



COMPUTING HONOURS PROJECT (COMP10034)

MODULE HANDBOOK

2018/19

Module Co-ordinator: Dr Mark Stansfield
Email: mark.stansfield@uws.ac.uk
Tel: 0141 848 3963
Room: E203 (Paisley Campus)

What is the Computing Honours Project?

The Computing Honours Project is a **double module**, running throughout Terms 1 and 2.

The Computing Honours Project can be considered to be the **most important** component of the Honours Year.

Each student undertakes substantial individual investigation, research and development which characterises their programme which will lead to the student undertaking practical work or some sort using computer technology / IT, most frequently achieved by the creation of an artefact as the focus for covering all or part of an implementation life-cycle.

All Honours Projects should reflect the aims and learning outcomes which characterise your particular programme, as set out in the programme specification. This is why all Honours Project Specification forms must be signed by your particular Programme Leader.

The Aims of the Computing Honours Project are ...

- To demonstrate the capacity for sustained independent and high-quality work fulfilling an agreed specification.
- To demonstrate the ability to analyse, synthesise and creatively apply what has been learned in their programme as a whole.
- To develop and demonstrate the ability to generate personal initiatives, set achievable goals and systematically achieve them.
- To demonstrate synthesis of information, ideas, and practices to provide some quality solution together with an evaluation of that solution. That solution should include students undertaking work of some sort using computing technology / IT.
- To demonstrate the ability to communicate clearly the work of the Honours Project by means of an oral presentation.
- To develop and demonstrate the skills necessary to write a full, detailed and coherent report, in which the chosen solution is presented in the context of the problem domain, and which includes a critical appraisal of the work done.

In addition, through their Honours project students should:

- Demonstrate an ability to self-manage their own Honours Project.
- Demonstrate critical self-evaluation and reflection of the process of undertaking and managing the Honours Project process.
- Ensure that their Honours Project meets some real-world need or issue within a wider context that is related to their Honours Project.

- Attempt to apply some element of creativity and innovation in attempting to address or explore some underlying issue or problem.

Role of the Supervisor and Moderator

You can expect your Supervisor to provide guidance, advice and feedback on your Honours Project throughout Terms 1 and 2, however their role is not to do the work for you - that is your responsibility.

It is most important that you arrange to meet regularly with your Supervisor so that they are kept aware of the state of your project and may then advise and guide you accordingly. It is your responsibility to ensure that regular meetings with your Supervisor take place.

The role of the Moderator is to ensure that the project specification is satisfactory and also to read and second mark your final Honours Project report.

Your Honours Project Moderator may also be consulted for advice and/or guidance on your project where appropriate.

Any problems in arranging such meetings should be referred to Mark Stansfield.

Each Honours Project will have both a **Supervisor** and a **Moderator** who will be academics drawn from the School that is involved in your programme.

An agreed **Project Specification** for your Honours Project is developed at the start of the project in discussion with the Supervisor and Moderator so that:

- The Honours Project objectives are reasonable, well-defined and capable of being achieved within the time available.
- That you have at least two committed members of staff with areas of expertise in relation to your Honours Project topic that you can call upon for advice and support.

The Supervisor and Moderator will formally mark your Honours Project using the agreed marking scheme outlined in the Project Specification.

How much time should I spend on my Honours Project?

Since the Computing Honours Project is a double module worth 40 credits this equates to a total of around 400 hours spent on your Honours Project. Since the academic year lasts 30 weeks, this means that you should be spending around 13 hours a week on your Honours project.

It is important that you pace your work and do not leave it until the last minute in relation to key deadlines for submission of deliverables. Work that has been rushed or produced at the last minute tends to be of a lower quality. In addition, it does not leave you adequate time to get feedback and guidance from your Supervisor and act on it.

In addition, in order to produce work of a quality and standard that is a 2:1 or 1st class you may have to spend more time and effort on your Honours Project at key points in the academic year.

