Faculty of Computing and Mathematical Sciences

DEPARTMENT OF COMPUTER SCIENCE

COMP103-15C (NET and SEC) : Introduction to Computer Science

(15 points)

Paper Outline - 2015

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Description

This paper introduces computer programming in C# – the exciting challenge of creating software and designing artificial worlds within the computer. It also covers concepts such as the internals of the home computer, the history and future of computers, how computers are changing society, and current research and challenges in computing.

Learning outcomes

Students who pass this paper will be able to create programs in C#, using the common graphical controls such as buttons, picture boxes and text fields. They will understand the basic concepts of event-driven and object-oriented programming. They will be able to use conditional statements to react to user input and process errors. They will be able to use iterative statements, arrays, lists and structs to process large amounts of data. The student will understand a broad range of significant Computer Science concepts.

Timetable

The timetable shows what topics are covered in the lectures, tutorials and practicals for any given week. It also gives the holiday dates, test dates, and project due dates. The details presented were correct at the time of going to print. Your Tutor will notify you of any changes or corrections.

Lectures

All lectures are provided online as videos. These are recordings of the actual lectures from the on-campus version of the course. It is expected that students will view the lectures each week in preparation for tutorial and lab work. Students will need to have access to a broadband internet connection to be able to view/download the video lectures.

Tutorials

Tutorials will be held online using the Moodle system. Students will be assigned a tutorial in the beginning of the paper and expected to log into Moodle at the required time to take part in the online tutorial.

Required Text (one of the following texts)

Gaddis, Tony (2012) *Starting out with Visual C# 2010, second edition, Addison-Wesley (ISBN 13: 978-0-13-216545-7)*

or

Gaddis, Tony (2014) *Starting out with Visual C# 2012, second edition, Addison-Wesley (ISBN 13: 978-1-292-06119-1)*

Handouts

Resources in the form of lecture notes, videos of lectures, course outline, background material, various user guides, lab and test sign ups, practice tests, sample code, data files and weekly quizzes will be made available through the course Moodle website (elearn.waikato.ac.nz). Also available on the Moodle website will be support through various interactive forums.

Assessment
The practical programme must be completed to the satisfaction of the coordinator for the paper.

Written Tests: The two written tests will test the material covered up to that point. The exact time of the written tests will be organised closer to the date of the tests.

Practical Exercises: Each week you will be asked to design or modify applications in C# according to the specifications given..

Practical Tests: The practical tests will test your individual understanding of the programming skills that you have been practicing in the practical exercises. Exact times for the tests will be organised closer to the day of each test.

Tutorials: Each tutorial involves exercises that you should read before attending to the online tutorial. Tutorial exercises will be worked through during the tutorial, under the guidance of the tutor. You will be asked to attempt an exercise and post your attempt on Moodle. You will receive either a satisfactory or an unsatisfactory rating for your attempt at the tutorial exercise.

Students must hand in their coursework by the due date. If they have not completed it, they should hand in what they have done so far. Individual extensions will not be given except for a medical certificate or counsellor's letter specifically referring to that item of assessment.

Internal Assessment/Examination Ratio: 1:0

Assessment Components

Component	% of overall mark	Due date
Tutorials, 10 x 1%	10%	various times, weeks 2-11
Moodle Quizzes, 10 x 1%	10%	various times, weeks 2-11
Lab Exercises, 9 x 1.1%	10%	various times, weeks 2-11
Practical Test 1	10%	In Week 4, date and time to be decided in conjunction with students
Theory Test 1	15%	Week 7, date and time to be decided in conjunction with students
Practical Test 2	15%	Week 9, date and time to be decided in conjunction with students
Practical Test 3	15%	Week 11, date and time to be decided in conjunction with students
Theory Test 2	15%	Week 13, date and time to be decided in conjunction with students

In the weeks when a test is scheduled the student will signup for a test session on Moodle from various times which are convenient for the student. If the student cannot make one of the sessions then they should contact the tutor to arrange an alternative time to do the test.

Assessment Deadlines
Students must hand in their coursework by the due date. If they have not completed it, they should hand in what they have done so far. Individual extensions will not be given except for a medical certificate or counsellor’s letter specifically referring to that item of assessment.

Course Requirements
The following components are compulsory for this paper:

The five tests (3 practical tests and 2 theory tests) are all compulsory components.

An overall mark of 50% is required for a pass. An RP grade will not normally be accepted as fulfilling a prerequisite for a more advanced paper (see Assessment Regulations, 20.(4) p125).

Additional Information
Your attention is drawn to the following regulations and policies, which are published in the University Calendar:

- Assessment Regulations 2005
- Student Discipline Regulations 2008
- Computer Systems Regulations 2005
- Policy on the Use of Māori for Assessment
- Ethical Conduct in Human Research and Related Activities Regulations 2008
- Student Research Regulations 2008

Academic Integrity
The following is a definition of plagiarism (quoted from section 3 of the Assessment Regulations):

"Plagiarism means presenting as one's own work the work of another, and includes the copying or paraphrasing of another person's work in an assessment item without acknowledging it as the other person's work through full and accurate referencing; it applies to assessment (as defined in the Assessment Regulations) presented through a written, spoken, electronic, broadcasting, visual, performance or other medium."

