct and discipline:</td>
</tr>
<tr>
<td>Information Literacies Introduction Program</td>
<td>Informatics Faculty Librarian, Ms Annette Meldrum, phone:</td>
</tr>
<tr>
<td><a href="http://www.uow.edu.au/student/attributes/ilip/">http://www.uow.edu.au/student/attributes/ilip/</a></td>
<td>4221 4637, email: <a href="mailto:ameldrum@uow.edu.au">ameldrum@uow.edu.au</a></td>
</tr>
<tr>
<td>Student Support Services:</td>
<td>SCSSE Internet Access &amp; Student Resource Centre</td>
</tr>
<tr>
<td>Informatics Faculty SEDLO (Student Equity and Diversity Liaison Officers)</td>
<td>SCSSE Subject Outlines</td>
</tr>
<tr>
<td>Virginie Schmelitschek, phone 4221 3833, <a href="mailto:virginie@uow.edu">virginie@uow.edu</a></td>
<td><a href="http://www.uow.edu.au/informatics/scsse/current/UOW041847.html">http://www.uow.edu.au/informatics/scsse/current/UOW041847.html</a></td>
</tr>
<tr>
<td>SCSSS Computer Usage Rules</td>
<td></td>
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</tbody>
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