Timetabled classes and Supervisor meetings

There are timetabled classes scheduled during Terms 1 and 2 aimed at providing information, advice and support to help you produce a Computing Honours Project that is of a high quality and standard.

Project Lectures and Tutorials

As part of the timetabled classes, two seminars will take place during the lecture/tutorial slots during the academic year to allow you to briefly present your work to other students and share common problem and issues, as well as receive advice and support.

Honours Project Lectures will cover area such as:

- Introduction to the Honours Project
- Advice of producing a Project Specification and ethical approval
- How to perform a literature review
- Project management
- Research methods
- Analytical and evaluation techniques
- How to write an Interim Report
- Project presentation skills and advice
- How to write the dissertation

*****See the Computing Honours Project (COMP10034) Moodle Site for the Lecture Slides, Handouts and Learning Resources available to Honours Project Students*****

Supervisor Meetings

You should meet regularly with your supervisor. As a minimum, you should see your supervisor at least six times during the year. But you are advised to meet with your supervisor at least every 2-3 weeks. If you let too much time lapse between meetings then

this leaves very little time to address and rectify and problems or issues that might be identified with your work.

It should be recognised that although you need to develop a good working relationship with your Supervisor, **the main responsibility for the successful completion of the Honours Project lies with yourself.**

Where do I start?

Students decide on a project, either by selecting one from the circulated list of projects proposed by members of academic staff, or by discussing their own project ideas with either the Honours Project Coordinator (Mark Stansfield) or a potential Supervisor.

*****See the Computing Honours Project (COMP10034) Moodle Site for details of Honours Project Ideas and Suggestions as proposed by academic staff *****

In choosing a suitable topic, students can either:

- Select a topic from the lists and discuss with the academic staff member from the School.
- In discussion with an academic staff member from the School adapt an idea from the list.
- In discussion with an academic staff member from the School come up with their own idea for an Honours Project.

There is the potential for a small number of Industry-based Hons Projects available through companies who have indicated an interest in participating in Hons Project work. If you are interested in this type of project (which may only be available for certain programmes – depending on the nature of the company and the project) then contact Mark Stansfield or Tom Caira.

When a student has decided on a project, which a member of staff has agreed to supervise, the student is required to complete a 1 page **Project Specification** (see Appendix A and B), in consultation with the project Supervisor. A Moderator is then assigned to the project, who checks and may contribute to the Project Specification. Students can approach a Moderator of their choice if they wish – however, this is subject to the Moderator's availability.

The specification is then subject to approval by the Year Leader and an External Examiner, who may require a specification to be revised.

You should inform Mark Stansfield and your Supervisor of the title of your project, as soon as possible after the beginning of the term, so that a Moderator may be assigned to your project if one has not been proposed by your Supervisor.

It is **your responsibility** to ensure that the Project Specification, completed and signed is handed in at the School of Engineering and Computing Student Office (E106) by **FRIDAY 28th SEPTEMBER 2018 no later than 4pm**. The specification must also be emailed to Mark Stansfield. This task is complete only when both copies are received!

Students who fail to meet this deadline can expect to be penalised in relation to the project management component of the Honours Project assessment.

Equipment for Honours Projects

It is important that you check with your Supervisor and Information, Technology & Digital Services that appropriate equipment is available for your intended project. You are required to state in the **Resources** section of the Project Specification all hardware, software and other resources which will be required.

Ethical Approval

Any research that involves working in sensitive areas requires a detailed form to be completed and the proposed study to be put forward for consideration by the School of Computing, Engineering and Physical Sciences Ethics Committee.

Issues that need to be considered include:

- Are the participants and subjects from any vulnerable group or (e.g. NHS patients, children)?
- Are the participants and subjects of the study in any way unable to give free and informed consent within the meaning of the Mental Capacity Act 2005 to the best of your knowledge?
- Are you asking questions that are likely to be considered impertinent or to cause distress to any of the participants?
- Are any of the subjects in a special relationship with the applicant (e.g. family members)?
- Does your project pose any risk to either yourself or the participant?

