CSCI251/CSCI851 Autumn-2020
Advanced Programming (S0)

Subject Admin Introduction

Luke McAven and Ian Piper
SCIT-EIS-UOW

Contact details

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Dr. Ian Piper (SWS)
ian@uow.edu.au

If you email one of us it makes it easier if you include the subject and topic in the subject line: For example: CSCI251: A1.

- This way we can tell if an email is about almost due assessment or similar important matters.
- While we try to reply to emails within a couple of working days there will be times when other subjects or activities may take priority.
- **If possible, use your university account for email.**

Please DO NOT ring or leave a message on our phones.

CSCI251/CSCI851

- Some of you are taking Advanced Programming under a code other than CSCI251, so as CSCI851.
- CSCI851 is identical to CSCI251.
  - It's a foundational subject for the Master of Computer Science students.
- CSCI251 is considered the primary code since there are usually more undergraduates, but when we say CSCI251 this encompasses CSCI851 as well ☺

- CSCI851 students, if you have little or no programming experience you can pass this subject!
  - But, you will need to work hard and take the opportunities that are given to help you learn.
  - As more experienced students we expect you to be organised, and capable of learning quickly.
- It's likely to be daunting initially.
  - If there are terms that we are using as if everybody should know it, and you don't know them or don't understand them, please let us know.
    - Some of that feedback can help shape the lecture/tutorials and/or labs for this subject.

Consultation Times

This subject runs in Liverpool (SWS) and Wollongong.

Dr. Ian Piper is the lecturer in Liverpool, but he is based in Wollongong.

Monday 13:30 – 14:30 (SWS)

Dr. Luke McAven is the lecturer in Wollongong.

Tuesday 11:30am – 1:30pm (Wollongong)

Friday 12:30pm – 2:30pm (Wollongong)

Consultation times may change where there are public holidays or absences.

Subject contact hours

- This subject is worth 6 credit points.
- We have a 2-hour lecture each week and a 2-hour laboratory each week other than week 1.
- The 1-hour lecture/tutorial starts from week 1.
- Weekly classes:
- SWS:

Lecture	Monday	8:30am – 10:30am	SWS_2-21
Lab	Monday	10:30am – 12:30pm	SWS_2-29
Lec/Tut	Monday	12:30pm – 1:30pm	SWS_2-21

- Wollongong:

Lecture	Tuesday	3:30pm – 5:30pm	25-107
Lec/Tut	Friday	11:30am – 12:30pm	14-G01
Lab: Mixed	Wednesday	8:30am – 10:30am	3-125 L & M
Lab: 251	Wednesday	10:30am – 12:30pm	3-125 M & C
Lab: Mostly 851	Wednesday	1:30pm – 3:30pm	3-125 L & M
Lab: 251	Thursday	8:30am – 10:30am	3-127 M & C
Lab: 251	Thursday	12:30pm – 2:30pm	3-126 C
Lab: 251	Thursday	2:30pm – 4:30pm	3-126 C

+ probably two more half labs, or more …

- According to University policy, 1 credit point is equivalent to 2 hours of work including class attendance, per week.
  - So for this subject it's about 7 hours of work outside of the classes.

The lecture/tutorial

- The lecture/tutorial was added last session, and it doesn't mean we will be including a lot of additional topics.
- It will just give us time to go through some more examples and tie some of the material together more usefully.
- These deliberately run after the labs, meaning we have a chance to go over some of the particularly important lab exercises.
- Discussions about assignments will typically take place this there as well.

- The delivery method for classes will be power point slides.
- You will be able to find material for the subject on the subjects eLearning site reachable through the UOW website:

http://www.uow.edu.au/student/index.html

- The slides will be provided in pdf.
  - Not necessarily much before the lecture takes place, and possibly even afterwards, because I intend to make a fair few changes.

Textbook and references

- There is an (optional) textbook for this subject:

  Lippman, Stanley B.; Lajoie, Josée; Moo, Barbara E.; C++ Primer (5th Edition), 2012.

