Lecture 1-1
Introduction

Semester 1, 2017
School of Information Technologies
The University of Sydney, Australia

sydney.edu.au/engineering/it/courses/engg1801

Jason Chan
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Most important thing in ENGG1801

• **You, the students!**
• This course is really designed to make **you** as happy as possible! 😊

• ENGG1801 Engineering Computing is by far the most popular unit of study of the Faculty of Engineering and IT: **1000+ students!**
## Students in ENGG1801

<table>
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<tr>
<th>Country</th>
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<td>Australia, incl.</td>
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<td>Torres Strait Islander</td>
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<td>Austria</td>
<td>Indonesia</td>
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<td>Mauritius</td>
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<td>Czech Republic</td>
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<td>Equador</td>
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<td>France</td>
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<td>United Arab Emirates</td>
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<td>Germany</td>
<td>New Zealand</td>
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<td>Hong Kong</td>
<td>Norway</td>
<td>Venezuela</td>
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<tr>
<td>India</td>
<td>Oman</td>
<td>Vietnam</td>
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</tbody>
</table>
### Students in ENGG1801

**Students doing different degrees:**

<table>
<thead>
<tr>
<th>Degree 1</th>
<th>Degree 2</th>
<th>Degree 3</th>
<th>Degree 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Design Computing</td>
<td>B Engineering (Electrical)</td>
<td>B Engineering (Mechatronic)</td>
<td>B Information Technology &amp; B Arts</td>
</tr>
<tr>
<td>B Design in Architecture</td>
<td>B Engineering (Electrical (Bioelectronics))</td>
<td>B Engineering (Software)</td>
<td>B Information Technology &amp; B Medical Science</td>
</tr>
<tr>
<td>B Engineering (Aeronautical)</td>
<td>B Engineering (Electrical (Computer))</td>
<td>B Engineering &amp; B Science</td>
<td>B Information Technology &amp; B Science</td>
</tr>
<tr>
<td>B Engineering (Aeronautical (Space))</td>
<td>B Engineering (Electrical (Power))</td>
<td>B Engineering &amp; B Arts</td>
<td>B Engineering &amp; B Commerce</td>
</tr>
<tr>
<td>B Engineering (Chemical &amp; Biomolecular)</td>
<td>B Engineering (Electrical (Telecommunications))</td>
<td>B Engineering &amp; B Laws</td>
<td>B Information Technology &amp; B Commerce</td>
</tr>
<tr>
<td>B Engineering (Civil)</td>
<td>B Engineering (Flexible First Year)</td>
<td>B Engineering &amp; B Medical Science</td>
<td>B Project Management (Built Environment)</td>
</tr>
<tr>
<td>B Engineering (Civil (Construction))</td>
<td>B Engineering (Mechanical)</td>
<td>B Information Technology</td>
<td>B Project Management (Civil Engineering Science)</td>
</tr>
<tr>
<td>B Engineering (Civil (Geotechnical))</td>
<td>B Engineering (Mechanical (Biomedical))</td>
<td>B Computer Science &amp; Technology</td>
<td>B Project Management (Software Engineering Science)</td>
</tr>
<tr>
<td>B Engineering (Civil (Environmental))</td>
<td>B Engineering (Mechanical (Space))</td>
<td>B Computer Science &amp; Technology (Advanced)</td>
<td>B Engineering &amp; B Project Management</td>
</tr>
<tr>
<td>B Engineering (Civil (Structures))</td>
<td>B Engineering (Mechatronic)</td>
<td>B Engineering &amp; B Design Architecture (Civil)</td>
<td>B Engineering &amp; B Project Management (Electrical(Telecommunications))</td>
</tr>
</tbody>
</table>
Students in ENGG1801

• Students with different experiences:
  – 1st year students, just out of high school
  – Postgraduate students in ENGG9801

• Students with different computing experience:
  – Complete beginners
  – Programming enthusiasts

• We design and run this course to make everyone as happy as possible!
Let me introduce myself...

