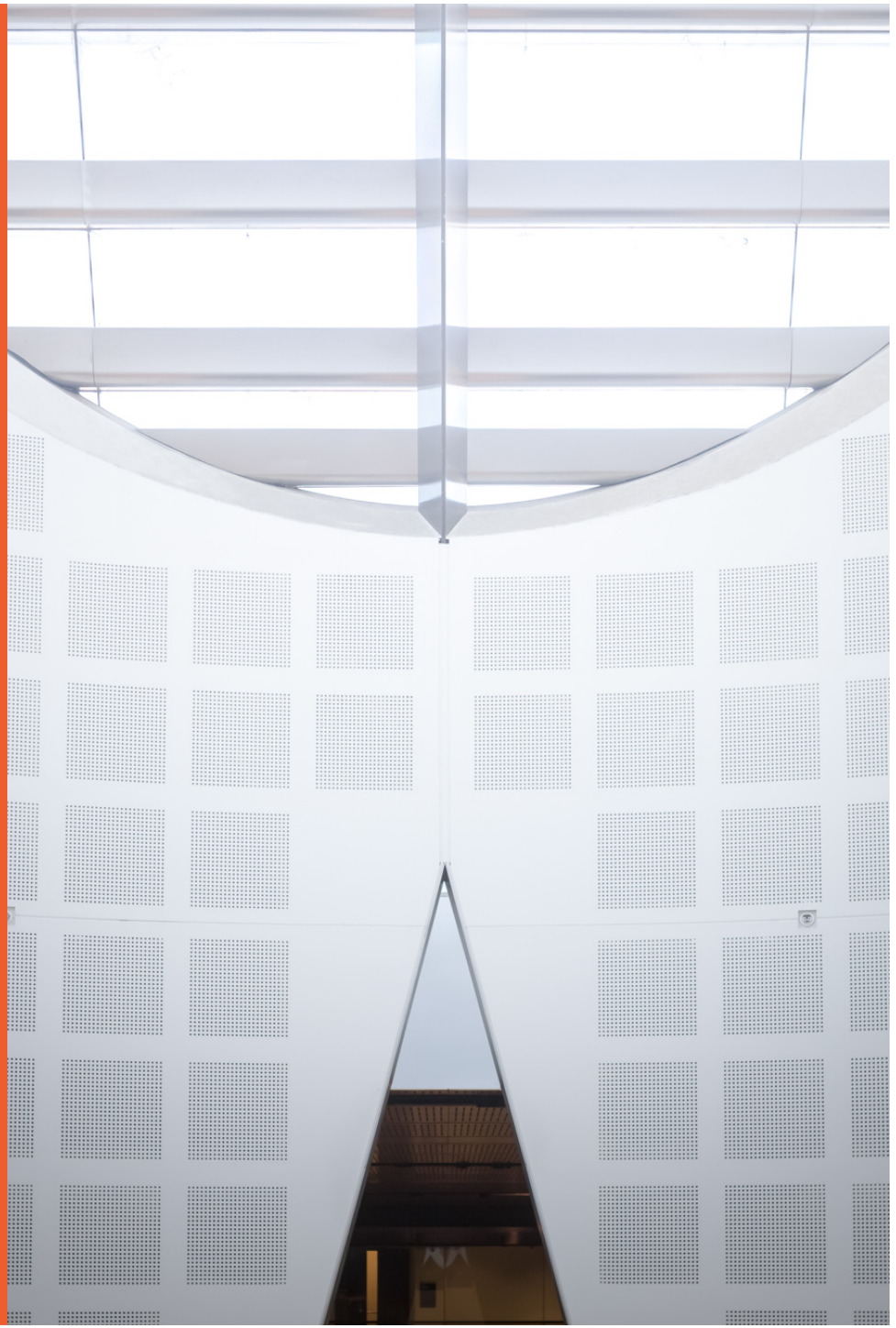
INFO1105/1905/9105
Data Structures
Week 1a: Administrivia

Professor Alan Fekete
Professor Seokhee Hong
School of Information Technologies

THE UNIVERSITY OF SYDNEY



Copyright warning

Acknowledgement of Country

Before we begin the proceedings, I would like to acknowledge and pay respect to the traditional owners of the land on which we meet; the Gadigal people of the Eora Nation. It is upon their ancestral lands that the University of Sydney is built.