- This book is a good C++ reference guide, however, it assumes you know nothing about programming, and therefore it may contain a lot of material you already know.
- It is in the library.
- The other books listed in the outline are also in the library.
- Some books that covers some good new material are:

  O'Dwyer, Arthur; Mastering the C++17:STL, 2017.

  Scott Meyers, Effective modern C++, O'Reilly's, 2014.

- There are also many websites which may be helpful.
- The following are a few…

http://www.icce.rug.nl/documents/cplusplus/
http://www.cplusplus.com/
https://stackoverflow.com/
http://www.cppreference.com/
http://en.cppreference.com/w/
http://www.sgi.com/tech/stl/index.html
https://www.bogotobogo.com/cplusplus/cpptut.php

- These sites serve different purposes, looking at formal definitions is sometimes helpful but a simple example is sometimes better.
- It's helpful to become familiar with some C++ guidelines …

https://github.com/isocpp/CppCoreGuidelines/blob/master/CppCoreGuidelines.md

How to actually learn any new programming concept

Essential

Changing Stuff and Seeing What Happens

O RLY?

@ThePracticalDev

Cutting corners to meet arbitrary management deadlines

Essential

Copying and Pasting from Stack Overflow

O'REILLY®

The Practical Developer
@ThePracticalDev

Solutions that might fix the problem without breaking anything

Essential

Hoping This Works

O RLY?

@ThePracticalDev

Software can be chaotic, but we make it work

Expert

Trying Stuff Until it Works

O RLY?

The Practical Developer
@ThePracticalDev

The internet will make those bad words go away

Essential

Googling the Error Message

O RLY?

The Practical Developer
@ThePracticalDev

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would be a pure function if not for the side effects on your sanity

Turning Coffee Into Code

The Definitive Guide

O RLY?

@ThePracticalDev

Does it run? Just leave it alone.

Writing Code that Nobody Else Can Read

The Definitive Guide

O RLY?

@ThePracticalDev

Orly Book Cover -
Tiga.stanito.com •

The eLearning site

- Check the eLearning (Moodle) site for this subject regularly!
  - Any change to the subject will be announced on the eLearning site.
  - Any information posted to the eLearning site is deemed to have been notified to all students.
- Posts to the announcements section on the Moodle site, by me, are sent to the email account of everyone enrolled anyway.

Assessment: Passing this subject.

- 3 assignments: 10%+(0.5+9.5)%+10%=30%.
  - Due roughly Weeks 5, 10 (diagram 7), and 13.
  - Procedural, OO, Generic.
- Laboratories: 10%.
  - Basically each week.
- Final examination: 60%.
- Two TF requirements:
  - At least **40%** of the exam marks: **24/60**.
  - At least **80**% of the laboratory marks: **8/10**.
  - Not meeting one of these requirement, and obtaining 50 or more overall, *may* result in a TF grade.

Quizzes

- Last session we had a couple of optional quizzes on Moodle.
  - We intend to have quizzes again.
- One will be prior to the census date and should be seen in part as an opportunity to get feedback on your progress in the subject.
- The second will be prior to the academic penalty date, again this may be useful for gauging progress.
- A third quiz may be added at the end.

Laboratory exercises

- In the laboratories we expect you to work through the provided exercises.
- They are not being marked on correctness so much as that you are working through the material and making progress.
- Typically for this subject we'll aim to provide more exercises than you we would expect you to complete in the time.
  - But they will range in difficulty, so some beginner exercises and some extension tasks, and you can start where you like.

Pre-Laboratory exercises

- We will likely post a couple of starter exercises towards the end of each week ready to help you get ready for the next week's lab.
  - These will often likely be debugging,
- Those will be starting points for the labs and we would hope many of you will at least attempt them prior to the labs.

Assessment environment

- Lab: Ubuntu 18.04.
- You can work at home in any C++ environment, but you roughly need the code to compile in a lab compatible environment.
- Compiler: GCC 7.4.0.
  - Should be C++17 compliant.
- On Ubuntu use g++.
- Likely different standard compliant versions won't be 100% compatible.
  - Be careful with the functionality you use.