Plagiarism is prohibited. It is classified as misconduct under the University's Student Discipline Regulations, for which there are a range of penalties. All assignments, practicals and tests are considered individual exercises. Anything you hand in for these must be your own work. If you claim authorship of any work for assessment which is not your own, you are in breach of the University regulations. The source of any material that is not the student's own must be acknowledged and where appropriate, a reference provided. You may discuss a practical in general terms with other students, but the actual work presented must be your own. where appropriate, students are responsible for protecting their intellectual property, including computer files and printed material.

Performance Impairment
Special consideration for missed or impaired course work and policy on the use of Maori for assessment is covered under Assessment Regulations in the University Calendar. The special consideration for missed or impaired course work is not yet covered in the 2012 University Calendar, but is expected to be the same.

Student Concerns and Complaints
As part of its desire to maintain quality educational standards, the University has put in place a policy which outlines how students may raise individual concerns or complaints. The policy is intended to assist students in the resolution of individual student academic complaints constructively, quickly and fairly.

The brochure 'Student Concerns and Complaints Policy' provides details of the University's process for handling concerns and complaints and is published in the University Calendar. It is also available from Faculty and School Offices, and the Student and Academic Services Division.

Application for Extension
As part of its desire to maintain quality educational standards, the University has put in place a policy which outlines how students may raise individual concerns or complaints. The policy is intended to assist students in the resolution of individual student academic complaints constructively, quickly and fairly.

The brochure 'Student Concerns and Complaints Policy' provides details of the University's process for handling concerns and complaints and is published in the University Calendar. It is also available from Faculty and School Offices, and the Student and Academic Services Division.

Review of Grade
If you believe the mark for an item of your coursework is incorrect or unfair, you may apply for a review of the mark. Application is to be made on the appropriate department form. Applications should be delivered to the **lecturer or staff member** responsible for the paper. Your application cannot be made within 24 hours from the return of the assessment. This is a 'cooling off' period for you to consider how you did, rather than making an emotive response. During this time you may ask about the content of the coursework, but apart from arithmetic mistakes, you should not query the grade.

Lecture Schedule

Date	Lecture A	Lecture B	Lecture C
Week 0 2 Mar	No Lectures	No Lectures	No Lectures
Week 1 9 Mar	Introduction to C# and Visual Studio	Computer Science and Programming Introduction	Using Visual Studio
Week 2 16 Mar	Design and Graphics	How a Computer Works	Graphics examples
Week 3 23 Mar	Selection	Number Systems	Selection examples
Week 4 30 Mar	Repetition (simple loops)	Repetition (nested loops)	Repetition examples
6 Apr	**Teaching Recess/School Holidays**		
13 Apr	**Teaching Recess/School Holidays**		
Week 5 20 Apr	Algorithmic Problem Solving	Algorithmic Problem Solving	Algorithmic Problem Solving examples
Week 6 27 Apr	Methods	HCI/Usability	Methods examples
Week 7 4 May	No Lecture	Text Files	No Lecture
Week 8 11 May	Text File Examples	No Lecture	Arrays
Week 9 18 May	Array Examples	Lists and Structs	List and Structs examples
Week 10 25 May	Files and Databases	Internet	Gadgeteering
Week 11 1 Jun	Software Engineering	CS in Industry	No Lecture
Week 12 8 Jun	No Lecture	No Lecture	No Lecture
15 Jun	**Uni exams start**		

Practical and Tutorial Schedule

Date	Tutorials	Practicals	Notes
Week 0 2 Mar	No Tutorials	No Practical	
Week 1 9 Mar	No Tutorials	No Practical	
Week 2 16 Mar	Using Visual Studio .NET and Designing Applications	An Introduction to Visual Studio .NET and C#	
Week 3 23 Mar	Using Variables and Constants	Using Variables and Constants	
Week 4 30 Mar	Using Selection Structures	Using Selection Structures	Practical Test 1
6 Apr	**Teaching Recess/School Holidays**		
13 Apr	**Teaching Recess/School Holidays**		
Week 5 20 Apr	Using Repetition Structures and Number Systems	Using Repetition Structures	
Week 6 27 Apr	Algorithmic Problem Solving	Algorithmic Problem Solving	
Week 7 4 May	Methods	Methods and Menus	Theory Test 1
Week 8 11 May	Text Files	Text Files	
Week 9 18 May	CSV Files & Arrays	CSV Files & Arrays	Practical Test 2
Week 10 25 May	Lists	Lists	
Week 11 1 Jun	Problem Solving	Problem Solving	Practical Test 3
Week 12 8 Jun	Problem Solving	Problem Solving	
Week 13 15 Jun	**Exams**		Theory Test 2