If the answer is 'Yes' to any of those questions then you must contact the Honours Project Module Co-ordinator and your Supervisor.

It is vital that:

- Participants will be/have been advised that they may withdraw at any stage if they so wish.
- Issues of confidentiality and arrangements for the storage and security of material during and after the project and for the disposal of material have been considered.
- Issues of confidentiality have been considered in relation to the writing up of results e.g. anonymising participant and company names if necessary.
- Arrangements for providing subjects with research results if they wish to have them have been considered

The University has deemed it vital that anyone undertaking research with human participants must produce a 'Plain Language Statement' for their work and get a 'Participant Consent Form'.

*****These forms are available from the Computing Honours Project (COMP10034) Moodle site*****

If human participants are involved in the proposed Hons Project then ethical approval will need to be sought through approved mechanisms of the School of CEPS Ethics Committee.

If in doubt contact your Supervisor and the Honours Project Module Co-ordinator.

How is the Honours Project Assessed?

Assessment of your Honours Project is broken down into the following components:

Component	Weighting
Project Management	10% (Assessed by Supervisor)
Interim Report	10% (Assessed by Supervisor and Moderator)
Presentation	10% (Assessed by Supervisor and Moderator)
Final Honours Project Report	70% (Assessed by Supervisor and Moderator)

Project Management

You should aim to meet with your supervisor on a regular basis. This will:

1. Reassure your supervisor that you are progressing with the Honours Project
2. It gives you the chance to discuss problems, solutions, or new directions in your Honours Project work.
3. Enable the Module Co-ordinator to be made aware of any issues or problems and seek to address these so that the Honours Project can reach a successful completion.

In order to formalise this process, there will be **6 formal 'Management Meetings'** which you are required to schedule with your supervisor. These take place in set weeks: **Weeks 4, 8 and 11 in Term 1**, and **Weeks 4, 8 and 11 in Term 2**.

You are encouraged to have more meetings, but for those highlighted you will be required to produce documentation that will be submitted towards the **10% Project Management** component of the Honours Project module.

In advance of the highlighted meetings, you should prepare a **1 page agenda**, detailing progress since the last management meeting as well as problems or delays experienced,

along with an agenda for discussion. This should be emailed to your Supervisor by the end of the week preceding the management meeting.

After the management meeting, you should prepare a **1 page meeting report**, which should summarise the issues discussed and how they were resolved, a plan for project completion, with detailed tasks for completion before the next management meeting. Again this should be emailed to your Supervisor by the end of the week in which the management meeting takes place.

*****These forms are available from the Computing Honours Project (COMP10034) Moodle site*****

Attendance at these management meetings and submission of progress reports and meeting minutes will form the 10% 'Project Management' mark.

You are encouraged to meet with your Supervisor outwith these formalised meetings to discuss your Honours Project.

Interim Report

You are required to submit an Interim Report by **FRIDAY 23rd NOVEMBER 2018** to be uploaded to **Turnitin** on the **Computing Honours Project Moodle site** no later than 4pm. An electronic copy should be emailed to Mark Stansfield – mark.stansfield@uws.ac.uk as a back-up.

You are advised to submit a draft of your Interim Report to your Supervisor for feedback by **Week 10 Term 1** so that you can meet with them during **Week 11 (w/c 12th November 2018)**. This will enable you to carry out any necessary work to get your Interim report to a suitable standard by the **Friday 23rd NOVEMBER 2018** deadline.

The Interim Report should contain:

- An introduction and overview of the project (in much more detail than the Project Specification).
- A review of the literature completed so far or other relevant background study that is related to the topic of your Honours Project.
- Progress towards your basic objectives, which may include an overview of any research methodology you have chosen with reasons, a summary of initial analysis or design, preliminary results for evaluations, investigations or evaluations undertaken etc.
- A summary of progress against original objectives, and a plan for completion of the project.
- Concluding remarks
- References – include full details relating only to those publications cited in the report.
- Include a copy of your original Project Specification as an Appendix.