02-January-2017

Some notes on assessment

- Any C++ programs submitted which do not produce the desired results are likely to receive a significant deduction.
- If your program doesn't compile on Ubuntu, in accordance with instructions, it will likely receive zero.
  - You can always comment out problem sections!
- We will aim to return work within about two weeks of the deadline.
- Students may query about the marking to the lecturer within two weeks of receiving the marks.

Extensions etc.

- If you require additional time to complete an assignment you must submit claims for extensions electronically via SOLS, ***before the DUE date*****.**
- You may be granted an extension if your circumstances warrant it.
- Of course, if you are in hospital for the last week or similar, and cannot get in contact I will understand.

http://www.uow.edu.au/students/sols

A word on Academic misconduct ….: Plagiarism and similar concerns …

- The Academic Integrity Policy, available at:

http://www.uow.edu.au/about/policy/UOW058648.html

- … describes academic misconduct including:

  f. Plagiarism

    i. Using another person's ideas, designs, words or any other work without appropriate acknowledgement ;

    ii. Re-using one's own work without appropriate acknowledgement.

- I suggest you read that document about what is considered misconduct.

- There are two primary concerns for us:
  - Students copying directly from sources, or copying without appropriate referencing.
  - Students copying each other.
    - You can discuss ideas but need to use your own words!
    - With code and mathematical solutions you need to work fairly independently.
- Don’t just copy code from websites:
  - At the very least comment it, but if the code is mostly the work of others you are going to get zero.

Github repositories

- Don’t store your assignments in a public github or similar repository.
- If other students find it, you may (both/all) end up getting zero.

U O W

Preparing for an emergency is the best defence against an

EMERGENCY

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EMERGENCY Procedure

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IN AN EMERGENCY

KEEP CALM – STAY SAFE

If the alarm sounds or you are notified to evacuate:

- Follow instructions of building warden or lecturer
- Leave by the nearest safe fire exit
- Proceed to emergency evacuation point
- Await further instructions.

If required to take shelter:

- Follow instructions of building warden or lecturer
- Lock door and seek refuge
- Await further instructions.

IF YOU HEAR A CONTINUOUS ALARM BELL

OR

ARE REQUESTED BY A BUILDING WARDEN OR A MEMBER OF STAFF TO EVACUATE THE BUILDING

YOU MUST

- Turn off any electrical equipment, secure any personal belongings
- Evacuate the building immediately by the nearest exit
- Obey all directions from wardens
- Proceed to the assembly area indicated on the **RACE** map signs in the area

- Remain in the assembly area until advised the emergency is over
- Do not re-enter the building until advised by the Building Warden (who will be wearing an **ORANGE** vest) Security Staff or fire officer.

REMEMBER

- Your exits
- Your assembly areas
- Don’t use lifts
- Don’t re-enter until advised to do so

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STANDARD FIRE ORDERS

ACTIONS TO BE CONSIDERED ON DISCOVERING A FIRE

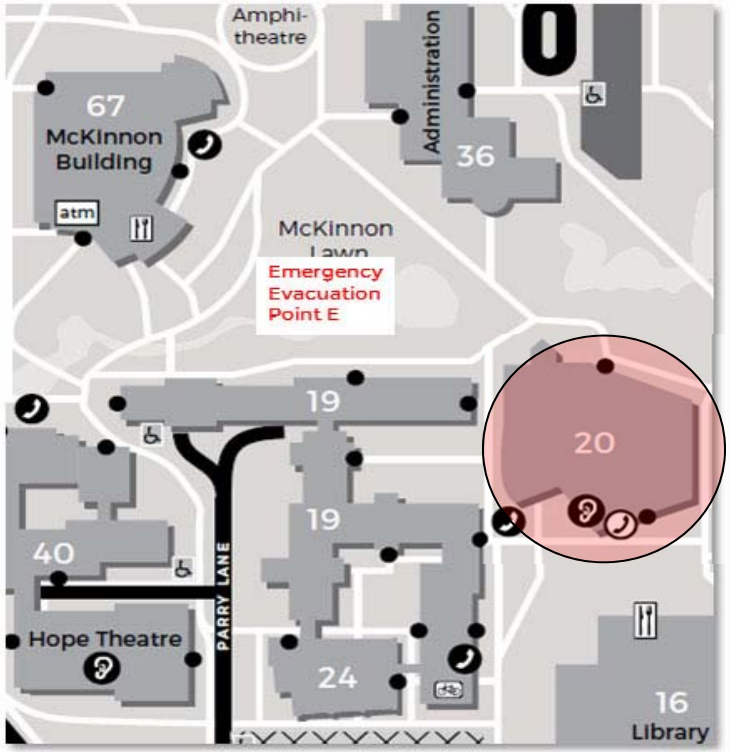
R "Rescue" any person(s) in immediate danger only if safe to do so.