As we share our own knowledge, teaching, learning and research practices within this university may we also pay respect to the knowledge embedded forever within the Aboriginal Custodianship of Country.

Role of the unit

- Improve programming skill, especially with object-oriented coding techniques, including recursion on a data structure
- Build student capability with central ideas of computer science (data abstraction, specific clever data structures and their algorithms, recursion, scalability analysis)
- Provides the basics on which most later units depend

- Required in BIT, BCST, BSc (CS major), BE (Software), BE (Elec)

Agenda

- Unit arrangements
- Expectations
- Assessment
  - Unit details
  - Policies
- Workplace Health and Safety
- Assistance
- Advice

INFO1105/1905/9105: places

- Lecture: every Wednesday 1 till 3pm, in Wallace
- Some students can't attend lectures; in this case, watch the lecture recordings online, or at least read the lecture slides (do so *before* your lab!)
- Lab: depends on your timetable
  - Go to the lab you are scheduled for [all labs on Thursday or Friday]
  - Labs start in week 1
  - If for some reason you miss it, you can attend another lab session *if there is space and the tutor agrees*, but ask the tutor before taking a seat
  - Note that quiz assessments happen in lab time

- Do not miss class, except for illness, emergencies, etc
- Get help from staff if you feel you are falling behind

INFO1105/1905/9105: people

- Instructors
  - Unit coordinator and lecturer: Prof Alan Fekete (alan.fekete@sydney.edu.au)
    - Phone: 93514287, Office: SIT 447
    - Even if someone else is currently lecturing, this is the person who deals with all paperwork and admin issues
      - Illness or misadventure
      - Rules and policies
  - Lecturer: Prof Seokhee Hong (seokhee.hong@sydney.edu.au)
  - Teaching Assistant: Joe Godbehere (jgod5665@uni.sydney.edu.au)
    - questions about tutorials/labs/difficulties with platforms
  - Tutors: depends on your timetable

INFO1105/1905/9105: resources

- eLearning
  - https://elearning.sydney.edu.au/
  - Login using Unikey and password
  - within this, the unit-specific subsite
  - Link to CUSP
    - Official schedule, list of learning outcomes, etc
  - Copies of slides
  - Lecture videos
    - We intend to record the lectures, but the technology is not reliable
    - Let us know of difficulties, so we can get recordings fixed!
  - *Submit text-based official assignment work here*;
  - see your grades; etc
  - Link to edstem site
  - Link to tutorial site

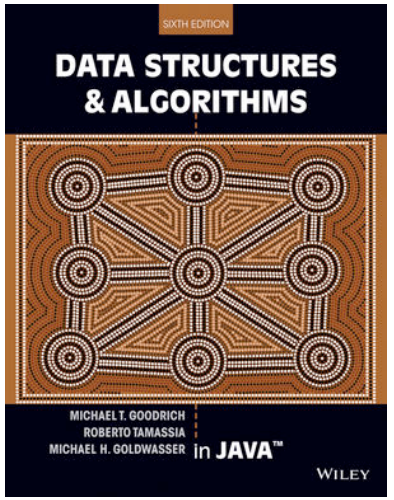
INFO1105/1905/9105: resources

- edstem site
  - Direct access at https://edstem.org
    - Login using Unikey and password
  - Discussion forum
    - ask questions, post comments, see answers from fellow students and from tutors/lecturers/TA
    - you can ask private questions to the staff (you can even include your code in these)
  - submit coding work (tasks, assignments) here
    - includes some automatic testing (maybe public tests; also hidden tests)
  - Assessment instructions
  - Link to tutorial/lab web site

INFO1105/1905/9105: resources

- Tutorial/lab web site
- instructions for each weeks lab
  - and the weekly tasks to be submitted on edstem
- Direct access at http://sydney.edu.au/engineering/it/courses/info1105/2017/

INFO1105/1905/9105 Reference book



- "Data Structures and Algorithms in Java"
- by Goodrich, Tamassia & Goldwasser,
- 6th Edition
  - available as an eBook through University Library
  - hard copies in SciTech library
- consult this regularly
  - alternate explanations,
  - more detail than lectures, and
  - code fragments

