Course Handout:

Paper Number & Title: 158.212 Application Software Development
Points Value: 15   **Semester**: 3
Campus: AL   **Mode**: I

Paper Co-ordinator: Dr Suriadi, SEAT, Albany, OR 106 Room 19.6(a),
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Office Hour: Tuesday 14:00 – 16:00 in OR 106 Room 19.6(a)

Tutors: Tong Liu and Indu Sofat

Aims:
- To gain an understanding of structured and object-oriented software development methods and techniques.
- To gain practical skills in using a modern integrated development environment to develop application software.

Calendar Prescription:
A study of the rudiments of structured and object-oriented software development methods and techniques. Students will utilise a modern integrated development environment to gain practical skills.

Learning Outcomes:
On successful completion of this course the student should be able to:
1. Understand and apply fundamental software engineering principles such as loose coupling between code modules, high cohesion within code modules and the use of control structures such as iteration, sequence and conditional selection in writing modular code.
2. Apply event-driven solutions using a combination of object and procedural paradigms in a visual programming integrated development environment.
3. Learn the use of structured exception handling and debugging for developing more robust programs.
4. Have the ability to define classes by using encapsulation, polymorphism, inheritances, events and delegates.
5. Gain practical skills by using a visual programming language.

Assessment:

	Due	Marks
5 assignments	Wk 2-6	40%
Final examination (2 hours)		60%
		100%

Learning Programme and Schedule (subject to modification prior to course commencement):

Lecture No.	Topics
1	.NET Framework and Basic programming – variables, types, conversion
2	Basic programming – flow control, conditions, loops
3	Basic programming – functions, parameters, scope, debugging
4	Object oriented programming (Part 1 – basic concepts) and Visual Studio IDE (projects, properties, forms)
5	Refactoring and Controls/Events – adding controls
6	Test Driven Development and Controls/Events – system events, manual events
7	Input validation, exception handling, dialog boxes
8	Basic data structures – array, list, dictionary
9	Object oriented programming (Part 2 – classes, constructors, data members and methods)
10	Multiple Forms – interaction and navigation
11	Object oriented programming (Part 3 – inheritance, method overriding, polymorphism)
12	Object oriented programming (Part 4 – abstract classes, multiple inheritance, interfaces)
13	Course Review

Lab Sessions: Labs will start in week one. Students should attend at least 1 hour of the lab session each week. Assignments will be demonstrated and marked during the lab sessions.

Timetable: Summer Semester 2014
                                   Lectures:
                                   Mon.   12:00-14:00 (AT6)
                                   Thu.   09:00-11:00 (AT6)
                                   Lab Tutorials:
                                   Mon.   15:00-17:00 (CLQB4)

Requirements to complete the paper:
No "terms" requirement.

Conditions for Aegrotat Pass and Impaired Performance:
See University guidelines.

Proposed Feedback and Support for Student Learning:
Assignments marked and returned.
Tutorials during normal working hours.
Tutors available in the computer laboratories to provide assistance.
Access to teaching staff.

Recommended Textbook:
"Visual C# 2012 How to Program" (Ed 5) by Paul Deitel and Harvey Deitel or
"Visual Basic 2012 How to Program" (Ed 6) by Paul Deitel, Harvey Deitel and Abbey Deitel
If you decide to purchase a recommended book, then select the book based on which language you would like to primarily program in during the course.

Software: Microsoft Visual Studio 2012 Ultimate – Available on Massey lab machines and available for students through the MSDN Academic Alliance. See:
https://e5.onthehub.com/WebStore/Security/SignIn.aspx?rurl=%2fWebStore%2fProductsByMajorVersionList.aspx%3fws%3d3ba0db71-5f9b-e011-969d-0030487d8897%26vsro%3d8%26JSEnabled%3d1&ws=3ba0db71-5f9b-e011-969d-0030487d8897&vsro=8
You will have to register your student ID numbers on this page and then you should be able to sign in and purchase (add to cart) the required software (cost $0.00).

The terms for usage of the software and further instructions can be found on:
http://seat.massey.ac.nz/msdn.asp

Grievance Procedures: See University Guidelines.