KIT107 PROGRAMMING

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University of Tasmania

Today

- MyLO
- Unit Outline
- Classes
- Resources
  - Books and Websites
  - Accounts and Proximity Cards

MyLO

- The University's Learning Management System is called MyLO
- The MyLO site for this unit contains:
  - PPT slides, assignments, lecture recordings, tutorial questions and answers, discussion forum, revision material, etc., and, the Unit Outline

Julian Dermoudy

Unit Outline

- The Unit Outline is a 'contract' between us and you
- We promise to deliver what's in there at the times advertised in there
- We don't intend to deviate from that promise
  - But if we must, we won't unless we consult with you and have majority support

Introduction

"This unit extends the students' knowledge and experience of programming. It introduces dynamic data structures, foundational collection abstract data types, and scientific and engineering computational algorithms and techniques. Programming is undertaken in C and topics include: references and pointers, memory management, self-referential data structures, abstract data types, and an introduction to algorithm complexity."

Prerequisites

- ***KXT101 Programming and Problem Solving*** **or**
- ***KIT101 Programming Fundamentals*** **or**
- ***KIT001 Programming Preparation*** **or**
- ***KIT103 Computational Science*** **or**
- **TCE Computer Science (*ITC315108* or *ITC315113*) or**
- **First year mathematics: *KMA1xx***

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Teaching Pattern

- **Lectures:**
  - **3 x 50 minutes each week for 13 weeks**
- **Tutorials:**
  - **1 x 50 minutes each week for 12 weeks**

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Learning Outcomes

- **On successful completion of this unit, you will be able to:**
  1. **Adapt…**
  2. **Select…**
  3. **Design…**

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Learning Outcomes

1. Adapt and apply techniques for scientific and engineering ICT applications
2. Select and effectively apply processes, methodologies, tools, and techniques to analyse, model, and develop computer programs
3. Design, implement, and evaluate an ICT program to meet desired needs.

Learning Outcomes

- You will also acquire attitudes needed by an ICT professional to:
  - be an effective team member
  - take initiative and work independently
  - communicate effectively
  - use abstraction and computational, creative and critical thinking to problem solve

Generic Graduate Attributes

1. Knowledge
2. Communication Skills
3. Problem-Solving Skills
4. Global Perspective
5. Social Responsibility

Assessment

- 40:60 Internal:Examination
- Internal:

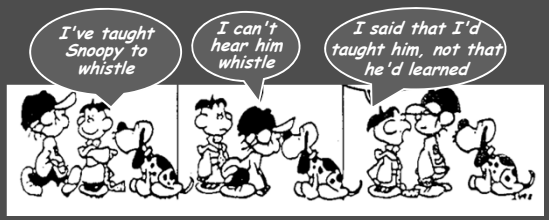
Component	Weight	Due Date
Short individual program	5%	19/3 (week 4)
Peer-marked pair-based program	15%	16/4 (week 8)
Pair-based program	20%	28/5 (week 13)

- Exam:
  - 3 hours, open-book

45% Rule

- Note, in KIT units:
  - the pass mark is 50% but
  - students must get at least 45% in the total internal and in the exam in order to be eligible to pass
  - we don't mark to a curve but some moderation/scaling is possible

My Task or Your Task?



— Charles M. Schultz

What Kind of Learner are You?

"I hear and I forget.
I see and I remember.
I do and I understand."

- Do you learn best by reading, by listening, by watching, by writing, by discussing, or by doing?

How Will You Engage?

- Lectures and Tutorials are the best opportunity for structured, supported, and interactive learning
  - They are about gaining understanding, and not simply knowledge transfer
  - Please attend as many lectures and tutorials as you can even though:
    - All Hobart lectures are recorded (video & audio)
    - All lecture slides, notes, and programs are on MyLO

Unit Structure

- Introduction
  - 1 lecture
- C Programming
  - 12 lectures, 3 tutorials
- Data Structures and Algorithms
  - 18 lectures, 6 tutorials
- Engineering and Scientific Applications
  - 8 lectures, 3 tutorials

Content

"C programming, references and pointers, printf and scanf, structures and unions, memory management, type conversions, bitwise operations, static variables, register variables, address arithmetic, single- and multi-dimensional arrays, procedural parameters, singly- and doubly-linked lists, linear collections (stacks, queues, priority queues, circular queues), non-linear collections (binary trees, search trees, general trees), Big O notation and simple time- and space-complexity determination and comparison, applications of scientific and engineering computation."

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Classes

- Lectures:
  - Monday 1 PM Arts Lecture Theatre
  - Tuesday 12 PM Centenary Lecture Theatre
  - Wednesday 11 AM Arts Lecture Theatre
- Tutorial/Practicals:
  - see School website
  - sign up for a tutorial before noon on Friday

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Resources

- Books and Websites:
  - None specifically — but any "C Programming" and "Data Structures in C" text books would be helpful
  - Many websites of relevance…

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Building, Lab, and Computer Access

- Proximity card
  - Get one if you want afterhours access
  - Bring it to our Help Desk (on level 3 of the Centenary Building)
- Username and password
  - Same username for 'central' and 'school' accounts but (initially) different passwords

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Building, Lab, and Computer Access

- We provide file servers for your work
  - Reachable off-campus
  - Backed up by us
  - File loss is not a reason for an extension
- LPS (or CAPS) account for printing in the labs
  - deposit money through School or elsewhere

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Software

- Visual Studio for C11
  - available in our labs and at `http://www.microsoft.com/en-au/download/details.aspx?id=40787`

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Contact Details

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  - **Email: Julian.Dermoudy@utas.edu.au**
  - **Telephone: 6226 2933**
  - **Office: Centenary 452**
  - **Consultation Hours:**
    - **Tuesday 2–4 PM**
    - **Wednesday 2–4 PM**
    - **(Some variability)**

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