ENGG1811 Computing for Engineers

Course Introduction

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- Assessment
- Avoiding Plagiarism
- Administration, lab locations
- Feedback from past sessions
- See the class home page
  www.cse.unsw.edu.au/~en1811
# Staff: Session 1 2017

<table>
<thead>
<tr>
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<th>Email</th>
<th>Phone</th>
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<tbody>
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- For general administrative questions, email en1811@cse.unsw.edu.au
- For info see the class home page [www.cse.unsw.edu.au/~en1811](http://www.cse.unsw.edu.au/~en1811)
Course Objectives

• What you should be able to do by the end of the semester:
  
  – use **spreadsheets** and their associated tools to solve small computational problems in Engineering, Science and Business [topic SS];
  
  – design and implement solutions to problems by writing **small programs** using a scripting language such as OpenOffice Basic or equivalent [topic BP];
  
  – use a **numerical computing environment** such as MATLAB® to analyse, model and visualise data and systems [topic NC]; and
  
  – understand a bit about **where the technology** is and might be going (so you can be better prepared to exploit it in your professional career) [topic IT]
Ways of Learning

• Lectures
  – slides released as PDFs
  – only effective if audience cooperates by maintaining silence
  – will try to add occasional interactive elements (bonuses for volunteers!)

• Labs
  – develops experience with using the problem-solving systems
  – tasks based on previous lecture material
  – has a small on-line assessment exercise based on very basic knowledge
  – fully supervised and assessed within the class, some self-assessment
  – must be ready to show (some) work 30 minutes before end

• Assignments
  – completed in own time, individual unless specified
  – fully develops skills, especially in programming
  – important exercise in time management
  – submitted on-line, fully tested and objectively assessed
  – second assignment is peer-assessed using objective criteria
  – late penalty is 15% per day off the maximum available mark
Ways of Learning, continued

• Revision lab classes
  – offered once or twice mid-semester, covering programming material
  – focus is on absolutely minimum level of knowledge to pass

• Consultation
  – lecturer has specific times, or see after class
  – lots more scheduled prior to assignment due dates

• Course forum
  – general, lecture, labs and assignment-specific
  – used for assignment-related questions and answers
  – tutors and lecturer will post and reply
  – strongly encouraged to participate
  – usual etiquette:
    • respect for participants' opinions
    • please check before starting a topic that it's genuinely new
    • no assignment solutions (tiny fragment is OK to ask a question though)
The proposed lecture schedule is:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeks 1 to 3</td>
<td>SS: Spreadsheets and Data Analysis</td>
</tr>
<tr>
<td>Weeks 4 to 7</td>
<td>BP: Problem Solving and Programming (OpenOffice Basic)</td>
</tr>
<tr>
<td>Weeks 8 to 11</td>
<td>NC: Numerical Computing, modelling and visualisation using Matlab</td>
</tr>
<tr>
<td>Weeks 11,12</td>
<td>IT: Introduction to some of the current and emerging Information Technologies</td>
</tr>
</tbody>
</table>

- There is a one week break after week 4
Assessment

• Labs (weeks 2 to 13)
  – each lab has an on-line assessment (1 mark) and tutor’s assessment (marked out of 3)
  – best 10 marks for each category taken of potential 12
  – contributes 10% of total

• Assignments
  – assign 1 due w9 (OOBasic program), 7% (but see below)
  – assign 2 due w11 (Matlab program), 8% (but see below)

• Mid-Semester Test
  – during week 5 lab, 45 mins, practical, 15%
  – covers first 3 weeks' material (labs 2 to 4)

• Final written exam
  – 3 parts: multiple choice, OOBasic, Matlab
  – 60% of overall assessment, minimum competency 33.3% (20/60)
  – Non-linear formula applied if min exam mark not reached (details later)
  – 18 marks of the 60 in the final exam are directly related to the two assignments, assessing whether you really learned sufficient from them
## Curriculum/Assessment Matrix

<table>
<thead>
<tr>
<th>Topic</th>
<th>SS</th>
<th>BP</th>
<th>NC</th>
<th>IT</th>
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<tbody>
<tr>
<td>midterm</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>labs</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>assign1</td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>assign2</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Exam - assigns</td>
<td></td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Exam - other</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL</td>
<td>28</td>
<td>30</td>
<td>35</td>
<td>7</td>
</tr>
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One possible visualisation of the data (Matlab’s bar3 function)
Avoiding Plagiarism

• Academic honesty
  – everything submitted for assessment must be your own work
  – acknowledge all sources unless obvious

• Assignments 1 and 2
  – program code must be developed alone [unless explicit groupwork]
  – discussion about solutions OK, indeed encouraged
  – imperfect but honest attempt will still attract fair marks
  – exam-related question carries more weight than the assignment, and will only be solvable if attempted the assignment

• Anti-plagiarism measures
  – start early and get help if you're struggling
  – we usually run sophisticated similarity analysis software
  – mark reduction of up to 100% applies to non-original submissions

• Reference site
  – https://student.unsw.edu.au/plagiarism
Administration

• Changing classes
  – myUNSW used for all changes if possible
  – places are limited for this semester
  – intractable timetable clash is the only reason for squeezing into a full class
  – email the class account en1811@cse.unsw.edu.au
Feedback from past sessions [our emphasis]

• **Best bits**
  - “Very **practical** and **interesting** course.”
  - “The **labs** helped dramatically to cement the material covered in lectures.”
  - “Lots of **practical** tasks/problems with a **real-world** application/basis, with a strong focus on providing **useful** and practical **knowledge**.”
  - “it **improves** our thinking”,
  - “It was **interactive**, engaging and interesting.”, “**online examples** shown”

• **Things that could be improved**
  - “**Explaining** better to students who have never even used excel”
  - “more control by telling others to keep quiet in the lecture theatre”, “**too much noise from other student[s]**”
  - “more coverage of the **basic aspects of vba** programming. ...most students are being exposed to vba for the first time.”
  - “assignemnt was too difficult”, “**encourage** more to do more pre lab work”
More on the Class Web page

• The class home page is the source of all official information about ENGG1811. Its contents include
  – Notices, updated frequently (keep a close eye on them).
  – The Course Outline (near the top of the left sidebar) which contains formal details about the course.
  – CourseWork: lecture notes and working documents, lab exercises and assignment requirements.
  – Help: Consultation schedule and course forum link.
  – Resources: online documentation, tutorial material and lecture recordings.
  – Timetable and lab class roll.
  – Assessment records and assignment submission/collection.
  – Staff and policies.

• The class web page (in case you missed it) is still at www.cse.unsw.edu.au/~en1811
Checklist

To start this course off on the right foot, make sure you have done all of the following by the end of week 1.

- **Enrolled** in the course properly (with a lab class)
- Found out **where the labs are**
- Installed OpenOffice 4.1.2 on your own computer (strongly recommended)
- Had a go at the **first lab** (lab 02) if you have OpenOffice Calc
  - Excel solutions might convert to OO Calc but no guarantees
  - The labs and midterm will use OO Calc so you should get used to it
  - Recycling solutions from previous semesters gets you no (or negative!) marks
- Dropped into the course forum, maybe posted a comment
- Considered buying the main **reference book** (recommended)
  - not used until week 8 so no hurry

Class home page (yet again): www.cse.unsw.edu.au/~en1811