



# CO7201: MSc Individual Project

(CA7201: Spring, CB7201: Summer, CC7201: Autumn)

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**Warning:** this presentation is a mere outline of the project. Complete details are in the study guide.



# PROJECT OVERVIEW



# What is the project for?

- To **investigate/solve** new and/or **intellectually demanding problems**:
  - by undertaking a substantial investigation of a technical problem and its domain
  - by evaluating tools and methods
  - by developing a professional information technology project
- After finishing the project, you should be able to initiate, plan, manage and deliver a substantial information technology project



# Types of projects

- Software development projects
  - **Design and develop** a significant IT system.
  - Development **methodology** matters.
  - Example: Develop a system that automates tasks for module administration to efficiently manage them.
- Technical projects
  - Use/extend existing tools/techniques for **studying/analysing a problem**.
  - **Experimental** flavour.
  - Example: Use UML and graph transformations to specify a Service Oriented Architecture (SOA). Provide a prototype with a graph transformation tool.
- Theoretical projects:
  - Interpretation of a software-related problem as a mathematical, **abstract** problem.
  - **Stronger mathematical skills**.
  - Example: Find an algorithmic solution for a task allocation problem.



# Workload and lectures

- Project = 3 months full-time job
  - 450 hours (60 credits) = 4 taught modules, including self-study time.
- Lectures
  - SVN induction: 1h lecture + 1h lab session.
    - (Date TBC)
  - Seminars on completing each of the deliverables.



# Project schedule (Spring/Autumn)

Week	Meetings	Class sessions	Deliverable
0	Supervision meeting	(1) Intro lecture, (2) SVN lecture/lab	Project description (P/F)
1		Planning a (SE/Technical) project	
2	Supervision meeting		Preliminary report (Marked)
3	Group Supervision meeting		
4	Supervision meeting		
5		Interim report writing support	
6	Supervision meeting		Interim report (P/F)
7	2nd marker interview		2nd marker interview (P/F)
8	Supervision meeting		
9		Dissertation writing, and plagiarism in dissertations session	
10	Supervision meeting		Final report template (Formative)
11	Group Supervision meeting		
12	Supervision meeting		
13		Preparing for the viva	Project conclusion (Marked)
14	Viva		



# Meetings

- Supervision meeting (fortnightly)
  - Standard meeting with supervisor, up to 30 mins
  - Summary of outcomes from the previous meeting
  - Discussion of achievements/ideas/queries
  - Plan until next meeting
- Group supervision meeting (x2)
  - 'Stand up' meeting format, 5 mins describing your project and progress, 5 mins questions and feedback
- 2<sup>nd</sup> marker interview
  - Provide a demo of your project to another staff member, second opinion on your project
- Viva
  - With supervisor and second marker, typically around 45 mins



# Deliverables (feedback)

- Project description (P/F)
  - 500 word description, pass/fail
- Preliminary report (Marked)
  - 4-6 pages, background and plan, 5%
- Interim report (P/F)
  - 2 page progress report, pass/fail
- 2nd marker interview (P/F)
  - 30 minute meeting, pass/fail
- Final report template (Formative)
  - Draft of dissertation
- Project conclusion (Marked)
  - Dissertation, code and viva, 90%+ Effort mark: 5%



# Responsibilities

- **Students** are responsible for planning and developing the project, meeting deadlines, and keeping back-up copies (use **SVN**).
- **Supervisors** advise students on methods to be used and on preparation of deliverables.
- **Second marker** is involved in the assessment of the project and, occasionally, in supervision (interview).



# **PROJECT PHASES, DELIVERABLES AND ASSESSMENT**



# Project phases (CA7201)

- Topic announcement and registration (done)
- Topic registration (until 5/2; further details ...)
- Topic allocation (12/2)
- Project description (19/2)
- **Start of project (22/2)**
- Preliminary report (5/3)
- Interim report (1/4)
- Interview (6/4-9/4)
- Background and Dissertation template (30/4)
- Dissertation and project code (21/5)
- Viva (including presentation) (24/5-4/6)



# Topic registration

There are three types of registrations:

- Projects with industrial partners (29 Jan).
- Self proposed topics (29 Jan).
- Supervisor suggested topics (5 Feb).



# Projects with Industrial Partners

- Usually required to submit a professional CV (2 pages in PDF) to the supervisor discussing:
  - Your education, skills and practical experience.
  - The modules studied and results achieved so far.
  - A prioritized list of up to 4 projects you are interested in, and your motivation for choosing them.
- CVs will be forwarded to external partners. Interviews will be arranged with selected candidates.
- FIRM DEADLINE for submission!
- Proceed with other choices in parallel!



