# Table of Contents

FIT2034 Computer programming 2 - Semester 1, 2010

Chief Examiner: ................................................................. 1
Lecturer(s) / Leader(s): ....................................................... 1
Caulfield ........................................................................... 1

**Additional communication information:** ................................................................. 1

**Introduction** ............................................................................... 2
**Unit synopsis** ........................................................................... 2
**Learning outcomes** ...................................................................... 2
**Contact hours** ............................................................................... 2
**Workload** .................................................................................... 2

**Unit relationships** ........................................................................ 3
- Prerequisites............................................................................ 3
- Prohibitions ............................................................................. 3

**Teaching and learning method** ......................................................... 4
- Teaching approach .................................................................. 4
- Timetable information .............................................................. 4
- Tutorial allocation .................................................................. 4
- Unit Schedule ......................................................................... 4
- Improvements to this unit ....................................................... 5

**Unit Resources** .............................................................................. 6
- Prescribed text(s) and readings .............................................. 6
- Recommended text(s) and readings ...................................... 6
- Required software and/or hardware ...................................... 6
- Equipment and consumables required or provided .............. 6
- Study resources ....................................................................... 7

**Assessment** ...................................................................................... 8
- Overview .................................................................................. 8
- Faculty assessment policy ...................................................... 8
- Assignment tasks ................................................................. 8
- Examination ............................................................................ 9
- Due dates and extensions ....................................................... 9
- Late assignment ..................................................................... 9
- Return dates ........................................................................... 10

**Appendix** ....................................................................................... 11
FIT2034 Computer programming 2 - Semester 1, 2010

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Additional communication information:

Unless you have personal enquiries (see below) all communication related to the content of the unit must be via the online Discussion Forums. If you do send the lecturer an email that relates to the content of the unit it might not be answered, or you may be told to ask to the forum.

Personal enquiries include seeking advice regarding assignment extensions (where warranted by circumstances recognised for special consideration requests), or the need to discuss your personal progress. You are certainly not asked to put anything of a personal nature into forum postings. Personal matters can also be dealt with by telephone.

On-campus students, and off-campus students who live or work near a campus, may also visit their lecturer at their office.

Note: The staff may contact you during the semester, by sending an email to your @student.monash.edu address. You are therefore expected to either check that email regularly (at least twice a week), or have it redirect mail to an address which you are going to check regularly. Also, any email purporting to be from a student which does not come from your Monash email address are allowed to be ignored by the staff member, as sending replies to any other addresses could be a violation of the Privacy provisions of legislation.
Introduction

Welcome to FIT2034 Computer Programming 2. This 6 point unit is a core unit in the following majors of the Bachelor of Information Technology and Systems (BITS) degree:

- Applications Development and Networks
- Multimedia Games Development
- Net-centric Computing
- System Development
- Security

The unit has been introduced to supplement your first programming unit FIT1002 to provide you with an understanding of more advanced concepts in object-oriented programming.

Unit synopsis

Following on from FIT1002, this unit introduces more advanced object-oriented programming topics than its prerequisite, such as inheritance and polymorphism. It gives students a deeper understanding of programming and data structures by introducing recursion and dynamic data structures. It also gives more practical skills in designing, building and testing larger computer programs, including ones having graphical user interfaces, and utilising file I/O. Modern software tools to support programming activities of testing and group-based development are also demonstrated.

Learning outcomes

At the completion of this unit students will:

- demonstrate an understanding of advanced object-oriented concepts such as inheritance, polymorphism, and abstract classes and interfaces as provided for in Java;
- be able to create programs that provide a graphical user interface and use event handling;
- be able to write programs involving abstract and dynamic data structures, and implement algorithms for searching, insertion and deletion;
- be able to use the collection classes in the Java API;
- be able to implement algorithms that utilise recursion;
- have an understanding of design principles for building a multiple-class object-oriented program;
- be able to implement exception handling techniques;
- be able to use files for persistent storage of data;
- be able to construct test harnesses for multiple-class programs;
- demonstrate an understanding of the range and purpose of modern tools to support the process of programming complex software systems.

Contact hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

For on campus students, workload commitments are:

- two-hour lecture;
- two-hour laboratory (requiring advance preparation); and
FIT2034 Computer programming 2 - Semester 1, 2010

- a minimum of 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.

