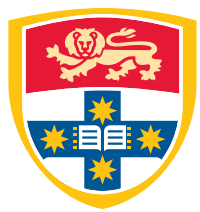
COMP2017 & COMP9017: Systems Programming

School of Computer Science, University of Sydney



Copyright Warning

Lecture 1: About this course

Lightest intro

COMP2017 & COMP9017

This unit is *Systems Programming*

These slides and more here:

Figure 1: `https://edstem.org`

COMP2017 & COMP9017

Our time is short!

Lecture 0 & Induction slides available on Ed[1]

Lecture 0 & Induction recording available on Canvas[2]

- Structure of this course: `https://sydney.edu.au/units/COMP2017` [3]
- Lecture & Seminar recording: Canvas
- More resources: `https://edstem.org` and Canvas
- More programming: YOU!

Coronavirus (Covid-19) infection: University of Sydney advice

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[1] all students are expected to read these

[2] all students are expected to watch these

[3] 40/50/50 pass condition. Late penalty → 25% per day. Absence → 0. Weekly lecture, lab, task & eval.

Assessment components

Assessment	Due Date	Weighting
P1	11:59 PM, 21 March 2021	10%
P2	11:59 PM, 11 April 2021	15%
P3	11:59 PM, 26 April 2021	15%
P4	11:59 PM, 09 May 2021	15%
P5	11:59 PM, 30 May 2021	15%
Final Exam	Formal Exam Period	30%

Note: all due dates are Sydney local time

About The Coordinator/Lecturer

The unit coordinator and lecturer is
Dr. John Stavrakakis

PhD in Computer Science
Specialises in 3D computer graphics

Overall course administration and design

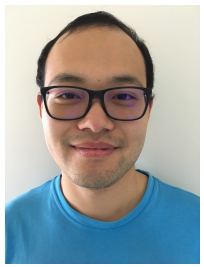
Coordinator/Lecturer for over
`c=680;(rand()%2*(c+920))+c` students over
many courses this semester.

Please be considerate of his time.

About the Teaching Assistants (TA)

Tyson Thomas

tinkerer, sketcher and trekkie



William Wang

med, science, cooking

The teaching assistants help with the preparation and delivery of the course contents. Seminars, labs, tutorials, quizzes, assignments, challenges, computer examinations. They also conduct several other duties.

About our teaching team

We have a fantastic team of tutors. Each are talented in their own regard.

