# General

## Introduction Video (Done)

## Level 4 Project Student Guide (Done)

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| Time Allocation   * 400 expected hours * 16 hours a week * 40 hours a week during week 11-13 in semester 1   Assessment   * 5% Oral presentation * 85% dissertation * 10% professional conduct * no mark for the product, 100% dissertation | Learning Outcomes (these will be your dissertation headings)   * manages and organises work * choose among technologies, tools and approaches and apply them effectively * synthesises technical skills to address a single problem * develop a substantial product with technical achievement * evaluate the outcome of the work * conduct in a professional manner, taking responsibility for the progression of the project, recording their time and use supervisor’s input * write a coherent, literate dissertation that documents the project, justifies decision made and set the work in context * present their work orally to a technical audience * produce video summaries of their work | Supervisor   * meet once a week during term time * duration is 30 minutes * other contact is their options   Dissertation and Project   * build a good product as well as a good dissertation, don’t miss the dissertation   Project Allocation   * staff proposed * self-defined project * deadline for self-defined project   Project Preparation   * reading upon APIs, languages, tools or theory   Deadlines   * Project Begin – S1W1 * Project Crunch – S1W11 * Project Status Report – S1W12 * Dissertation and Code Submission – S2W12 * Presentation Day S2W12 |

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| Project Types   1. Product Style project  * strong design * programming * testing focus  1. Research Style Project  * strong analysis, empirical work * All projects must have an evaluation portion  1. CS: product focused projects  * design and implement a software system that solves a problem * PSD practice | Professional Conduct   * attendance * minuting meetings * preparation of meetings (prepare questions to ask at meetings, progress to show, discuss, status report) * logging your time spent on the project, see diagram example * must use version control * reference, bibliography, reference manager platform * what to cite (text, figures) * ethics – human participants – school ethic procedures link | IP, Commercial Partners and employers   * IP, you have it all * NDA, non-disclosure agreement * partners   When things go wrong   * late submission * non-submission |

## Assessment of Level 4 Project (Done)

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| Guidelines for student, supervisors and readers   * dissertation, 40 pages, 85% * public presentation, video summary, 5% * professional conduct, 10% * marks will be awarded on the basis of the dissertation. Examiners look at the dissertation much more than the product   Assessment Criteria   * supervisor can vary the rate by +-5%  1. Marking process  * think about written justification for the band  1. Grade Allocation 2. Analysis 15%  * Formulation of the problem * understanding of context * approach to solve the problem * use relevant literature and existing software products * capture the requirement | 1. Software Product 40%  * Software Design * Implementation/ whether functional, reliable, robust, efficient, usable, maintainable, well documented * documentation * product represented adequately in the dissertation  1. Evaluation 10%  * testing * user evaluation * suggestion for future work  1. Dissertation 20%  * completeness * coherence * organisation * literacy * bibliography * explain the problem * how the software was designed (design process), implemented, tested and evaluated * citation and bibliography | 1. Professional Conduct  * engagement with the supervisor, do student attend meetings and engage effectively, was time used well * independence * time management was time managed effectively * tool use to manage project * did the student lead the project  1. Presentation  * Did the content reflect the knowledge and understanding of the work done * Visual Aids * Was the delivery fluent and confident with good eye contact * was the video used effectively to communicate the ideas concisely   Reconciliation and Arbitration   * marker difference in final band |

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| Grade Descriptors   * project marking scheme. Analysis (problem, survey, approach) Product (design, implementation, documentation) Evaluation (evaluation, suggest for future work), Dissertation. Overall (judgement, skills) * presentation marking scheme. Organisation (knowledge and understanding of the work done, insight into the work) Visual Aids (attractive, informative) communicating effectively, summary. Delivery. Fluent, confident, eye contact * Professional Conduct. tools, use of time, professionalism, status report, demo ready before meeting, review minutes taken, polite * tools, version control |  |  |