You will need to allocate up to 5 hours per week in some weeks, for use of a computer, including time for discussion groups.

Unit relationships

Prerequisites

FIT1002 or CPE1001 or CSE1202 or GCO1811 or equivalent

Prohibitions

CPE1004, CSE1203, CSE2305, GCO1812, FIT1007
Teaching and learning method

Teaching approach

The curriculum is defined by what is covered in the Study Guide modules for each week. All students are expected to work through the study guide modules in preparation for that week's classes.

On campus students will have two classes per week: a lecture/workshop session and a practical lab session. The purpose of the first is to discuss the concepts of that week's curriculum. The purpose of the second is to enable you to apply the concepts by working on problems on a computer.

Assignments are designed to be attempted after you have completed all required readings and practical exercises. They are also likely to be another source of learning, although their primary purpose is for staff to assess how well you have progressed in meeting the learning objectives of the unit.

Discussion forums are provided as a place where you may ask questions about the content of the unit. You should also use these to clarify the work required in your assignments. They are checked at least twice per week, and sometimes even more often than that.

Students should spend approximately 8 hours per week outside of class for personal study every week, including time for programming on a computer and reading the discussion forums.

Timetable information

For information on timetabling for on-campus classes please refer to MUTTS, [http://mutts.monash.edu.au/MUTTS/](http://mutts.monash.edu.au/MUTTS/)

Tutorial allocation

On-campus students should register for tutorials/laboratories using the Allocate+ system: [http://allocate.its.monash.edu.au/](http://allocate.its.monash.edu.au/)

Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date*</th>
<th>Topic</th>
<th>Study guide</th>
<th>References/Readings</th>
<th>Key dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/03/10</td>
<td>Revising Java Concepts</td>
<td>1</td>
<td>Reges ch 1-5</td>
<td>No lab in Week 1</td>
</tr>
<tr>
<td>2</td>
<td>08/03/10</td>
<td>Object Orientation</td>
<td>2</td>
<td>Reges ch 8</td>
<td>Lab classes start this week</td>
</tr>
<tr>
<td>3</td>
<td>15/03/10</td>
<td>Association and Aggregation Relationships</td>
<td>3</td>
<td>Reges ch 7 and 10.1</td>
<td>Week 2 Exercise Due</td>
</tr>
<tr>
<td>4</td>
<td>22/03/10</td>
<td>Inheritance and Polymorphism</td>
<td>4</td>
<td>Reges ch 9</td>
<td>Week 3 Exercise Due</td>
</tr>
<tr>
<td>5</td>
<td>29/03/10</td>
<td>Interfaces and Abstract Classes</td>
<td>5</td>
<td>Reges ch 9</td>
<td>Week 4 Exercise Due</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mid semester break</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>12/04/10</td>
<td>File I/O and Exceptions</td>
<td>6</td>
<td>Reges ch 6 and 4.5</td>
<td>Week 5 Exercise Due</td>
</tr>
<tr>
<td></td>
<td>Date</td>
<td>Topic</td>
<td>Chapter</td>
<td>Assignment Due</td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>19/04/10</td>
<td>Abstract Data Types and the Java Collection Classes</td>
<td>7</td>
<td>Week 6 Exercise Due</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>26/04/10</td>
<td>Recursion</td>
<td>8</td>
<td>Week 7 Exercise Due</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>03/05/10</td>
<td>Algorithms for Searching and Sorting</td>
<td>9</td>
<td>Week 8 Exercise Due</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10/05/10</td>
<td>Event Handling and Graphical User Interfaces</td>
<td>10</td>
<td>Week 9 Exercise Due</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>17/05/10</td>
<td>Testing and Debugging</td>
<td>11</td>
<td>Week 10 Exercise Due</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>24/05/10</td>
<td>Program Design</td>
<td>12</td>
<td>Programming Assignment Due on Fri 28 May 2010</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>31/05/10</td>
<td>Revision</td>
<td>All</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.

**Improvements to this unit**

1. To improve the sequencing of certain topics.
2. To change the assignment weightage.
3. To focus on programming skills rather than the implementation of prototype features in all practical assignments. To align the assessment requirements with student's understanding of programming concepts rather than prototype features. The alignment will be done based on weekly learning objectives.
Unit Resources

Prescribed text(s) and readings

Prescribed Text:


Text books are available from the Monash University Book Shops. Availability from other suppliers cannot be assured. The Bookshop orders texts in specifically for this unit. You are advised to purchase or order your text book early.