- Include other appendices – any detailed information/data as considered appropriate.

Clearly, the Interim Report will be an account of an incomplete project. However, in assessing this report, an indication that the student has made sufficient progress will be sought. In particular, the student will be expected to have completed a literature review and to have expressed this in a critical manner.

At the time of submitting the Interim Report, some progress in the design and possibly also implementation will also be expected, and should be reported.

There will inevitably be some duplication of material between the Interim Report and the final Honours Project report. This is acceptable. However, the final Honours Project report should provide a much fuller and more complete picture of the project than is possible in the case of the Interim Report.

As a guide, the Interim Report should be around **2,500-3000 words in length**. The length of the Interim Report will depend on the nature of your Honours Project work, i.e. whether it is developmental or investigative in nature.

A front sheet should be inserted in your Interim Report that contains your:

Project title
Your name
Matriculation number
Your programme
Names of your Supervisor and Moderator

An electronic copy should also be emailed to Mark Stansfield by the submission deadline. To complete this task both copies must have been submitted.

The Interim report is worth **10%** of the overall Honours Project total.

The marking scheme for the Interim Report will be as follows:

Structure, Presentation, Style of Report	10%
Literature Review/Background study and Referencing	30%
Preliminary Work/Creative Accomplishments	30%
Progress and Further Planned Work	30%

Presentation

Each student is required to give a **15 minute** presentation on their Honours Project during Term 2 (**during Weeks 6, 7 and 8**) which will be assessed by your Supervisor and Moderator. You should be prepared to answer questions on your Honours Project from your Supervisor, Moderator and other members of staff who might attend the presentations.

Students will have the use of standard audio-visual aids for their presentation. Additional specialised equipment may be available if requested in advance. Some students may wish to give a brief demonstration of their project within the time allocated for their presentation.

The presentation may take the form of a poster presentation if students wish. There may be an opportunity for students to present a poster at an employer event at the University.

The presentation is worth 10% of the overall Honours Project total.

The marking scheme for the Presentation will be as follows:

Preparation of Presentation/Poster Material	10%
Presentation Style	20%
Content of Presentation/Poster	50%
Answering Questions	20%

You are strongly advised to discuss the format and materials used in your presentation with your Supervisor in good time before your scheduled presentation.

Final Honours Project report

The final Honours Project report should be a scholarly piece of work rather than for example simply being an account of a software development exercise. The report should include a relevant introduction, an analysis of the problem to be tackled, and the rationale for the approach adopted. After describing the accomplishments of the project the report should conclude with an evaluation and/or a critical appraisal of the work and a discussion of the results, including, where possible, suggestions for further work.

The final Honours Project report should provide:

- Elucidation of the problem and objectives of the project.
- An in-depth investigation of the context and relevant literature, and where appropriate other similar products.
- Where appropriate, a clear description of the stages of the life cycle undertaken.
- Where appropriate, a description of how verification and validation were applied at these stages.
- Where appropriate, a description of the tools to support the development process.
- A critical appraisal / self-reflection of the Honours Project, indicating the rationale for any design/implementation decisions, lessons learnt during the course of the Honours Project and evaluation (with hindsight) of the Honours Project outcome and the processes of its production (including a review of the plan and any deviations from it).
- A description of any research hypothesis.
- A full list of references in appropriate UWS Harvard referencing style.

Writing up

Detailed information on the required format of your report will be given during the Honours Project lecture classes. You should bear in mind that the Honours Project report is the main means of communicating your ideas with the examiners. It is important that you discuss the structure and content of your report with your Supervisor before beginning a detailed write up.