General Expectations

- Students attend scheduled classes(*), and devote an *extra* 5-8 hrs per week
  - (*) carefully watch videos if not able to attend lectures
  - doing assessments
  - preparing and reviewing for classes
  - revising and integrating the ideas
  - practice and self-assess
- Students are responsible learners
  - Participate in classes, constructively
    - Respect for one another (criticize ideas, not people)
    - Humility: none of us knows it all; each of us knows valuable things
  - Check eLearning site at least once a week!
  - Notify academics whenever there are difficulties
  - Know and adhere to University policies

INFO1105/1905 Expectations

- Prerequisites:
  - Java programming skill
    - You have COMPLETED info1103 or info1903
      - that is, you got Pass or better in one of these units
    - if you studied programming elsewhere, speak to coordinator to be sure you have the necessary background, or can catch up quickly enough
  - Also, use English language and mathematical concepts notation, at the level similar to info1103 or info1903
  - Also, learning skills, time management etc as needed in first year Uni!
- If you find you are missing any aspect of what we assume, please contact the coordinator immediately

Self-test

- Are you prepared for this unit?
- How much work will you be devoting to this unit, each week?
- Do you need to buy a book?
- Who should you see if difficulties arise?

INFO1105: Assessment

- Quizzes
- Tasks
- Assignment 1
- Assignment 2
- Exam

There is different assessment in INFO1905 and info9105; discussed later

INFO1105 Quizzes

- Done **during scheduled lab sessions** (usually in first hour of the lab)
- 5 quizzes, in weeks 4, 6, 8, 10, 12
- Worth 4% each
- Answer short or multichoice questions about the material so far
- Quizzes provide practice and feedback, to help students prepare for the written exam
- Particular focus: know the data structures, the operations on them, their costs

INFO1105 Tasks

- Done in your own time
- 12 tasks, one for each week (1-12)
  - each task is due at noon on Wednesday immediately after the weekend at the conclusion of the week involved
  - week 1 task will be due noon on August 9
  - week 2 task will be due noon on August 16, etc
  - week 8 task will be due noon on September 27 (during break!)
- Individual programming in Java, submitted and autograded through edstem
- Worth 10% in total
  - 1% each, we count your best 10 tasks out of the 12
- Tasks provide practice and feedback, to help students keep up with the Java and coding aspects
  - Special focus: how to express a data structure or operation, in code

INFO1105 Assignments

- Individual programming tasks in Java, involving substantial design and algorithm work, and also a written report containing explanation, analysis, etc
- Code submitted through edstem
  - some feedback from public tests
- Report submitted to Turnitin via eLearning
- Asst1, worth 8% due 5pm Friday September 22 (wk 8)
  - code that uses collections through interfaces
- Asst2, worth 12%, due 5pm Friday October 27 (wk 12)
  - code that implements the methods of a collection interface, based on a given data structure (not one covered in detail during lectures!)

INFO1105 Exam

- Worth 50% of the unit
- Written questions will cover the content of lectures and labs, and also the programming skills learned in labs, tasks and assignments.
- School of IT policy: you must get at least 40% of the marks available on the exam, in order to pass the unit

INFO1905

- An Advanced alternative to INFO1105
  - Covers the same material and outcomes
  - Plus some extra topics
    - more sophisticated data structures
    - more sophisticated techniques for reasoning about correctness and performance
  - Grades should be comparable (no advantage or disadvantage, no matter which unit is done)
- Entry: Distinction or better in INFO1103 or INFO1903
  - if you want to study info1905 but don't have the requirement, see the coordinator to discuss
  - No-one is required to do info1905; info1105 is always as acceptable for any degree rule or entry to a later unit
- Teaching
  - same lectures
  - separate labs, each 3 hours long
    - one extra hour lab each week for extra topics

INFO1905 Assessment

- Same quizzes as info1105, but worth only 1% each
- Similar weekly tasks (some extra or alternative)
- Same assignment 1 and assignment 2
- Extra written assignments on advanced-content
  - AsstX worth 5%, due 5pm Friday Sept 8 (wk 6)
  - AsstY worth 10%, due 5pm Friday Oct 20 (wk 11)
- Some alternative questions on the final exam
  - but much of the exam will be the same as for info1105

