

MSc and Diploma PROJECTS

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Web Information on Projects

- Module descriptions at <http://www.cs.york.ac.uk/courses/>
 - The formal description of each project module
- Definitions at <http://www.cs.york.ac.uk/projects/ProjectSpecs/>
 - The formal definition of each course's type of project
- Students' Handbook 2007-08:
 - chapter 13. Projects describes limits, penalties, submission
- Project website <http://www.cs.york.ac.uk/projects/>
 - Information for students
 - Marking information etc.
- CSW module notes, taught to undergraduates and MScNCs, but useful for all: <http://www-course.cs.york.ac.uk/csw/>

What's covered by these notes

- Full time MScs
 - SWE (Software Engineering)
 - NC (Natural Computation)
 - IT (Information Technology)
- Part time MScs
 - SCSE (Safety Critical Systems Engineering) MSc
 - GTC (Gas Turbines) MSc
- Diplomas

Where we are..

- You have already started an MSc project
 - If you think you have not... see me later!
- You have a project supervisor
 - If your supervisor is a member of teaching staff, they have taken over completely from last term's supervisor
 - If your supervisor is a **researcher**, your old supervisor still sees you for pastoral issues
- You have the original project proposal
 - These proposals should conform to the specification for each MSc course's projects

ADMIN

This is an extract of information that you can find on line and in the Student Handbook.

The links are on slide 2.

Size of projects

- Each MSc course has a different sort of project
 - Most MSc projects are allocated 90 credits
 - For some, this is a 10 credit preparation and an 80 credit project
 - IT and GTC projects are only 60 credits
 - Each 10 credits represents an expectation of 100 hours' work and a mark out of 50
- Diploma projects are usually 10+20 credits
 - 10 credits is often done before transfer to the diploma

Preparation and planning

- Some projects start with a formal period for preparation (PPC)
 - There is no formal break or milestone between PPC and the main project
 - Preparation = literature review, sorting out kit etc
 - Useful for all MSc projects
- All full-time MSc students should write a schedule
 - discuss it with supervisor by early in the Summer Vac
- A supervisor may require an interim report
 - If this happens you are **required** to produce the report by the date you are given by the supervisor

Part-time MScs: SCSE

- SCSE project is worth 90 credits
- A SCSE project that takes 18 part-time months
 - draft literature review should be sent to the supervisor after 4 months
 - mid-project progress report and outline of final report submitted after 9 months
 - project supervisor should be asked to comment on a final draft before submission
- SCSE Diploma students should consult the web and their supervisor for details

Part-time MScs: GTC

- GTC project is worth 60 credits
- A GTC project that takes 12 part-time months
 - draft literature review should be sent to the supervisor after 3 months
 - mid-project progress report and report plan submitted after 6 months
 - project supervisor should be asked to comment on a final draft before submission

Changes to the Project Proposal

- You selected a project based on the project proposal
- The project is **NOT** marked against the original project proposal
- Most projects diverge from the original proposal
 - You decide the report title about a week before hand-in
 - Use a descriptive, meaningful title for what you actually wrote up
- If the project direction changes significantly you might want to agree a new outline with your supervisor
 - This can be re-checked (by the supervisor's nominated checker) to make sure it still meets the specification for that MSc course's projects

Hand-in (all students)

- All MSc projects are due in Vac/11/Fri
 - 12 September 2008
 - by noon, as always
 - Some Diplomas have earlier submission
 - If you are doing a diploma, check with your supervisor
- The details of what to submit and how are in the Students' Handbook
 - Two, unbound paper copies
 - An electronic submission for the archive
 - Instructions on Project site and at <http://www.cs.york.ac.uk/projsubmit/projet.html>

Presentations

- Every student gives a project presentation
 - details later
 - These are usually on Vac/12/Wed and Vac/12/Thurs
 - 17 and 18 September 2008
- Worth 5% of the total project mark
- The presentation is **compulsory**
 - consult BoS Chair (Chris Kimble) and your supervisor **immediately** if you have a problem with this

Supervisions (Full-time MScs)

- Supervisions should be roughly weekly, throughout
 - average of **30 minutes per week**
- Supervisors take holiday and go to conferences
 - Ask your supervisor when they will be away
 - Before your supervisor leaves, ask who is covering for them
- If you have any problems, ask your supervisor, or the person covering for them, or any other academic
 - If you a big problem, do not wait for the next scheduled meeting
 - Consult Pauline on Reception, or the General Office, if you are not sure what to do or whom to see
 - We can only help you to sort things out if we know that something is going wrong!!!