# Guidance Lectures/ Sessions

## Guidance Lecture Slides 22 Sep (Done)

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| Done  The project   * 400 hours * 30 minutes meetings * 40 page dissertation   Learning Outcomes   * address the learning outcomes in the dissertation * choose among technologies, tools and approaches (all possible approaches) * evaluation * dissertation aims to document the project and justify the decisions made * possible components (analyses, design, develop, research, plan, manage, document, coordinate, evaluate, summaries)   Project   * requirement, design, implement, document | Done  What is the role of a supervisor and a student?   1. Supervisor roles  * technical expert – suggest relevant technology * suggest on specification and tasks and make demand * reflect on the issues that are resolved later * guidance on common problems and best practice  1. Student Role  * generate code, solves problems and get work done, lead the project * bring new ideas, research all possibilities * documents and organises your own time * access to resources * document and monitor your progress * configure environment * learn LaTex now | Done   1. Typical path of a project  * semester 1 – product coding and status report * semester 2 – evaluation and dissertation * deadline – hand in dissertation, code and video * make whole year plan * the outcome is the dissertation not the product   Types of Project   * user stories * strong design, programming * testing * discuss and argue your development process logically   Project Assessment   * demonstrate technical mastery * document developmental process * video presentation 10-15 minutes * no marks for the product but product means good dissertation * there is no point in doing development work you will not be able to write up |

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| Done  Dissertation assessment criteria   * analysis - clarity of thoughts, problem formulation, understanding of the background and context * product – quality of research, innovation, rigorous in thew ay it is conducted, software design, implementation and documentation * evaluation of result, effective summarisation * dissertation – completeness and coherence, organisation, literacy, bibliography, use of figures and diagrams * your supervisor may choose to adjust the weighting by up to 5% at their discretion * product is not the end goal * learn to approach the problem * learn how to choose platform * learn to choose between designs * it is the things that leads to the final product * argue the design process you take * justify why some tools are appropriate, some are not * rigorous in literature review * is the process of the work done, decisions? * reflections   Marking process   * marker will be your supervisor * second marker will be another member of staff | Done  Reconciliation and arbitration   * can ask supervisor for comments and feedback after the grade publication * if marks are differed by 2 grades, supervisor overall grades   Grade Descriptors   * use them as your dissertation headings   Professional Conduct   * leadership and independent thought * come up with ideas * grade based on supervisor observation   Time Management   * record your time spent on the task – mandatory – template on Moodle * ask supervisors for feedback at the end of a meeting * use software to manage your time   Time in the project   * 15 hours a week * 40 hours after no lectures   Project Log   * templates on moodles * logging – update the log everyday * example logging * conform the format of the time log * /timelog.md * you have to follow the format precisely * update the log at least every day | Done  Meetings   * get advice and directions * report progress, discuss ideas, prune down options, technical details, suggested reference, feedback on your progress * prepare the powerpoint, address your goals * plan for last week, what you have done, what is your goals for the following week * feedback on progress   Not the purpose of the meeting   * not debug your code * only high level advice * don’t just ask what to do. Have options prepared to discuss and ask for feedback   Basic Meeting Organisaiton   * 30 minutes each week * could be fortnightly hour * don’t fill time * if 10 minutes do, do 10 minutes * meeting at the start of the project will last the allotted time, but may get shorter as the project runs. Don’t feel you need to fill the available time * pre-meeting – status report, questions * post-meeting – minutes, plan |

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| Done  What you should have every meeting   * status report – what you have done that week, send status report 24 hours in advance of the meeting, refer to the plan/ minutes from last week in the report * questions – give out all possible options and ask for suggestions, ask for explanation of concepts or ideas you don’t understand * minutes – slack channel, GitHub, share them with the supervisor – example minutes * plans – for next week in a meeting, record plans electronically, discuss the progress in the next meeting – see plan example * video recording * the supervisor may forget your plan last week. Bring them up when you run through the status report.   Tool Use (search engine)   * version control – github, gitlab, bitbucket * typesetting, keep dissertation under version control as well * reference management Harvard, literature reviews BibTeX, Papis * build automation folder structure * external backup * how to commit – what branches, explain your options * document in the dissertation how you would run the program | Done  Don’t use the following tools   * write source code in WordPad * try and build your software with arcane Bash scripts * draw diagrams for your report in MS paint   Ethics   * ethical approval * summary checklist * get approval from the school if can’t sign the checklist   GDPR (Data Protection)   * if you collect any personal data during the project * GDPR Guidance – e.g. don’t store personal data on the cloud service (GitHub) – how to store then? * capture data with explicit consent * keep personal data encrypted * users have the right to view and delete their data held about them * store personal data (name, address) anonymously where possible | Done  Non-Disclosure agreement   * how to seek NDA so our project doesn’t get exposed in a presentation – ask supervisor * NDA project work must not uploaded in the usual way. But with encrypted-version tracked USB sticks. Password must be sent separately and securely to the markers * presentation must be done privately in a closed environment   Intelligential Property |