INFO9105

- For postgraduate students without this material in their background (eg in MPE degree)
- Same lectures as info1105/1905
- Separate lab session
- Same quizzes and tasks as info1105
- Similar assignment 1 and assignment 2 and exam, but with some assessment aimed at higher levels of reflection and integration of material, as appropriate for graduates

Special Consideration (University policy)

- If your performance on assessments is affected by illness or misadventure
- Follow proper bureaucratic procedures
  - Have professional practitioner sign special USyd form
  - Submit application for special consideration online, upload scans
  - Note you have only a quite short deadline for applying
  - http://sydney.edu.au/students/special-consideration-and-arrangements.html
  - Be careful to use “CUSP name” for the task
  - If request is denied, consult coordinator immediately (perhaps you can resubmit with better documentation)
- Also, notify coordinator by email *as soon as anything begins to go wrong*
- There is a similar process if you need special arrangements eg for religious observance, military service, representative sports

Late assessments in INFO1105/1905/9105

- Suppose you hand in work after the deadline
  - No late submission for quizzes, which must be done in scheduled labs
  - No late submission accepted for tasks, as solutions will be released soon after due date
- For assignments (If you have not been granted special consideration or arrangements, or a “simple extension” by email)
  - A penalty of 20% of the available marks will be taken, per day (or part) late
- *Eg your work would have scored 60% and is 1 hour late*
  - *you get 40%*
- *Eg your work would have scored 70% and is 28 hours late*
  - *you get 30%*
- Warning: submission sites get very slow near deadlines
- Get something done early and submit it early; you can try to improve it and resubmit if there is time before the deadline

Academic honesty

- Please read the University policy on Academic Honesty carefully, from

  http://sydney.edu.au/students/academic-integrity.html

"As a student of the University, you are responsible for taking part in your education in an honest and authentic manner."

- All cases of academic dishonesty and plagiarism will be investigated
- There is a process and a centralized University system and database
- Offenses include:
  - Plagiarism – when you copy from another student, website or other source. This includes copying the whole assignment or only a part of it.
  - Academic dishonesty – when you make your work available to another student to copy (the whole assignment or a part of it). There are other examples of academic dishonesty.
  - Misconduct - when you engage another person to complete your assignment (or a part of it), for payment or not. This is a very serious matter and the Policy requires that your case is forwarded to the University Registrar for investigation.

Penalties

- The penalties are severe and include:

  1) a permanent record of academic dishonesty, plagiarism and misconduct in the University database and on your student file

  2) mark deduction, ranging from 0 for the assignment to Fail for the unit

  3) expulsion from the University and (for international students) cancelling of your student visa

Advice, especially for coding assessments

- Do not confuse legitimate co-operation and cheating! You can discuss the question and your intended approach with another student, this is a legitimate collaboration; but you cannot write the code together, nor can either of you make use of the other's actual code (not even part of it) – everyone must write their own code.
- When there is copying between students, note that both students are penalised – the student who copies and the student who makes his/her work available for copying
- A lot of cheating occurs when students feel pressure as deadlines approach, especially with autograding when you see that your work is not passing the tests. Resist the temptation!
- It is much better for everyone if you submit whatever you can do yourself, even if it isn't complete or perfect. [Note: assignments include hand-marking, so code that doesn't get correct answers can still get marks.]
  - You learn by trying, and we can help you more effectively if we see your situation accurately.

Detection

- We will use the similarity detection software TurnItIn and MOSS to compare your assignments with these of other students (current and previous) and the Internet
  - Turnitin is for text documents: http://www.turnitin.com/en_us/higher-education
  - MOSS is for programming code: https://theory.stanford.edu/~aiken/moss/
- These tools are extremely good!
  - e.g. MOSS cannot be fooled by changing the names of the variables or changing the order of the conditions in `if-else` statements