• Dr Jason Chan (please call me “Jason”)
• I completed all my tertiary studies at The University of Sydney:
  – B Science (1st class Honours)
  – PhD Computer Science (Machine Learning)
Let me introduce myself…

• Studied undergraduate courses:
  – 5 yrs of Computer Science (IT)
  – 3 yrs of Electrical / Computer Engineering
  – 2 yrs of Physics
  – 2 yrs of Mathematics
Let me introduce myself…

• Selected to be a tutor for 1st year programming courses for 9 semesters
• Then I became a lecturer
  – Mostly in 1st year programming courses
Why students ♥ ENGG1801

- Creativity / new thinking / fun / different to other courses
- Problem solving and understanding, not memorization
- Practical benefit after just 1 semester
- Helps you in your future uni courses
- Skills are useful in any career
- Great value: only 4 hours of classes per week for 6 credit points
What previous students said

- “The course was different to anything that I ever did before and it was fun”
- “Realistic examples shows relevance of unit of study to my degree and career”
- “Favourite subject due to large amount of practical applications of problem solving”
- “Very engaging and interesting activities”
What previous students said (2)

• “The unit of study is very well run and at first I wasn’t sure whether I would like it, but now it is probably my favourite subject”

• “I really enjoyed how the focus of the unit is not on remembering the material, but being able to understand and use the material creatively to solve problems”

• “I really enjoyed the unit of study, it was much more immediately applicable than my other courses”
• “Computer programming has always [been] on my list of things I’d like to learn in my life”
• “The ability of Matlab and Excel to perform numerical analysis I can imagine being invaluable to engineering”
• “Would do it again for sure”
Unit of Study Survey

- “Q10: Overall, I was satisfied with the quality of this unit of study”
- 87% agree or strongly agree*
- Only 3.3% disagree or strongly disagree

* Results from s1, 2016; 85% (in 2015), 85% (2014), 88% (2013), 87% (2012)
What will I learn?

• How to organize data to present and understand it better using a spreadsheet (Excel)
• How to tell the computer exactly what to do (programming) to solve a problem using a programming language (Matlab)
• Think creatively and solve problems
• General understanding of how to use computers to solve problems
Am I good enough to do this?

- Congratulations – You have already qualified into your degree at this university!
- So you are definitely good enough to get good results in this course
- Virtually no previous computing experience is necessary
You can do it!

• “It is really interesting! I started out being completely afraid of programming and now I love it”
• “I found the programming part really enjoyable, I’ve never actually programmed anything before so I was worried, but it is really fun and interesting. It’s also a challenge, involving a lot of thinking which I liked”
• “Despite dreading this unit before I came to uni, learning to program has been very rewarding, entertaining and fun. I learnt something that will stay with me for years to come.”
You can do it!

• “Learning to solve problems using a computer, using logic to solve problems, coding for a computer – I found all of these things very enjoyable as I had not learned anything like this before”

• “I knew nothing about coding when I started, and now I am sitting in the top 20 [out of 800+] students”

• “I find computing to be very interesting now, even though I did struggle at first”
You can do it!

• “Made me understand how to use a computer because I really did not like computers at the beginning of the course”

• “I strongly believe that programming does not require you to be a genius to learn. I was lucky to have great tutors and strong interest in the area, which made it easy to want to learn”

[Student who came equal 1\textsuperscript{st} out of 800+ students; had no previous programming experience]
Lectures

- Attend one lecture on Tuesday AND one lecture on Wednesday
- We go through material so that you understand what to do in the labs
- I’m happy to answer any of your questions immediately after each lecture (please, not during or before)
Lectures

• You cannot learn just by watching, you must also do

• So lectures cover easier material, labs cover harder material

• You must use lectures and labs together to do well in this course; cannot use just lectures or just labs
  – You will have to do some work in your own time
Lectures

• “Jason was very clear in his explanations so that there was almost no chance of misunderstanding or going away having no idea what the lecture was about. Overall the Computer Engineering lectures were some of the best that I’ve been to in regards to helping me to learn effectively”

• “Great subject, explained in a perfect way so to be almost impossible to fail if you had followed the lectures; if all courses would have been like this one!”
Lectures

• “I never felt that a concept was skipped over or only touched upon then was examined, everything important was gone over many times”

• “His explanations were very clear and he was an inspiration to want to do well in the course. What I really appreciated was how he went to great lengths to understand what students find difficult. He would then teach by exposing these difficulties and misconceptions”

• “The lecture notes have to be some of the most comprehensive I’ve see in my 3 years of university study”
Lectures