Recommended text(s) and readings


Required software and/or hardware

Prescribed Software

You must have the Java 2 SE SDK version 1.5.0 (also called Java 5) or later installed on your computer. It can also be downloaded from the internet by going to http://java.sun.com/javase/downloads/index.jsp

Other Useful Software

BlueJ

Some locations will be using BlueJ. This also works on Macintosh computers. It can also be downloaded from http://www.bluej.org/download/download.html.

JCreator LE

This is an IDE which provides many useful compilation features. It only works on Windows operating systems. The smallish download can be obtained from http://www.jcreator.com/download.htm. Be sure to select the LE version 4.5 file, which is free (unless you want to pay for the more comprehensive version).

TortoiseSVN

This open-source software can be downloaded from: http://tortoisesvn.sourceforge.net/downloads. (Most users should download the very first file, the 32-bit msi file). There are also language-packs for languages other than english. This tool is explained in week 12 of the semester.

Equipment and consumables required or provided

On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook. You will need to allocate up to 10 hours per week for use of a computer, including time for newsgroups/discussion groups.
Study resources

Study resources we will provide for your study are:

- This *Unit Information Guide* outlining the administrative information for the unit
- Weekly Study Guides modules
- Weekly slides and sample programs used during lectures
- Weekly practical tasks and solutions
- Assignment specifications and solutions
- Additional electronic resources
- Discussion forums
- The FIT2034 web site on Moodle, where most of the above resources can be located
Assessment

Overview

Examination (3 hours): 60%; In-semester assessment: 40%

Faculty assessment policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit.

Assignments have a due date and a cutoff date. The due date is that time by which you are required to submit the assignment to receive the grade that it deserves. Submitting after the due date but before the cutoff date means that there will be a penalty applied to your result (typically, a drop in grade by one level). Submissions received after the cutoff date will receive 0 marks. The cutoff date is usually 1 week later than the due date. If you are given an extension, the extension applies to both the due date and the cutoff date.

Assignment tasks

Assignment coversheets

Assignment coversheets are available via "Student Forms" on the Faculty website: http://www.infotech.monash.edu.au/resources/student/forms/

You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

Assignment submission and return procedures, and assessment criteria will be specified with each assignment.

- Assignment task 1

  Title: Programming Assignment

  Description: You will be required to develop a multiple-class program which involves the use of concepts from modules 1 to 10.

  Weighting: 20%

  Due date: 28 May, 2009 at 11:59pm
Assignment task 2

Title: Lab Exercises
Description: Weekly exercises in the lab. The total number of exercises to be completed is 7. See the Unit Schedule table for the weekly exercises that will be assessed.
Weighting: 20%
Due date: Solution of exercise for the week will be due at the beginning of the following week's lab class.

Examination

- Weighting: 60%
  Length: 3 hours
  Type (open/closed book): closed book

See Appendix for End of semester special consideration / deferred exams process.

Due dates and extensions

Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Students requesting an extension for any assessment during semester (eg. Assignments, tests or presentations) are required to submit a Special Consideration application form (in-semester exam/assessment task), along with original copies of supporting documentation, directly to their lecturer within two working days before the assessment submission deadline. Lecturers will provide specific outcomes directly to students via email within 2 working days. The lecturer reserves the right to refuse late applications.

A copy of the email or other written communication of an extension must be attached to the assignment submission.

Refer to the Faculty Special consideration webpage or further details and to access application forms: http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html

Late assignment

Assignments received after the due date will be subject to a penalty of a drop in grade from what it is worth. Assignments received later than one week after the due date will not normally be accepted.

This policy is strict because comments or guidance will be given on assignments as they are returned, and sample solutions may also be published and distributed, after assignment marking or with the returned assignment.
Return dates

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.
Appendix

Please visit the following URL: http://www.infotech.monash.edu.au/units/appendix.html for further information about:

- Continuous improvement
- Unit evaluations
- Communication, participation and feedback
- Library access
- Monash University Studies Online (MUSO)
- Plagiarism, cheating and collusion
- Register of counselling about plagiarism
- Non-discriminatory language
- Students with disability
- End of semester special consideration / deferred exams