Student excuses

- All these are cases of plagiarism and academic dishonesty we have seen in our school
- The student excuses are not acceptable:
  - *I sat the test and then posted the questions and solutions to my friends whose test was later in the week. I only wanted to help them understand the concepts that are examinable.*
  - *I posted parts of my code on my web page (or the group discussion forum) because my solution was cool (or I wanted to help them). I didn't expect them to copy it.*
  - *I tried to do the assignment on my own but I had problems with the extension part that I couldn't fix, so I submitted my core part and his extension part. I didn't cheat.*
  - *I finished my assignment but my friend had family problems. I felt sorry for her, so I gave her my assignment as an example. She said she only wanted to have a look and promised not to copy it.*
  - *The test has finished but the tutor hasn't collected the papers yet. I showed my answer to my friend. I didn't expect him to copy it.*
  - *He is my best friend. I had no choice but to let him copy my assignment.*

Key message

- Plagiarism and any form of academic dishonesty will be dealt with, and the penalties are severe
- We use plagiarism detection systems such as MOSS that are extremely good. If you cheat, the chances you will be caught are very high.
- If someone asks you to see or copy your assignment, or to complete the assignment instead of them, just say: *I can't do this - we can both be thrown out of the University. I will not risk my future by doing this*.

Be smart and don't risk your future by engaging in plagiarism and academic dishonesty!

Make this class (and every class) a supportive learning community, by having academic honesty as a core value.

Self-test

- When is the first assessment work due?
- What do you do if you get sick during semester?
- What help can you use when answering assessments?
- How do you find out about assignment instructions?
- How do you submit your work?
- What is Turnitin?
- What language will you be coding in?

WHS INDUCTION

School of Information Technologies

THE UNIVERSITY OF SYDNEY

General Housekeeping – Use of Labs

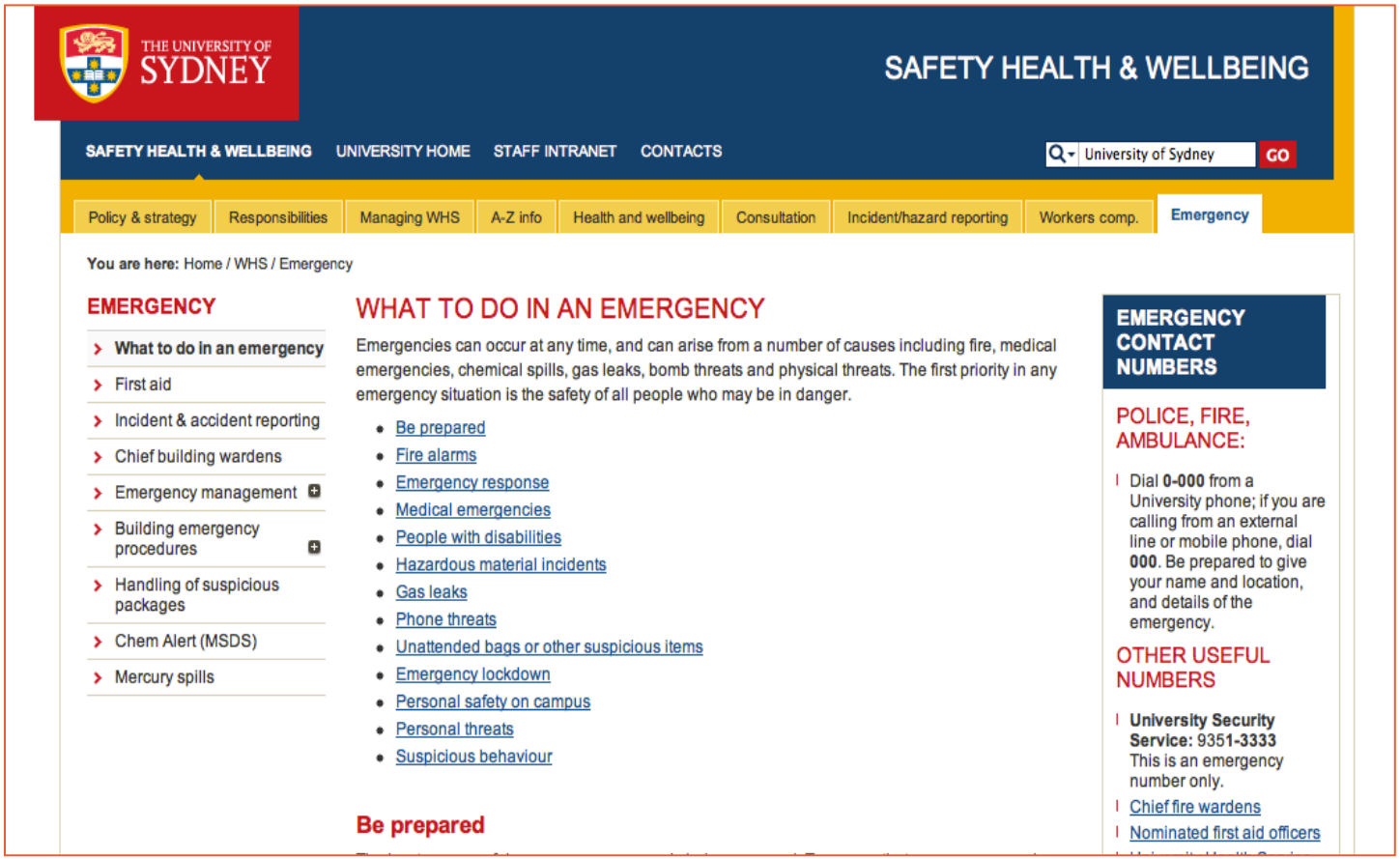
- Keep work area clean and orderly
- Remove trip hazards around desk area
- No food and drink near machines
- No smoking permitted within University buildings
- Do not unplug or move equipment without permission