• “Thanks to the inspiring and energetic way that you conducted each and every lecture, I was motivated to actually come to every lecture despite the fact that you posted the lecture notes and audio recordings on the website. I think this definitely had a positive impact on my result in this subject, but it also helped me developed a keen interest in programming – something I really did not expect to come from this UoS [Unit of Study]”
(A student who scored a High Distinction)
Labs (Tutorials)

- 2 hours of labs each week (weeks 1-13)
- Lab exercises are similar in difficulty and style to the Lab Exams and Final Exam
- Many Q’s are given to you in the lab, but your tutor will not cover all of them
  - They’re for you to do in your own time
Labs (Tutorials)

- “Most productive tutorials out of any of my subjects”
- “Diverse variety of examples without repetition kept the tutorials interesting and worthwhile”
- “The tutorials actually help you to learn rather than being a waste of two hours”
- “After each tutorial, I always felt as if I had learnt something valuable and really understood the material, thanks to the excellent tutors (I attended a couple of different classes, and found that the quality of tutors was excellent across the board)”
Labs (Tutorials)

• You are guaranteed a computer in the lab that you are enrolled in
• You may attend extra labs if you need to (but no computer is guaranteed for you)
• If you use your own laptop with Excel / Matlab, then you can attend any lab
Labs (Tutorials)

• **To change your enrolled lab:**
  – **During week 1:**
    You can change your timetable online at Sydney Student; alternatively, go to Student Center (Level 3, Jane Foss Russell Building)
Labs (Tutorials)

- **To change your enrolled lab:**
  - **Week 2 and onwards:**
    - Specific instructions on how to do this will be on the course website from Monday week 2 onwards
    - Requests to ENGG1801 staff in week 1 will be ignored; we do not have control of timetable in week 1; see previous slide

- Only **one** change of enrolled lab allowed
- Cannot change enrolled lab for lab exam once previous weekend has begun
Labs (Tutorials)

- Students who are late to many labs, or miss many labs, may be automatically moved to another lab
  - When this occurs, an email will be sent to your uni email
### Labs (Tutorials)

- **Full course timetable at course website:**
  sydney.edu.au/engineering/it/courses/engg1801

<table>
<thead>
<tr>
<th>Time</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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**ENGG1801 Engineering Computing**

*Jason Chan*
“Q1: Overall, I was satisfied with the quality of teaching by the teacher(s)”

92% agree or strongly agree*

Only 2% disagree or strongly disagree

* Results from s1, 2016; 91% (in 2015), 92% (2014), 91% (2013), 90% (2012)
Tutors

• We have selected the very best tutors!
• Tutors are responsible for:
  – Helping develop your practical skills by demonstrating how they solve some of the lab exercises
  – Helping guide you through the lab work and let you finish off the exercises
  – Answering some of your Q’s
• Their main job is to help you learn on your own to become independent
## Assessment

<table>
<thead>
<tr>
<th></th>
<th>Marks</th>
<th>Overall Value</th>
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<tbody>
<tr>
<td>Lab Participation</td>
<td>10 marks</td>
<td>5%</td>
</tr>
<tr>
<td>Lab Exam 1</td>
<td>10 marks</td>
<td>5%</td>
</tr>
<tr>
<td>Lab Exam 2</td>
<td>40 marks</td>
<td>20%</td>
</tr>
<tr>
<td>Lab Exam 3</td>
<td>40 marks</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100 marks</td>
<td>50%</td>
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</table>

• “The lab exercises, project and lab exam were just the right level of difficulty – difficult, but easy to solve once you got your head around the problem”
Assessment

• To pass ENGG1801, you need all 3:
  – At least 50% (100 marks out of 200) overall\(^1\)
  – At least 40% (40 marks out of 100) in all assessments (excluding final exam) when added together
  – At least 40% (40 marks out of 100) in final exam\(^2\)

• \(^1\) A requirement of all University of Sydney units of study
• \(^2\) A requirement of all School of IT units of study
Lab Participation (5% in total)

- Each lab worth 1 mark (0.5%) each
  - Except weeks with a Lab Exam
    (weeks 3, 8 and 13)
Lab Participation (5% in total)

- Your mark is only awarded if:
  - You write sufficient comments in your code
  - You either:
    - Make a decent effort at the exercises OR
    - Complete all exercises in the lab
      (then you can leave early)
      - If you do some exercises beforehand,
        then you cannot leave early and get the mark
  - You arrive on time and don’t leave early
  - You sign the roll next to your name
Lab Participation (5% in total)