Supervisions (Part-time MSc)

- Part-timers are asked to see project supervisors at least twice a term
 - that is, on average, at least 8 times a year
 - You should also contact your supervisor more often to keep them in touch with progress
 - As for full-time, discuss any problems, and do it as soon as they arise
- There are set supervision weeks, designed to help students get time off work:
 - Sum/12 of each year and Spr/1
 - Normally requires the students to be in York
 - Plan these with your supervisor, so you are both available!
- Supervision weeks co-incide with SCSE checkpoints

Timing, marks and penalties

Time

There are normally no extensions for projects

- Scope the work to fit the time
- Note what you don't have time for
 - You can write about what was left out in "further work"
- Write the report about what you had time for
 - Make the scope clear in the introduction section
- If you are ill, or have other problems, talk to someone - typically, your supervisor or BoS Chairman (Chris Kimble) - as soon as possible
 - close to or after submission is normally too late!

Marking Criteria

- Only the **report** and the **presentation** are marked
 - These are marked against the formal definition of each course's type of project (see slide 2)
 - Project marking forms and other information are on the projects website
- The project pass mark is 50%
 - You must pass the project to pass the degree
 - To pass, the report must meet the definition of the relevant MSc course's projects

What's marked by whom

- The report gives a mark out of 95%
- The presentation gives a mark out of 5%
- The report is marked by your supervisor and a second marker
 - There is an elaborate system for moderating disputed marks
- Presentation is (normally) marked by the second marker of your project and a session moderator

Report Length limits and Penalties

- Length limits and penalties are in Students Handbook, section 13.1.
 - Check yours, and make sure that you and your supervisor agree!
 - You must be inside both the page and word limits
- **Limits not targets**
 - Concise project reports are best
 - Don't pad out the report to get close to the limit
 - Proof-read and edit the report, even if it is already inside the limits
- In the report, you can designate **unmarked appendices**
 - Supplementary material that is not marked and not included in limits
 - In the declaration of the number of words and pages, you state which appendices are included and which are excluded
 - Those that are excluded are not marked
- The bibliography is not included in the limits but is marked

Project and presentation feedback

- Overall marks, including the project mark, are available in November
 - check the date nearer the time
- Feedback is sent with the returned copy of the report in Nov/Dec.
 - Note that, due to time constraints, the report feedback is an edited combination of the marking comments recorded on marking forms, and is not written specifically as feedback to the student

MASTERS LEVEL: what it means for projects

For York Computer Science MScs
and Diplomas

MASTERS Definition

Masters (M) level is nationally defined; it can be summarised as implying:

- Systematic, comprehensive understanding
- Critical awareness and evaluation
- Original knowledge or application

Project specifications on the projects website have interpreted this for each course

- See slide 2

Diploma Projects

Diploma projects are also Masters (M) level

- Scale, scope reduced
- Content is masters standard
- Systematic, comprehensive understanding
- Critical awareness and evaluation
- Original knowledge or application

Critical evaluation and justification

The project must meet general Masters criteria:

- Introduce and justify your method(s)
 - Positive and negative points
- **Critically** evaluate literature on the general area, your specific problem area, etc
- **Critically** evaluate all aspects of the outcomes of the project
- Do not assume that the reader already knows the literature
- If you don't know what "critically" means, discuss it with your supervisor, this week!

Characteristics of projects

- Check the project specification for your MSc course
 - Some MScs have special criteria that must be met
- In particular, MSc SWE students must write a software engineering project report
 - MSc SWE students **MUST** do this
 - In the past, students have failed because their projects did not meet course project criteria

Report explains context and motivation

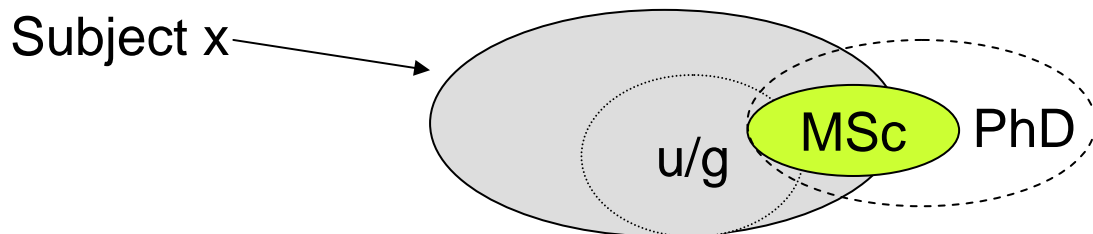
- Motivation makes clear why the project was worth doing
 - Motivation should make reference to literature (*including WWW sources*), other applications or products, previous attempts at the problem, as appropriate
 - The context and background of the project must be clear
- A good, critical review should reveal the project motivation

Report Discusses Methods

- Report must discuss the method(s) or approach
 - Justify the method(s) or approach(es) used
 - Note that "it is the approach that I know best" may be a valid justification
- Explain why each method (etc) is appropriate to this sort of project
 - Did the approach need modification?
 - Was the whole approach relevant?
 - Were there parts of other methods added in?