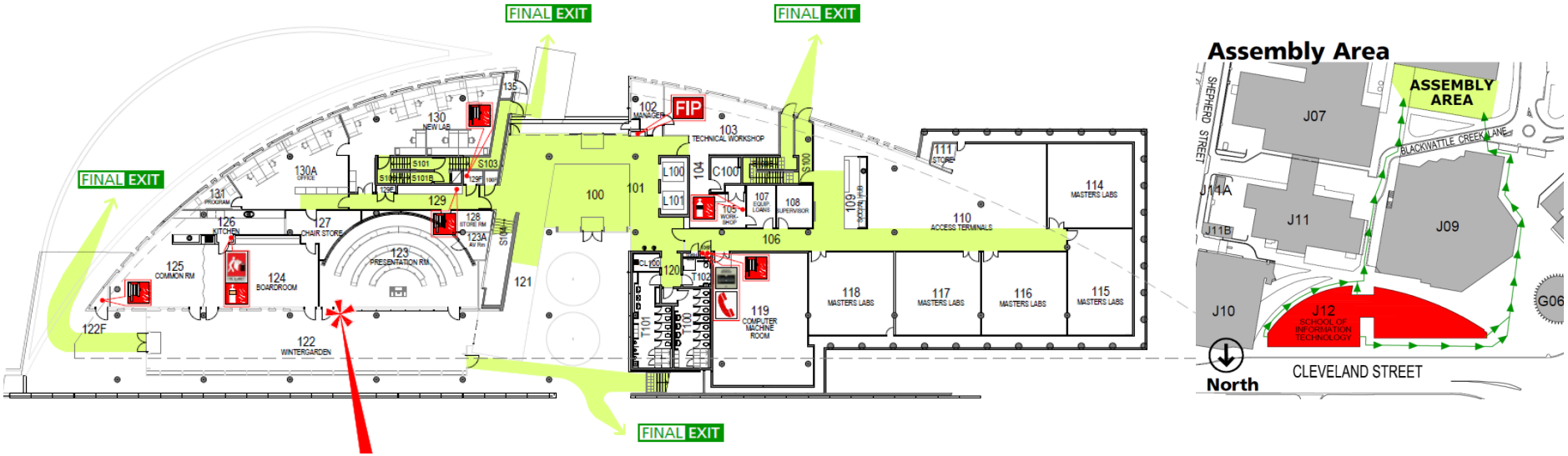
EMERGENCIES – Be prepared

www.sydney.edu.au/whs/emergency



EMERGENCIES

WHERE IS YOUR CLOSEST SAFE EXIT ?