- You can attend any lab during the week (at any time, with any tutor) to score your participation mark
  - Please do *not* ask or interrupt the tutor, just take a seat
Lab Participation (5% in total)

- However, a computer is only guaranteed for you in the lab that you are enrolled in
  - You must arrive within the first 5 mins of the lab, otherwise you forfeit your seat
  - Reserving of seats is not allowed; you must sit on your seat
- You can guarantee your own seat if you bring your own laptop with Excel / Matlab
Lab Participation (5% in total)

- Lab participation marks are not awarded after the week is over; e.g. Lab participation marks for Lab 1 is only given in week 1
  - If you don’t attend the lab that you’re enrolled in, and you can’t find a computer in another lab, then you don’t get the participation mark
Lab Exams (45% in total)

• Open-book lab exams
  – Handwritten and printed notes, and your own files (created by you this semester) allowed
  – Access to course website allowed
  – Tablets, laptops, etc. *not* allowed

• “Lab exam directly allowed me to use what I had learnt this semester in this course”

• “Was a very direct and relevant way of assessing programming ability”
Lab Exams (45% in total)

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Duration (mins)</th>
<th>Week</th>
<th>Material covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Exam 1</td>
<td>5%</td>
<td>60</td>
<td>3</td>
<td>weeks 1-2</td>
</tr>
<tr>
<td>Lab Exam 2</td>
<td>20%</td>
<td>90</td>
<td>8</td>
<td>weeks 4-7*</td>
</tr>
<tr>
<td>Lab Exam 3</td>
<td>20%</td>
<td>90</td>
<td>13</td>
<td>weeks 8-13*</td>
</tr>
</tbody>
</table>

* Theory from earlier weeks is assumed knowledge, but the lab exam Q’s will be focusing on the material in the listed weeks

• Lab exams will take place in the lab that you are enrolled in
Final Exam (50%)

- During the exam period (19-30 June)
- 2 hour, “pen and paper” exam
  - A double-sided A4 page of notes handwritten by you (no photocopy; no computer print out; only handwritten original) allowed
  - Non-electronic dictionary allowed
- Q’s will be similar in style and difficulty as Q’s in the labs
- Sample exam + solutions will be available
Wow, can I really do this?

- Virtually no previous computing experience necessary
- Just need to understand and solve problems in practice, not memorize
  - You can write your own notes
- Concepts in this course can be understood by everyone
- Yes, you can definitely do this course
What you get

• Lecture notes on up-to-date website
• Recorded lectures
• The ability to change labs (if available)
• Can attend more than 1 lab if necessary
• Labs open 8am – 9pm weekdays
• Sample solutions with full explanations for all exercises at end of each week
• Sample exams with sample solutions
What is allowed

• Relaxed labs with no pressure, and good quality demo’s from tutors
• Talking and explaining with other students about lab exercises and solutions
• Bringing a double-sided A4 page of handwritten notes in the exam
• Using lecture notes, your own notes, your own code that you’ve prepared beforehand, sample solutions
NOT allowed: Distractions in Labs

• No distractions in labs
  (includes mobile phones, other course work, unrelated websites)
  – Previously, students who check their phones or Facebook, etc. during labs are very likely to fail the course
  – Also distracts many other students
  – Phones must be on silent, no vibrate
  – If you must use the phone, you can go outside of the room to use it
What is NOT allowed: Plagiarism

• No plagiarism / academic dishonesty

  Do NOT give to anyone
  or accept from anyone
  for any reason
  any Excel or Matlab files

• If another student has your Excel or Matlab file, even if they don’t use it or they modify it, this is still academic dishonesty
What is NOT allowed: Plagiarism

• Also:

  Do NOT use code from previous semesters, even if you wrote it

• Even if you modify it in this semester, it still counts as academic dishonesty

What is NOT allowed: Plagiarism

• Plagiarism will absolutely NOT be tolerated

Students who plagiarize will be caught and dealt with

– Forfeit all marks in assessment or entire subject
– Permanent official record
– Expulsion from university
– Cancellation of student visa