One possible approach is to provide a 1 or 2 page draft, indicating the headings and main points addressed in each chapter, as a basis for discussion. This will allow your Supervisor to give you comments on this so that this feedback may be helpful to you in producing your final report. You are also advised to let your Supervisor see a draft of your report, so that you can receive some feedback, before producing the final version.

The format

The length of the final Honours Project report excluding appendices, program listings etc. should be around **10,000-15,000 words, in either single or one and a half line spacing**. The length of the final Hons Project report will depend on the nature of the work undertaken, i.e. whether the work is purely investigative in nature or whether a large portion of the work involves software development work. You should consult your Supervisor for advice. The Honours Project should not be too verbose; on the other hand, you are unlikely to be able to express your ideas in sufficient detail in, say, 20 pages or so. Excessively long project reports or very short reports may be penalised.

The format and layout of final Honours Project reports of provided in Appendix C.

The report must be typed; you may use either the University's or your own word processing facilities. Use A4 size paper and allow 2.5 cm margins at the top, bottom and edges of the paper.

In addition you are expected to provide a copy of the files produced during your project (including source program and data files) on a CD or memory stick.

Final Submission

Students are strongly advised to submit a draft copy of their final Honours Project report to their Supervisor not later than Week 10 of Term 2 so that you may receive feedback and advice before submitting the final version.

You should submit a copy of your Hons Project to **Turnitin** on the **Hons Project Moodle site no later than 23:59 on FRIDAY 29th MARCH 2019**.

In addition, students should email an **electronic copy** of their Hons Project report and Project management documents (either PDF or .Word) to mark.stansfield@uws.ac.uk as well as their supervisor and moderator no later than the submission date.

The report must be correctly formatted and submitted in the correct form to be regarded as adequate for marking.

A **front sheet** should be inserted in you report that contains your project **title**, your **name**, **matriculation number** and the names of your **Supervisor** and **Moderator**. A copy of the **Project Specification** must also be inserted at the **front of the report**.

Any student handing in a project report after this date can expect to be penalised.

If both versions of the report are not received then the student is deemed to not have submitted.

Late Submission

Coursework submitted after the due date without good cause as determined by the Module Co-ordinator will be penalised by the reduction of ten percentage points from the mark awarded, provided that the work is submitted within one calendar week of the due date.

Coursework may not normally be submitted more than one calendar week after the due date.

Plagiarism

Plagiarism is defined by the University as the use of work of other students, past or present, or substantial and unacknowledged use of published material presented as the student's own work. It includes:

- The extensive use of another person's material without reference or acknowledgement.
- The summarising of another person's material by changing a few words or altering the order of presentation without reference or acknowledgement.
- The substantial and unauthorised use of ideas of another person without acknowledgement.
- Copying the work of another student with or without the student's knowledge or agreement.
- Deliberate use of commissioned material which is presented as one's own.
- Unacknowledged quotation of phrases from another's work.

If plagiarism is detected in any of your work, the University's plagiarism policy will be implemented. This is a serious offence at Honours level can lead to the imposition of serious penalties and the failure of your Honours Project. If in any doubt then consult your Supervisor or Honours Project Co-ordinator.

APPENDIX A

COMPUTING HONOURS PROJECT SPECIFICATION FORM

(Electronic copy available on Moodle Computing Hons Project Site)

Project Title:

Student:

Banner ID:

Supervisor:

Moderator:

Outline of Project: *(a few brief paragraphs)*

The proposed Hons Project should include practical work of some sort using computing technology / IT

A Passable Project will:

A First Class Project will:

Reading List:

Resources Required: *(hardware/software/other)*

Marking Scheme:

	Marks
e.g. Introduction	10
	..
	..
Conclusion	10
Critical Self-Appraisal	5

Signed:

Student

Supervisor

Moderator

Programme Leader

IMPORTANT:

(i) *By signing this form all signatories are confirming that the proposed Hons Project will include the student undertaking practical work of some sort using computing technology / IT, most frequently achieved by the creation of an artefact as the focus for covering all or part of an implementation life-cycle.*