# Student proposed topics

- You can propose your own project.
- Discuss it with a supervisor.
- Write a short description highlighting its challenges.
- Deadline is earlier.



# Staff proposed topics

- In case you do not propose your own topic.
- Use the project registration system (link to follow).
- You should choose **4 topics** ordered according to preference.
- Choose **at least 3 supervisors!**
- **Choosing a topic implies committing to it** (changes are not allowed after the deadline).
- Topics may be allocated to **other supervisors**.
- Interviews might be necessary for topics involving companies.
- Some students allocated 4<sup>th</sup> choice! Choose well.



# Topic allocation

- Topics are allocated to
  - students
  - supervisors
  - second markers
- Students who do not discuss topics with supervisors before the registration deadline will have lower priority in the allocation process.



# Project description (Week 0)

- Before the start of the project
- Deliverable: One side of A4
- Assessment: verbal feedback
- Contents:
  - Title of the project
  - Brief description
  - Requirements (objectives):  
essential/recommended/optional



# Preliminary report (Week 2)

- Deliverable: 1500 words (4-6 pages)
- Assessment: marked 5%
- Contents:
  - Motivation
  - Requirements: aims, objectives, challenges
  - Technical specifications of the project
  - Background material (reading list)
  - Detailed work plan and risk plan



# Interim report (Week 6)

- Deliverable: 1-2 pages (Excluding title pages)
- Feedback: Comments + Overall Progress (Pass/Fail)
- Contents:
  - Bullet point list of:
    - Completed tasks
    - Ongoing tasks
    - Pending tasksEach accompanied by short explanation.
  - Updated plan



# Interview: meeting with 2<sup>nd</sup> marker

## (Week 7)

- Deliverable: none
- Assessment: pass/fail
- Goal: prototype demo (some theoretical projects may not involve sw development)
- During the meeting
  - Motivation, aims and challenges
  - Main contributions
    - Requirements, sw architecture and demo
    - Tools/techniques, experiments
    - Techniques/theories, problem statement and proposed solution
  - Work that remains to be done and schedule



# Final report template (Week 10)

- Deliverable: draft of final report
- Assessment: formative (commented on)
- Contents:
  - Complete background, motivation, and literature survey for final report.
  - Template of rest of report:
    - Sections, subsections, etc.
    - Each having a short paragraph with main ideas to be elaborated.
- Option to submit to Turnitin



# Final report and code (Week 13)

- Deliverable: at least 10000-12000 words (40-60 pages)
- Assessment: 90% (together with viva)
- Detailed account of the project:
  - **achieved results** and **evaluation**
  - critical comparison w.r.t. related work
  - overall remarks
- Main structure
  - SW dev proj.: requirements, design, impl, test, evaluation
  - Technical proj.: problem statement, techniques/tools, approach, evaluation and results
  - Theoretical proj.: problem statement, theory, methods, results
- Formatting and layout are very important



# Final report - continued.

- For software development and technical projects:
  - You must highlight three areas of source code that are:
    - Your own
    - Demonstrate the core aspects of your contribution
  - These must be incorporated and discussed in your thesis.



# Viva

- Deliverable: presentation 5-8 slides
- Assessment: together with dissertation
- Goal: summary of the work that has been done
- Presentation
  - 10-15 minutes formal presentation
  - informative: not too many abbreviations, unknown concepts
- Interview
  - 25-30 minutes interview
  - The interview is meant to be interactive
  - A demo can be used to show extra features



# Summary of deliverables

Week	Deliverable	Length	Assessment
Before start	Project description	1 side of A4	Pass/Fail
2	Prelim. Report	1500 words (4-6 pages)	5%
6	Interim report	1-2 pages	Pass/Fail
7	Interview		Pass/Fail
8	Final report template		Formative
12	Final report	10-12K words (40-60 pages)	90% Report Viva Code
13	Viva	+ Effort mark: 5%	



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# TECHNICALITIES



# Subversion - version control system

- **SVN** is a system for storing versions of software.
  - Back up.
  - Different releases.
  - Go back in time.
  - Very convenient.
- Introduction lecture to usage of **SVN** is planned.
- Use **SVN** for submitting deliverables and for keeping **back-up copies**: loss of data is not taken into account for deadline extension.
- All submissions through **SVN**.
- Supervisors have access to your repository!



