Course Outline

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Course Details

Course Code	COMP6721
Course Title	(In-)Formal Methods: The Lost Art
Convenor	Carroll Morgan (/users/z3002090)
Admin	Carroll Morgan (/users/z3002090)
Classes	**Lectures** : ...fill in times/locations of lectures... Timetable for all classes (/COMP6721/20T2/timetable)
Consultations	By appointment.
Units of Credit	6
Course Website	http://cse.unsw.edu.au/~cs6721/20T2/ (http://cse.unsw.edu.au/~cs6721/20T2/)
Handbook Entry	http://www.handbook.unsw.edu.au/undergraduate/courses/current/COMP6721.html (http://www.handbook.unsw.edu.au/undergraduate/courses/current/COMP6721.html)

Course Summary

(In-)Formal Methods are practical structuring and design techniques which encourage programming that is easy to understand and to maintain. They are only a part of the large body of “good programming practices,” distinguished from that larger set because –for the methods we consider– the computer-science community has determined the science behind the structures: we know why they are effective. Unusually, this course does not take the traditional route of teaching that science first, and then turning it into practical programming “tools-of-thought”. Instead, we teach the mental tools first, try them on examples and only then, once their

effectiveness has been demonstrated, will we look behind the scenes to see where they come from.Initially the material will deal with conventional programs, those that must “give the right output.” (This is known as functional correctness, and a sorting program is a simple example.) Later in the course we will look at additional correctness criteria, such as security (perform this calculation in a way that keeps part of the answer hidden) and randomisation (implement over-the-internet protocols that depend intrinsically on coin-flipping). Those last two topics will draw on up-to-the-minute research.

Assumed Knowledge

Students should be able to write small imperative programs and be able to carry out logical reasoning about program states.

Student Learning Outcomes

After completing this course, students be able to reason systematically about program construction, and to design programs in a more systematic manner than before, and with a higher likelihood of their being correct.

This course contributes to the development of the following graduate capabilities:

Teaching Strategies

- Lectures: Introduce concepts, show examples
- Tutorials: There are no tutorial or labs per se: the lectures are run in an interactive style that includes both tutorial and lab-style activities.
- Lab Work: (See above.)
- Assignments: Allow students to try out the techniques they have learned, and to benefit from temporary failure but ultimate success.

Teaching Rationale

The material in this course looks simple, and it is easy to believe that it is elementary. But it is not, and that is the reason for the interactive style of presentation.

Student Conduct

The **Student Code of Conduct** (Information (https://student.unsw.edu.au/conduct) , Policy (https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf)) sets out what the University expects from students as members of the UNSW community. As well as the learning, teaching and research environment, the University aims to provide an environment that enables students to achieve their full potential and to provide an experience consistent with the University's values and guiding principles. A condition of enrolment is that students *inform themselves* of the University's rules and policies affecting them, and conduct themselves accordingly.

In particular, students have the responsibility to observe standards of equity and respect in dealing with every member of the University community. This applies to all activities on UNSW premises and all external activities related to study and research. This includes behaviour in person as well as behaviour on social media, for example Facebook groups set up for the purpose of discussing UNSW courses or course work. Behaviour that is considered in breach of the Student Code Policy as discriminatory, sexually inappropriate, bullying, harassing, invading another's privacy or causing any person to fear for their personal safety is serious misconduct and can lead to severe penalties, including suspension or exclusion from UNSW.

If you have any concerns, you may raise them with your lecturer, or approach the School Ethics Officer (mailto:ethics-officer@cse.unsw.edu.au) , Grievance Officer (mailto:grievance-officer@cse.unsw.edu.au) , or one of the student representatives.

Plagiarism is defined as (https://student.unsw.edu.au/plagiarism) using the words or ideas of others and presenting them as your own. UNSW and CSE treat plagiarism as academic misconduct, which means that it carries penalties as severe as being excluded from further study at UNSW. There are several on-line sources to help you understand what plagiarism is and how it is dealt with at UNSW:

- Plagiarism and Academic Integrity (https://student.unsw.edu.au/plagiarism)
- UNSW Plagiarism Procedure (https://www.gs.unsw.edu.au/policy/documents/plagiarismprocedure.pdf)

Make sure that you read and understand these. Ignorance is not accepted as an excuse for plagiarism. In particular, you are also responsible that your assignment files are not accessible by anyone but you by setting the correct permissions in your CSE directory and code repository, if using. Note also that plagiarism includes paying or asking another person to do a piece of work for you and then submitting it as your own work.

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW staff and students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.

If you haven't done so yet, please take the time to read the full text of

- UNSW's policy regarding academic honesty and plagiarism (https://student.unsw.edu.au/plagiarism)

The pages below describe the policies and procedures in more detail:

- Student Code Policy (https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf)
- Student Misconduct Procedure (https://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf)
- Plagiarism Policy Statement (https://www.gs.unsw.edu.au/policy/documents/plagiarismpolicy.pdf)
- Plagiarism Procedure (https://www.gs.unsw.edu.au/policy/documents/plagiarismprocedure.pdf)

You should also read the following page which describes your rights and responsibilities in the CSE context:

- Essential Advice for CSE Students (https://www.engineering.unsw.edu.au/computer-science-engineering/about-us/organisational-structure/student-services/policies/essential-advice-for-cse-students)

Assessment

Item	Topics	Due	Marks	Contributes to
Quizzes	All topics	Ad hoc	10%	Understanding
Assignment 1	Programming exercise	Week 5	30%	Application of techniques learned
Assignment 2	Programming exercise	Week 8	30%	Application of techniques learned
Assignment 3	Programming exercise	Week 10	30%	Application of techniques learned
No labs				
No exam				

Course Schedule

Week	Lectures	Tutes	No labs	Assignments	Quizzes ad hoc
1	Course intro, ...	Welcome			

2	Topics 2 ...	something	
3	Topics 3 ...	something	
4	Topics 4 ...	something	
5	Topics 5 ...	something	Assignment 1 due
6	Topics 6 ...	something	
7	Topics 7 ...	something	
8	Topics 8 ...	something	Assignment 2 due
9	Topics 9 ...	something	
10			Assignment 3 due

Resources for Students

Texts and recommended readings:

- Material will be made available as the course progresses. There is no course

Most resources are available via the course website (http://www.cse.unsw.edu.au/~cs6721/) .

Course Evaluation and Development

This course is evaluated each session using the myExperience system.

In the previous offering of this courses, students were generally positive.

Resource created about a year ago (Monday 18 May 2020, 08:46:43 PM), last modified about a year ago (Thursday 28 May 2020, 11:23:29 AM).

Comments

(/COMP6721/20T2/forums/search?forum_choice=resource/46186)

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There are no comments yet.