Why students ♥ Excel

• The Excel spreadsheet program is virtually everywhere
• Excellent for learning spreadsheets
  – Intuitive to use
  – Can do very useful and powerful things very quickly and easily
  – Similar to other spreadsheet programs
  – Lots of help available (internet, books, etc.)
• Disadvantages are not felt by students
Why students ♥ Matlab

• The Matlab programming language is very popular in industry, research, education
• Excellent for learning programming
  – Avoids ugly and confusing features
  – Saves a lot of work and very easy to deal with matrices, complex mathematical operations, plotting of graphs
  – Syntax similar to other important languages
  – Lots of help available (internet, books, etc.)
• Disadvantages are not felt by students
Matlab in other units of study

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>AERO2703</td>
<td>Aerospace Technology 1</td>
</tr>
<tr>
<td>AERO2705</td>
<td>Space Engineering 1</td>
</tr>
<tr>
<td>AERO3260</td>
<td>Aerodynamics 1</td>
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<td>AERO3460</td>
<td>Aerospace Design 1</td>
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<td>AERO3560</td>
<td>Flight Mechanics 1</td>
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<td>AERO3760</td>
<td>Space Engineering 2</td>
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<td>AERO4360</td>
<td>Aerospace Structures 2</td>
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<td>Dynamics 1</td>
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<td>AMME3500</td>
<td>System Dynamics &amp; Control</td>
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<td>AMME4210</td>
<td>Computational Fluid Dynamics</td>
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<td>AMME4500</td>
<td>Guidance &amp; Control</td>
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<tr>
<td>CHNG5002</td>
<td>Environment Decision Making</td>
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<tr>
<td>COSC1001</td>
<td>Computational Science in Matlab</td>
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<td>ELEC3204</td>
<td>Power Electronics &amp; Applications</td>
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<td>ELEC3802</td>
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<td>MECH3361</td>
<td>Mechanics of Solids 2</td>
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<tr>
<td>MECH4601</td>
<td>Professional Engineering 2</td>
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<tr>
<td>MECH4720</td>
<td>Sensors &amp; Signals</td>
</tr>
<tr>
<td>MATH2063</td>
<td>Mathematical Computing &amp; Nonlinear Systems</td>
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<tr>
<td>MATH3063</td>
<td>Differential Equations &amp; Biomathematics</td>
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<tr>
<td>MTRX1701</td>
<td>Mechatronics Engineering Introductory</td>
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<tr>
<td>MTRX1702</td>
<td>Mechatronics 1</td>
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<tr>
<td>PHYS1901</td>
<td>Physics 1A (Advanced)</td>
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<tr>
<td>PHYS1902</td>
<td>Physics 1B (Advanced)</td>
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<tr>
<td>PHYS2011</td>
<td>Physics 2A</td>
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<td>PHYS2012</td>
<td>Physics 2B</td>
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<td>Honours Projects</td>
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<td>PhD Theses</td>
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Matlab in other units of study

• “Matlab has infiltrated every subject I am doing – I’ve even used it in maths!”
• “I’ve already had to write a massive program in Mechanical engineering… without these skills I’d be screwed”
• “Almost all of my subjects used Matlab in some form or another, so it was very useful”
• “By using Matlab and Excel during this unit of study, I became able to solve different problems I came across in different units of studies I’m taking such as math and physics”
Other IT units of study

- There are other units of study at the 1st year level run by the School of IT
  - INFO1003 Foundations of IT
  - INFO1103 Introduction to Programming
  - INFO1903 Informatics (Advanced)
- Some students do 2 or more at the same time – that is fine
- Each unit teaches different things
INFO1003 Foundations of IT

• Teaches the basic but important and practical uses of computers to solve a variety of common problems
• Concentrates on what typical computer users need to know
• Some topics:
  – Organizing data with spreadsheets, databases
  – Using internet search engines
  – Building webpages using HTML, Javascript
INFO1103 Introduction to Programming

• Teaches you how to program in a more powerful, object-oriented programming language

• Concentrates on what a full-time software developer needs to know

• Some topics:
  – Object-oriented programming with Java
  – Software development techniques (e.g. unit testing, using API’s, more complex data structures)

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INFO1903 Informatics (Advanced)