Originality

- Masters level is at the forefront of knowledge:
 - Research in a new area of computer science
 - Extending an existing approach to a new area
 - Developing a new approach to an existing problem
- Original aspects should be clear in the report
 - Summarise the contribution of the project in the Introduction/Conclusions



A good report in "Lifecycle" style

An engineering lifecycle is a good model for the main sections of a project report:

- Requirements: context, constraints
- Design: may be several stages
- Build: software, hardware, proof, experiment...
- Evaluation: product, method, results
 - relate results to requirements, comment on validity of method etc

Everything needs to be justified and explained, in the context of literature, previous work, etc

Planning and preparation for the Project

Project planning

Planning is **essential**

- You need to work on your own plan
 - ask your supervisor to comment on it, but don't expect them to plan your project for you
- You might identify and schedule milestones
 - An interim report, lit. review, setting up kit, etc
- **Write-up:**
 - how long do you think need? Double it!
- Write an outline plan as soon as possible

How to use your plan

- You cannot change the project deadline, but you can change your project plan
 - Use your plan to spot when things start to go wrong
- If you change emphasis, or something takes a lot longer than planned, revise the plan:
 - Can you **limit or change your objectives?**
 - Revise the plan to the new objectives
 - Check with your supervisor that you still have the right stuff for a Masters project

Plan your Reading

- Read round your subject area and take notes
 - You need to demonstrate a good understanding of the subject area
 - If you've done a related module, follow up on this as well, but you need to go beyond the taught material
 - You don't have to read everything in detail
 - It's an MSc not a PhD - you do not need complete knowledge of the area, but what you have needs to be sound
- Look at publications (books, papers...), the web (papers, applications, tools...) and any other relevant resources
 - All these can be used for ideas, sources etc, and cited in your text

Plan your report

- What will you use to write it?
 - LaTeX or Word, or something else?
 - Do you have the right software, skills etc?
- What will you do about figures, diagrams, citations etc?
 - Proprietary approaches, integration with text, cross-referencing etc.
- Where will you work, save your work?
 - Think about the need to [back up](#) what you are doing
- If you want to learn LaTeX, start now!
 - A good method is to get a source file from someone and hack it!

THE REPORT

Things to avoid and to do in report

- Don't use fancy page layouts
 - but do make it easy to read, with section headings, bullets etc
- Don't try to "sell" your product
 - And don't embellish the truth
- Don't repeat content
 - but do provide clear "waymarks" through the text
- Remember to spell check and proof read
 - and check report structure, appendices, references...

Avoiding plagiarism

PLAGIARISM INVESTIGATION IS NOT FUN

For you or for us

- Make sure you understand the department's rules and the University penalties
 - Check the Student's Handbook chapter 9
 - Check the plagiarism course on the VLE
 - Discuss referencing with your supervisor
- Put citations in as you write, not afterwards
- Cite all uses of other people's material, not just direct quotes
- Always ask if you are not sure

What citation style?

- Chose a citation style and plan how to use it
 - Decide what in-text markers and bibliographic entry format to use
 - Record publication details as you find material
 - Look at citation and bibliographies in computer science journal and conference papers to see what styles are available
- LaTeX supports several styles, and is almost idiot-proof
 - But do ask for help - it has a few idiosyncrasies
- Cite all ideas, figures, tables, data, text, code, etc.
 - Cite a published version if possible
 - So, if you have used a web source of something published (eg in a Journal), use the full publication details, not just the website
- A good guide is that the reader should be able to easily find the source if they want to know more

Writing and checking

- Writing a Masters project report takes a long time
 - It is up to you to plan the writing of your report
- You can get some help:
 - You can ask family, friends, students from other departments, a commercial typist etc
 - But be aware that they may have different ideas about how to present a thesis and how to cite material
 - You **must not** ask someone from the Department - this risks allegations of collusion
- Ask your supervisor to comment on a draft
 - Do **not** expect your supervisor to proof read it
 - Do **not** expect your supervisor to repeatedly read the same section, or to check your corrections
 - Make sure there is plenty of time for the supervisor to read it!