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| Done  Status Report   * December deadline * 1-3 A4 pages * short, precise, professional * start it in December * submitted on Moodle and email to supervisor * cover project description – what has to be done, general problem statement * progress report – what I have achieved as of the time of writing * plan of work – a detailed plan of work with deliverables/ milestones, for the remainder of the project * problems and risks – difficulties faced that you foresee or have experienced | Done  Dissertation   * working towards a dissertation not a product * problem with and without specifics * abstract problem to implementable parts * show logical and clear train of thought * chronological report is not appropriate. * reflect on what you have done * pull the key problem and form the argument * evaluation shows you have solved the problem. Done by asking questions and seek evidence to answer them | Done  Research   * cite academic literature * research methods * see whether your project is researched   Taking the project forward   * networking * employers * marketisation * commercialisation * research * publication |

# Week 1 – 2

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| Meet your supervisor   * background * Plan the rest of your project * write a timeline (week to week plan) * how the project is run for the rest of the year   Download the template for project  Create a version control repository for your project before beginning any work  Install and configure the software and tools you need to make progress  Set up tools such as issue trackers to help you keep on top of things |  |  |

# Bidding (Done)

# Timeline

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| Done  4 – 18 December no classes, work on project for 40 hours a week  18 December - submit a one page project summary to the supervisor and Moodle  26 March 2021 - Project submission deadline |  |  |

# Status report

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| Done  18 December 2020 5pm – short status report on the project  Requirements   * 3 pages long * project description – clear description of the project – what it is that has to be done * progress report – what you have achieved as of time of writing * plan of the work – a detailed plan of the work with deliverables for the remainder of the project * problems and risks and any difficulty that you foresee and have experienced   Format   * short and focused * submit report on Moodle and give a copy to the supervisor * single PDF |  |  |

# Guidance

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| Done  Time Records (Logs)   * keep a lightweight log book of time you spend on your project * see template * record of what you have done (everything) * hourly work record, keep up-to-date daily | Done  Ethics   * link to school ethics guide | Done  Plagiarism   * do not copy text, figures, code or any other material without clear and specific attribution * link to plagiarism policy   Link to plagiarism policy   * acknowledge the source of information you acquired to use for dissertation |
| Done  Hall of Fame   * example dissertation * see and compare their table of content * functional and non-functional requirements * ethics   2018-2019   1. quantum computing simulators 2. interactive water feature for public squares   2017-2018   * nothing noteworthy | Done  Time log templates |  |

# Dissertation Submission

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| * pdf – dissertation * in pdflatex using l4proj.cls class file * appendices and bibliopgrahy are not included in the page count. Marker can ignore the content of the appendices when assessing the report   Educational Use  Dissertation template |  |  |

# Video Presentations

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| * narrated vide of your presentation slides with your dissertation * no longer than 10 minutes * MP4 screen capture with slides PowerPoint * read project marking scheme when preparing for the presentation * presentation should summarise the work, use visual aids and talk confidently * no more than 230 MB, MP4 format, H.264 encoded, 1080p, AAC audio * you don’t need to be appeared in the video * file naming in Moodle * use VLC to verify – Moodle * use Open Broadcaster Software * use Handbrake to compress or change format of the video files | General Guide to remote video presentation   * include presentation and speaker view * include subtitles * following instruction on adding subtitles |  |

# Project Template

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