# Considerations on the use of SVN

- Use the following folder structure:
  - docs
    - 0\_project\_description
    - 1\_prelim\_report
    - 2\_interim\_report
    - 3\_report\_template
    - 4\_final\_report
    - 5\_presentation
  - code
  - other
- Basic structure created automatically.
- Use SVN on a regular basis for:
  - keeping back-up copies
  - submitting deliverables
- Keep your SVN repository organized!



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Based on presentation by Dr Tom Ridge

# **PLAGIARISM AND CHEATING**



# Dissertation vs. code

- The dissertation is similar to dissertations in other subjects.
- Plagiarism has been discussed in C07210.
- Most projects also involve writing **code**.
- **Code plagiarism** is different from **dissertation plagiarism**.
- This part is about **code plagiarism**.



# Code plagiarism

- These things are clearly **wrong**:
  - Getting other people to write code for you without acknowledging it.
  - Copying and pasting code from somewhere without acknowledging it.
  - Writing a version of some code that you have seen elsewhere without acknowledging it.
  - Structuring your code in the same way as some other piece of code without acknowledging it.



# Code plagiarism

- Sometimes, it is not so clear:
  - Using the Singleton Pattern, or other well-known patterns.
  - Using libraries.
  - Cut-and-pasting from standard tutorials.



# The key points

- You have to **tell us** what you have done!
  - “I took this library from there, cut-and-pasted the first section from that tutorial, and imported the source code from that project.”
- If you don't tell us, then you may be accused of plagiarism...
- **You don't decide** what is plagiarism.
- If you tell us, it is no longer plagiarism!



# How to acknowledge?

- There are many ways:
  - In source code comments
  - In the dissertation
  - In README files
  - In supervisor meetings
  - ...
- Best: all of the above!
- Write it down! Tell your supervisor!



# Keep your code private

- **Don't** give your code to anyone else (e.g., via email).
- **Don't** lend your laptop to anyone else.
- **Don't** show your code to anyone (except your supervisors).
- If you do any of the above then the consequences can be very bad...



# What happens if you are caught?

- Typically your project will be marked 0.
- You cannot get an MSc (you may get a postgraduate diploma instead).
- Your transcript will record that you scored 0 in the project. Employers will want to know why.
- If an employer asks us whether you are honest, we are **legally obliged** to tell them that you plagiarized.



# Keep backups on SVN

- You should backup your code using SVN.
- You should backup regularly, preferably **every day**.
- If you do not backup **at least once a week** you may be accused of plagiarism.
- SVN helps you to keep your code safe, and it helps us to monitor your progress.



# “I cheated because I can't program”

- Supervisors assume you can program, but... if you tell your supervisor that you can't program they can alter the project, and assess your ability another way.
- Most students in this category do get an MSc, **provided they don't cheat!**
- If you are worried about your programming, then **talk to your supervisor as soon as possible.**



# Plagiarism stats

- 164 plagiarism cases in School in 2019/20
  - 130 cases were MSc students
- Around 10 cases in MSc projects
  - >3 resulted in no MSc
- When writing your dissertation, think very carefully if you are using the copy/paste functions



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# PROJECT REGISTRATION



# Interested in an industrial project?

- Prepare a CV!
- Apply by the deadline.
- In parallel consider other options as acceptance is not guaranteed.



# Your own project topic?

- Talk with a supervisor!
- Deadline is earlier.
- Can be agreed **much** earlier.
- ~~• Get the supervisor to sign your form.~~
- Submit the form by the deadline to me by email.



# Choice from supervisors' suggestions

- Choose **four** projects.
  - At least three supervisors!
  - About  $\frac{1}{4}$  of students get their **fourth** choice!
  - Seeing supervisor first/last does not matter.
  - Supervisor cannot promise s/he'll supervise you.
- Ask supervisors further details about projects! Many projects can be adjusted to match student preferences. Check!
- You commit to **all four** choices.
- **DON'T JUST FILL YOUR QUOTA OF FOUR!**



## Allocations from previous session:

- 40% first choice, 13% second choice, 24% third choice, 23% fourth choice.
- 33% different supervisor!



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**WITH INDUSTRY STUDENTS**



# Continue with Registration!

- Do you have a signed document with a secured placement?
- If not, proceed with registration like everyone else!
- Continue with the project until you receive final confirmation that your placement has been approved



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# SUMMARY



# What is next...?

- Read study guide.
- Book: Projects in Computing and Information Systems. A student's guide. 2<sup>nd</sup> ed. Christian W. Dawson
- Take note of deadlines and important dates
- Choose your topics!
- More information on the web page

<https://campus.cs.le.ac.uk/teaching/resources/C07201/>

- Calendar
- Information about plagiarism
- Student Support and Development Service
- Presentation and writing skills
- Template for deliverables