- Concentrates on how to handle very large amounts of data, and solving typical research problems dealing with that data
- This course is for advanced students – very high workload and very fast pace
- Students without programming experience must be committed and learn quickly
- Some topics:
  - Programming with Python
• We assume you:
  – Know nothing about computers, except how a keyboard and mouse works
  – Have basic common-sense logic
  – Can do basic engineering maths
• By the end of this semester, you should be able to use computers to solve common but substantial engineering and scientific problems on your own
Course Website

sydney.edu.au/engineering/it/courses/engg1801

- Important announcements
- Weekly timetable of all lectures and labs
- Lecture notes
- Lab exercises
- Sample solutions
- Sample exams

• “Having all the resources I need online made studying this subject a much more pleasant experience than I’ve had in my other subjects”
j.chan@sydney.edu.au

– Ask any Q about ENGG1801
– I guarantee to respond to every email (that asks a Q) within 24 hrs
– Please use appropriate subject headers
– The more specific you can be, the better I can help you
– Don’t write many lines of code in emails; instead, attach your code (.m files) to email
Course Email

• “All my questions were answered quickly and in a detailed fashion!”
• “Response by email was quick and helpful”
• “Every email I sent out, I got a reply. A first for all my classes”
Textbook

• Lecture notes are totally sufficient on their own
• If you really want a reference book, then we suggest:
  – Engineering Computation with Matlab (David M. Smith)
Matlab Availability

• *Matlab* can be installed on your computer for **free:**
  

• **If problems with installation:** see Help Point at Carslaw Learning Hub – West

• Do this **immediately** – your time will be more valuable from week 4 onwards

• Matlab will be used throughout your undergraduate and postgraduate studies
Matlab Availability

• >6GB download
• To download, you either need to be on campus, or use VPN to connect to the uni’s network with your unikey
  – Go to course website, click on Resources, and download VPN
• After download, you need a program to open the .iso file, such as Daemon Tools:
  
  http://www.daemon-tools.cc/downloads

  – There is a free version; scroll down the page
Matlab Availability

- School of IT, Rooms 114-118 (only postgrad logins work in big room, so use the smaller rooms)
- Link Building, Rooms 122, 222 North and 222 South
- Madsen B’ding, LG31-32
Matlab Availability

• Matlab is also available on the machines run by your school:
  – School of Aerospace, Mechanical & Mechatronic Engineering
  – School of Chemical & Biomedical Engineering
  – School of Civil Engineering
  – School of Electrical & Information Engineering
Matlab Availability

• If you don’t have Matlab installed (e.g. Learning Hubs):
  – Go to https://byod.sydney.edu.au (use Internet Explorer or Firefox; this will not work with Google Chrome or Microsoft Edge)
  – Login using your unikey and password
  – If you have to install a small program on your computer, then click on Connect

Continued next slide →
Matlab Availability

– Click on

– Click on  
  → Permit all access (if asked)

– When asked where to save, click  
  → Permit all access (if asked), then click on your computer on the right of the window, and select a location on your computer

• This is important, otherwise your work will not be saved on your computer (even though it says “This PC”), and you will lose your work when you lose internet connection
Install VPN

• If you install Matlab on your computer, or you want to use Matlab – Citrix, you will need VPN to connect to uni network (unless already connected to the uni network, such as on any uni computer):
  – Go to course website, click on Resources, then **download VPN** and follow instructions
  – Each time you start your computer and want to connect, you need to open VPN
Special Consideration

• If a student cannot finish an assessment (illness, misadventure), they can apply for special consideration

http://sydney.edu.au/special-consideration

– You must submit the application within 3 days
– Submit as early as possible, or well before effected dates; many applications are rejected
– You will need proof (certificate, etc.)
– See above link for all details
Special Consideration

• If you are ill, or some other serious inconvenience has occurred, and you want to apply for special consideration, then don’t sit the lab exam / final exam
  – Once you have sat the exam, there’s very little that can be done, even if you apply for special consideration
Special Consideration

• If approved, an alternative assessment or mark will be given to you

• The history of performance of students applying for special consideration is not very good…

• It is your responsibility to check your uni email regularly; this is where info about special considerations results are sent to
  – May contain alternate assessment details
## Semester 1, 2017 Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture topics</th>
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**Student vacation (stuvac)**

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Jason Chan
Will I pass or fail?

• The most accurate way to tell if a student will pass or fail is:

  Students who pass use thinking to understand the material

  Students who fail only copy the tutor and sample solutions
Will I pass or fail?