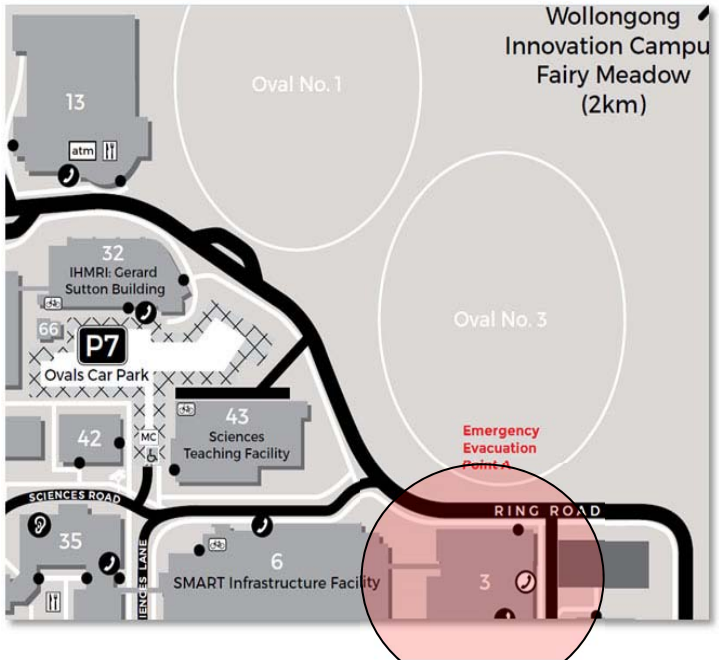
A "Alarm" Raise the alarm by contacting University Security on extension 4900 or Emergency Services on 0 000.