What you can assume of the reader

- Masters projects are specialised, but the report should assume that the reader only has a general computer science background
 - Write to inform the reader
 - Do not assume that the reader knows the area, or the literature
- Briefly present the specialist background needed
 - Give explanations, details, follow-up sources
 - You can use “unmarked appendices” for supplementary material that the reader might need
 - Make sure that specialist terms and acronyms are introduced and explained properly
 - You could put a glossary in an “unmarked appendices” to help the reader

Report readability

- A good report has lots of good-quality content, but is easy to read
 - Look at published academic papers for style tips, and consult the marking criteria
 - Try to write clearly and objectively, avoid superfluous adjectives and padding-words
- Put technical or secondary material in appendices
 - A report is hard to read if it has long sections of code, big tables, multiple diagrams, or lots of secondary detail
 - Put full versions in a well-labelled and referenced appendix, and extract interesting examples for the report text
- Use a clear layout with headings, bullets and white space
- Make sure all tables, figures etc are clearly labelled, explained, and cross-referenced in the text
 - Remember to cite sources in the captions as well as the text

Help to navigate the report

- A project report is a long document
- Even the nicest report needs "waymarks"
 - Introduce every chapter and section
 - make clear why a section is there, and how it fits in to the report structure
 - Conclude chapters and major sections with a summary of key points to take forward
- Reports should not have surprises
 - They are not novels so you do not need to develop a plot
 - The abstract and introduction should state clearly what the project is about and what it achieves
 - This is part of one of the marking criteria

Referencing and citation - AGAIN

PEOPLE FAIL BECAUSE OF PLAGIARISM

UK academic style is to **explicitly** reference

all work that is not the author's own

- And any work that the author has published elsewhere

You **MUST** cite, in text, explicitly, often..., all consulted:

- Books, Journal and conference papers
- Web sites, lecture notes, provided source code, other people's designs, etc
- And anything else that is not your own project work

You **MUST** cite the sources of diagrams, tables, code, etc

You **MUST** cite implicit use as well as quoted material

Citation

- Use your chosen referencing style consistently
 - eg if you use [1], [2]... in the text, put **full** references in bibliography
 - [1] F. Bloggs, *My Story..*, 1990...
- **Every** time you use a source, even if it is only an indirect reference, add a citation eg [1]
 - Cite every time, even if a source is used many times
 - **Direct** quotes must be in quotation marks, "thus"
- If in doubt, put in the citation
- Talk to your supervisor about it

Plagiarism Detection

- Project reports may be submitted to automated plagiarism detection tools
 - These detect any text that is similar to a published source
 - Alerts to possible plagiarism
 - The tools are thorough
- If the tool finds “plagiarised material”, staff review its evidence
 - Decisions are taken by staff, not by the tool
 - Only the human can tell if there is adequate citation
- Note that staff often spot plagiarism without using tools
 - They read widely, and supervise a lot of projects

Hints for writing a review

- It is not sensible to quote long passages from published sources
 - You get no credit for copying other people's work,
 - even esteemed lecturers
 - You need to extract key facts or ideas, critically evaluate, compare sources etc.
- Illustration follows

Example literature use (1)

Suppose your project is on transaction modelling, an advanced area of relational database research

- You need to summarise part of relational database theory that the reader “should know already”
 - State key definitions, citing module notes or a text book
 - Use bullet-lists or tables for conciseness
 - Cite the source clearly on each definition
 - This could be early in the Review, or even in the introduction (assumed background)
 - You could even use an “unmarked” appendix and reference this from the main text

Example literature use (2)

- Then, thoroughly review existing works on transactions and transaction modelling
 - This is not common knowledge, so needs more depth
- For instance, you might include a review section on Transactions
 - Give definitions from literature (with citations)
 - Discuss their merits critically and reach a conclusion about the appropriate definition for your project
- Do the same for transaction modelling, modelling styles that could be used for transactions ...

Project Presentations

5% of the project marks is awarded
for the presentation

Project presentation

See project website, bottom set of bullets

- This gives information about what is available, etc
- The presentation is usually marked by the second marker of the report, and the session moderator
 - supervisors are not involved
- You give a 10-minute talk, followed by questions
 - Timing is strictly enforced
- Talks requiring special facilities (eg hardware demos) **must** be notified 14 days before report hand-in
- Presentations are co-ordinated by Dr Adrian Bors
 - (adrian@cs.york.ac.uk)

Presentation contents

Recommended presentation contents are:

1. Project title and objectives
2. Context
 - **quick** summary of background and literature
3. How you went about it (method, approach)
4. What you achieved
 - include a demo if you can
5. Evaluation - how you evaluated it and what you concluded

GOOD LUCK!