EMERGENCIES

Evacuation Procedures

ALARMS

)) BEEP... BEEP... Prepare to evacuate

1. Check for any signs of immediate danger.
2. Shut Down equipment / processes.
3. Collect any nearby personal items.

)) WHOOP... WHOOP... Evacuate the building

1. Follow the **EXIT** exit signs.
2. Escort visitors & those who require assistance.
3. DO NOT use lifts.
4. Proceed to the assembly area.

EMERGENCY RESPONSE

1. Warn anyone in immediate danger.
2. Fight the fire or contain the emergency, if safe & trained to do so.

If necessary...

3. Close the door, if safe to do so.
4. Activate the "Break Glass" Alarm  or 
5. Evacuate via your closest safe exit. **EXIT** 
6. Report the emergency to 0-000 & 9351-3333

MEDICAL EMERGENCY

- If a person is seriously ill/injured:
  1. **call an ambulance 0-000**
  2. **notify the closest Nominated First Aid Officer**

     If unconscious– send for Automated External Defibrillator (AED)
     AED **locations**.

     NEAREST to SIT Building (J12)
     - Electrical Engineering Building, L2 (ground) near lifts
     - Seymour Centre, left of box office
     - Carried by all Security Patrol vehicles

  3. **call Security -** 9351-3333
  4. **Facilitate the arrival of Ambulance Staff (via Security)**

Nearest Medical Facility
University Health Service in Level 3, Wentworth Building

First Aid kit – SIT Building (J12)
kitchen area adjacent to Lab 110

School of IT Safety Contacts

FIRST AID OFFICERS

Name: Will Calleja
Location: 1 West
Phone: 9036 9706

Name: Katie Yang
Location: 2E-227
Phone: 9351 4918

Orally REPORT all INCIDENTS & HAZARDS to your SUPERVISOR

OR

Undergraduates: to Katie Yang
9351 4918

SIT School Manager: Shari Lee
9351 4158

Support!

- See http://sydney.edu.au/campus-life/safety-security.html
- If you need to report an incident of sexual harassment or assault, or make a complaint about misconduct, or want assistance in any way, call our confidential helpline, **1800 SYD HLP (1800 793 457)**.
- There are a wide range of support services available for students
  - Please make contact, and get help

DISABILITY SERVICES

Do you have a disability?

- You may not think of yourself as having a 'disability' but the definition under the **Disability Discrimination Act** is broad and includes temporary or chronic medical conditions, physical or sensory disabilities, psychological conditions and learning disabilities.
- The types of disabilities we see include:
- anxiety, arthritis, asthma, asperger's disorder, ADHD, bipolar disorder, broken bones, cancer, cerebral palsy, chronic fatigue syndrome, crohn's disease, cystic fibrosis, depression, diabetes, dyslexia, epilepsy, hearing impairment, learning disability, mobility impairment, multiple sclerosis, post traumatic stress, schizophrenia , vision impairment, and much more.
- Students needing assistance must register with Disability Services –
  - it is advisable to do this as early as possible.
- http://sydney.edu.au/study/academic-support/disability-support.html

Other support

- Learning support
  - http://sydney.edu.au/study/academic-support/learning-support.html
- International students
  - http://sydney.edu.au/study/academic-support/support-for-international-students.html
- Aboriginal and Torres Strait Islanders
  - http://sydney.edu.au/study/academic-support/aboriginal-and-torres-strait-islander-support.html
- Student organization (can represent you in academic appeals etc)
  - http://srcusyd.net.au/ or http://www.supra.net.au/
- You are not required to tell anyone else about this
- If you are willing to inform the unit coordinator, they may be able to work with other support to reduce the impact on this unit
  - eg provide advice on which tasks are most significant

Advice

- Metacognition
  - Pay attention to the learning outcomes in CUSP
  - Self-check that you are achieving each one
  - Think how each assessment task relates to these
- Time management
  - Watch the due dates
  - Start work early, submit early and often [history of your work is excellent evidence that you didn't copy!]
  - Do not give in to temptation to copy; submit your own attempts even if they do not get correct results
- Networking and community-formation
  - Make friends and discuss ideas with them
  - Know your tutor, lecturer, coordinator
  - Keep them informed, especially if you fall behind
    - Don't wait to get help
- **Enjoy the learning!**