

ENGG1811 Computing for Engineers

Course Introduction

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- See the class home page

www.cse.unsw.edu.au/~en1811

Staff: Session 1 2017

Staff Name	Role	Email	Phone
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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

This is
a **tilde**

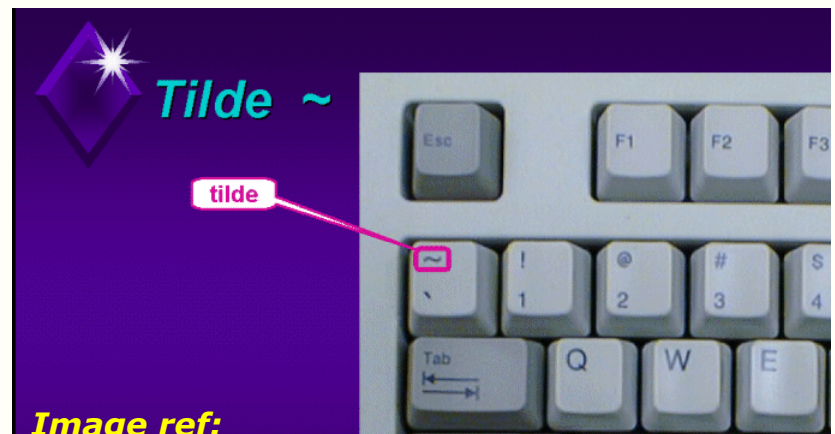


Image ref:

<http://www.ctdlc.org/remediation/2-Type/images/tilde.gif>

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)

Lecture Schedule

The proposed lecture schedule is:

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

- There is a one week break after week 4

Assessment

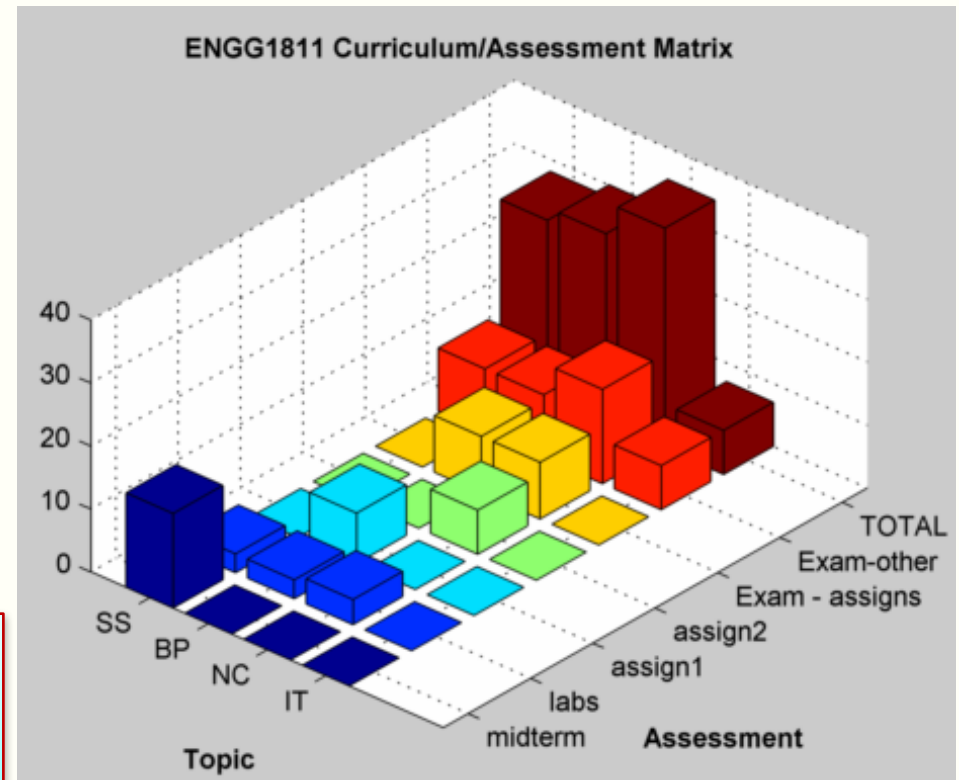
- Labs (weeks 2 to 13)
 - each lab has an on-line assessment (1 mark) and tutor's assessment (marked out of 3)
 - best 10 marks for each category taken of potential 12
 - contributes **10%** of total
- Assignments
 - assign 1 due w9 (OOBasic program), **7%** (but see below)
 - assign 2 due w11 (Matlab 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

Topic	SS	BP	NC	IT
midterm	15			
labs	3	3	4	
assign1		8		
assign2			7	
Exam - assigns		9	9	
Exam - other	10	10	15	7
TOTAL	28	30	35	7

Tabulated data representation

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.”
- “assignment 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