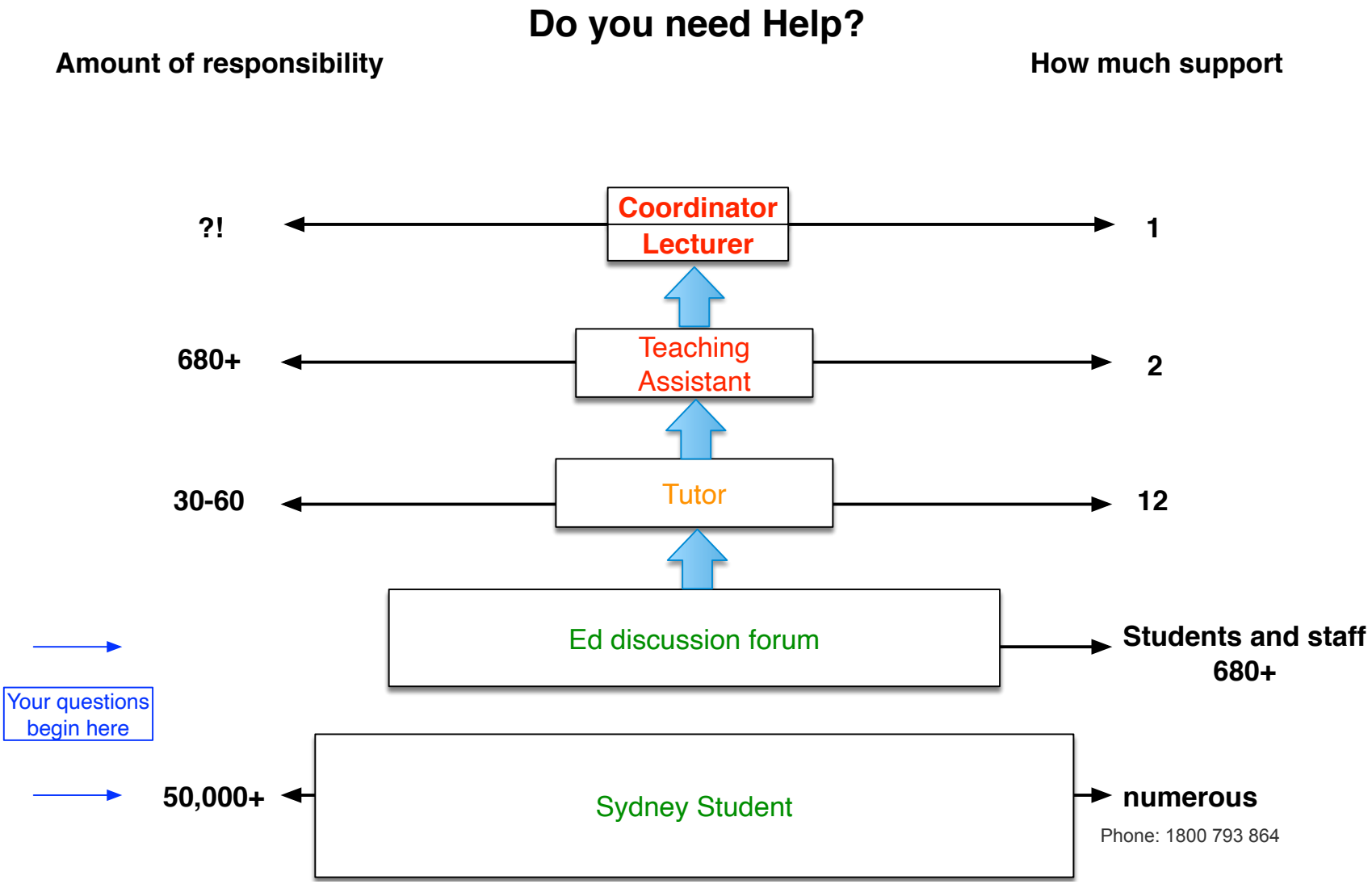
- Tyson Thomas
- William Wang
- Anuj Dhavalikar
- Gregory McLellan
- Dennis Chen
- Byung Hoon Cho
- Andrew Xu
- Xiaowen Hu
- Alistair de Vroet
- Leon Chen
- Hanin Zenah
- Ziyun (Erik) Chi

If you encounter any problems with our tutors, please contact the TA or the coordinator directly.

Where to get help?

1. Student admin → `https://sydneystudent.sydney.edu.au` or contact the Student Centre. Please check these first. E.g. timetable, passwords, payments, enrolments etc.
2. Ed discussion forum → Ed
3. Your tutor in your designated laboratory
4. Contact a TA for administration → Ed (private thread)
5. The teaching assistants email:
   Tyson Thomas, William Wang,
6. Consultation with Dr. John Stavrakakis:
   14:00 - 15:00 Friday, Zoom Link

The hierarchy of help



Expected questions

Labs begin in week 2

Submission instructions for assessments on Ed

Do you have another question? See lecture 0 slides, the week 0 recordings which explain a lot, the unit of study website...if it is not explained in these, feel free to ask!

All slides: `https://edstem.org/courses/5467/resources`

Memory

Memory of a computer: The addressing system

We have memory: How much do we have?

We want to retrieve a value: Where is it?

We want to store a new value: Where does it go?

We want to refer to an area of memory for someone else: How can we do that?

Memory of a computer: The addressing system (cont.)

Memory is all about addresses and values

Address is the location in memory of the value

Values are an *arbitrary* number of the bits

The first bit of a value is stored at the address

Memory of a computer: The addressing system (cont.)

Computers: 1) calculate and 2) copy memory

Computers are constantly copying values from one address to another address.[4]

copy `64` bits from address `0x0123` to address `0x0480`

All calculations rely on the memory being organised:

- The correct values were copied into the area of memory,
- using the correct addresses,
- at the right time!

[4] A simplification for modern von neumann architecture