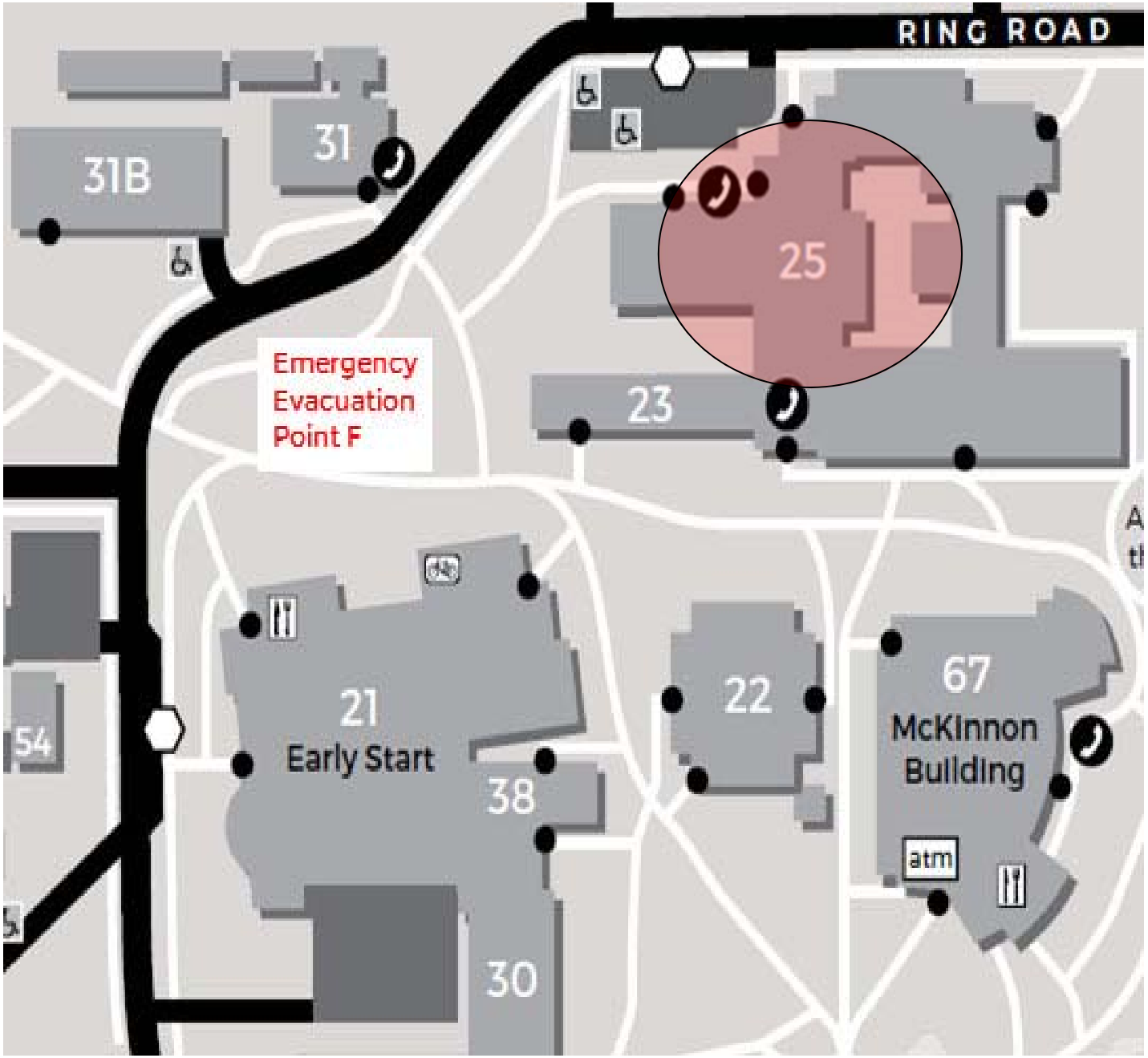
C "Contain" Close doors to contain the fire.

E "Extinguish" Attempt to extinguish the fire only if you are trained and it is safe to do so.