- When you experience problems: Do you just sit there and **copy** the tutor? Or do you try to **understand** why you are getting the error that you are getting?
Will I pass or fail?

- Sample solutions to all lab exercises, with comments, will be up at end of each week.
- You are going to get the sample solutions anyway!
- So do not attend lab just to copy the tutor!
- You should understand how the tutor thinks and use lecture notes and previous exercises to get the solution.
Will I pass or fail?

• **Warning about sample solutions:** You cannot just look at sample solutions and expect to do Q’s in lab exams.

• You must try to do Q’s in labs first, *before* seeing tutor’s demo or looking at sample solutions.

• Then you can compare and improve:
  – How you thought *vs* how tutor thinks
  – How you did it *vs* how sample solutions did it
How to Perform in ENGG1801

• **No more excuses:**
  – “I have no programming / computing experience”
  – The following all had absolutely no programming experience*:
    • 82% of all students
    • 81% of all students who at least passed
    • 78% of HD students
    • Top 7 students

* Surveyed in semester 1, 2016; previous 2 years surveyed and similar
How to Perform in ENGG1801

• No more excuses:
  – “I’m an international student”
  – The following were international students*:
    • 45% of all students
    • 44% of all students who at least passed
    • 38% of HD & D students
      – 81% of these students were from countries where English is not a main language

* Surveyed in semester 1, 2016; previous 2 years surveyed and similar
How to Perform in ENGG1801

• No more excuses:
  – “I’m from a different degree / major / background”
    • Almost every degree has been represented by HD students
How to Perform in ENGG1801

• No more excuses:
  – “I’m a girl / female”
    • 29% of all students* were female
    • 27% of HD students* were female

* Surveyed in semester 1, 2016; previous 2 years surveyed and similar
How to Perform in ENGG1801

• No more excuses:
  – “I’m too young / old”
    • All sorts of various ages have been represented by HD students

• So what does performance depend on? Let’s meet some students…
Student 1

- Was initially “scared” of computers, only very basic computing experience
- No programming experience at all
- International student, from a country where English is not a main language
- Very confused in the first few weeks, asked a lot of “simple” Q’s
Student 1

- Worked hard, enjoyed learning and attended every lab
- Made some stupid mistakes, but learned from them by understanding what was wrong
- By end of semester, was able to rely more on their own logic and problem solving skills, experience and lecture notes
* Different slides may have different distributions because different students took the course in different years

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Student 2

- Attended every lab, really wanted to pass
- Struggled, and had friends who were also struggling, so thought they should be ok
- Used many excuses on previous slides
- Just waited for tutor to demo solution before copying the tutor
- Did not try to think, understand, look in lecture notes, or do exercises on their own
Student 2

27 F
Student 3

- No programming experience
- Did almost all lab work by themselves during lab by using lecture notes
- Did all Q’s and only left when all finished
- Experimented with what they learned in lectures by playing around with it
- Only asked Q’s after looking in lecture notes and thinking on their own first
Student 3

98 HD
How to Perform in ENGG1801

• Your success in this course really depends on 1 thing:

Your Attitude

• Have fun, but take it seriously
• Show up on time
• Make mistakes, but learn from them
• Stop making excuses
How to Perform in ENGG1801

• You do not have to memorize the lecture notes, but you must know what is there
  – Lab Exams are open book, and Final Exam is almost open book, but 25% of students failed!
  – They failed because they didn’t know how to use the lecture notes, lab sample solutions
  – They failed because they copy instead of understand
How to Perform in ENGG1801

• Master weeks 4-7 (Part 2: Matlab basics)
  – This is where you pass or fail the course
  – You must master it at that time, not later
  – Students who wait until after week 7 almost always fail
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Jason Chan
Summary

• Is this a hard or easy course? That depends on you…
• Do you like to think, learn, have fun? Then you will love ENGG1801!
• Or do you like to copy, cheat, be lazy? Then this may not be for you
Summary

We will give you the best learning experience in this course – we will give you everything you need

Therefore, we will accept no excuses
• At the end of lectures, the “To Do” slide tells you things that you need to do

• Read through and enjoy these slides again
  – Especially slides 76 – 96

• See course website and print next lecture: sydney.edu.au/engineering/it/courses/engg1801

• Install Matlab on your computer
  – Slides 64 – 65