Evacuate the building and follow directions of Building Wardens



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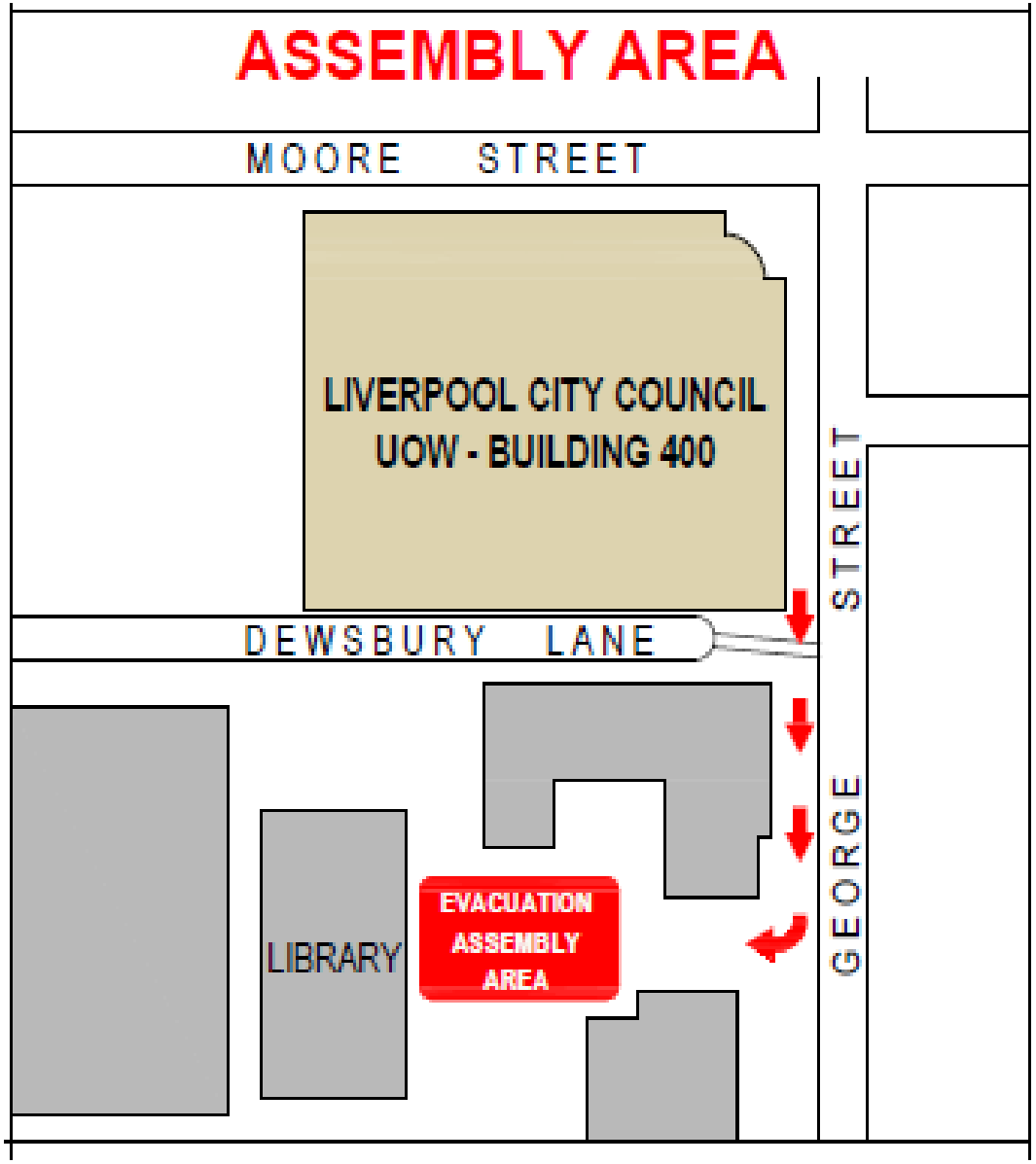
SWS assembly area …



U O W

Want more information? Go to http://www.uow.edu.au/about/security/index.html

Thank you

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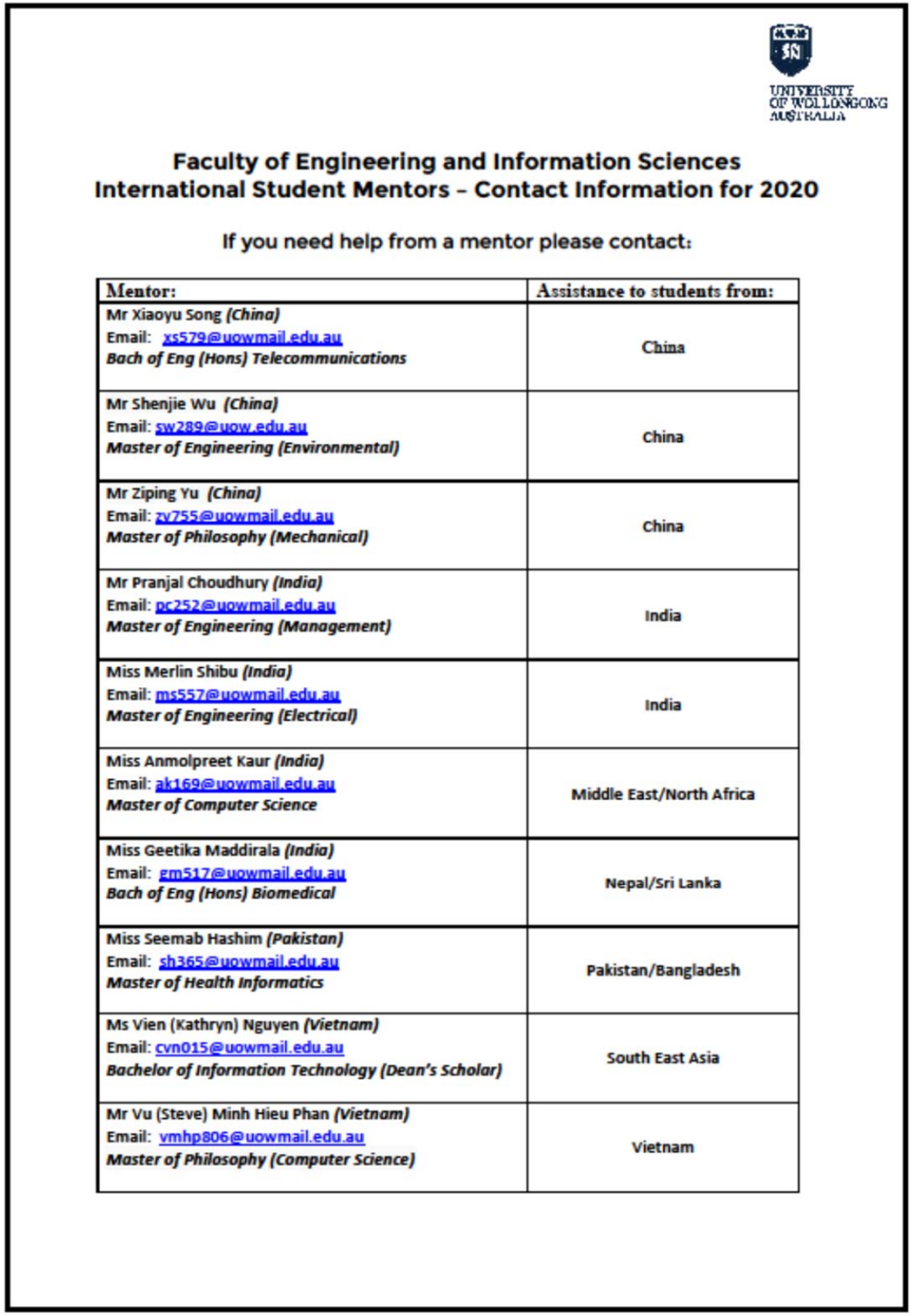
EIS International Student Mentors

Check the Moodle site



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Faculty of Engineering and Information Sciences
International Student Mentors – Contact Information for 2020

If you need help from a mentor please contact:

Mentor:	Assistance to students from:
Mr Xiaoyu Song *(China)* Email: xs579@uowmail.edu.au ***Bach of Eng (Hons) Telecommunications***	China
Mr Shenjie Wu *(China)* Email: sw289@uow.edu.au ***Master of Engineering (Environmental)***	China
Mr Ziping Yu *(China)* Email: zy755@uowmail.edu.au ***Master of Philosophy (Mechanical)***	China
Mr Pranjal Choudhury *(India)* Email: pc252@uowmail.edu.au ***Master of Engineering (Management)***	India
Miss Merlin Shibu *(India)* Email: ms557@uowmail.edu.au ***Master of Engineering (Electrical)***	India
Miss Anmolpreet Kaur *(India)* Email: ak169@uowmail.edu.au ***Master of Computer Science***	Middle East/North Africa
Miss Geetika Maddirala *(India)* Email: gm517@uowmail.edu.au ***Bach of Eng (Hons) Biomedical***	Nepal/Sri Lanka
Miss Seemab Hashim *(Pakistan)* Email: sh365@uowmail.edu.au ***Master of Health Informatics***	Pakistan/Bangladesh
Ms Vien (Kathryn) Nguyen *(Vietnam)* Email: cvn015@uowmail.edu.au ***Bachelor of Information Technology (Dean's Scholar)***	South East Asia
Mr Vu (Steve) Minh Hieu Phan *(Vietnam)* Email: vmhp806@uowmail.edu.au ***Master of Philosophy (Computer Science)***	Vietnam