(ii) *By signing this form all signatories are confirming that any potential ethical issues have been considered and if human participants are involved in the proposed Hons Project then ethical approval will be sought through approved mechanisms of the School of CEPS Ethics Committee.*

Appendix B

Example Project Specification

Title: Web TV Classification and Search Engine
Student: **Banner ID:**
Supervisor:
Moderator:

Outline of Project:

As the internet continues to grow in terms of digital video media – BBC, ITV, Channel 4, YouTube etc. the ability to be able to find the correct video clip becomes increasingly problematic. Video search engines currently work on the basis of video clips being tagged with keywords which describe what the major themes of the content. The proposed project aims to develop a video classification scheme and search engine that classifies video clips by converting any speech in the audio channels into text using a voice recognition engine and then subsequently classifies this text output into a hierarchical structure. Using the classification hierarchy and a text-based search engine such as Lucene the project will create a searchable index of video materials. A possible test case for the project may be an aggregator of news content.

A Passable Project will:

- (i) Review the literature on voice recognition and video search engines.
- (ii) Identify a voice recognition system that will output a text stream that can subsequently be processed.
- (iii) Develop the search engine and classification scheme.
- (iv) Develop a test case (e.g. news content aggregator) and evaluate system developed.

A First Class Project will:

- (i) Provide a more in-depth review of the literature with a detailed systematic review and evaluation of the relevant literature from specific academic databases.
- (ii) Develop a more extensive search engine and detailed test cases.
- (iii) Within the report appropriate theoretical and technical aspects will be investigated

Reading List:

Gibbon, D.C and Liu, Z. (2008) *Introduction to Video Search Engines*, Springer

Shih-Fu Chang; Wei-Ying Ma; Smeulders, A. (2007) Recent Advances and Challenges of Semantic Image/Video Search. *IEEE International Conference on Acoustics, Speech and Signal Processing. ICASSP 2007*, 15-20 April 2007.

Xiao Wu; Chong-Wah Ngo; Hauptmann, A.G.; Hung-Khoon Tan (2009). Real-Time Near-Duplicate Elimination for Web Video Search With Content and Context, *IEEE Transactions on Multimedia*

Resources: PC with a suitable software development environment.

Marking Scheme:

	Marks
Introduction	5
Literature Review	15
Requirements and Design	20
Implementation	40
Evaluation	10
Critical Self-Appraisal	10

APPENDIX C

Format for Final Honours Project Reports

The following brief notes are to help to finalise your project report. They are guidelines and recommendations rather than directives; the actual form and contents of the report is a matter for agreement between your Supervisor and yourself.

The structure and order of project reports is normally as follows:

Title Page

Library Reference Sheet (Provided nearer to the submission date)

Table of Contents

Acknowledgements

It is courteous to acknowledge help and guidance received with the project.

Abstract

This summarises the report in not more than 200 words.

Body of the document

You may decide on the number of chapters and section headings.

This should be a reflection of your project specification and for Honours Projects that are more of an investigative nature chapters can cover:

- Introduction to the area of study
- Background information and/or literature review
- Choice of research methods
- Data gathering methods
- Primary research undertaken
- Analysis of results
- Conclusions and recommendations for future work

For Honours Projects that are more of a developmental nature chapters can cover:

- Introduction to the area of study
- Background information and/or literature review
- Design of software prototype
- Development of software prototype
- Testing and Evaluation
- Conclusions and recommendations for future work

Your Supervisor and Honours Project Co-ordinator can advise you on how best to structure your Honours Project

List of References

Appendices

The appendices contain information to which reference may be made, but which is of such a detailed nature that it would clutter up the body of the report. For example, appendices might contain: detailed specifications, lists of system commands, detailed examples and program traces, user manuals, etc. as appropriate.

For Honours Projects that include the development of a prototype, complete program listings do not go in the report, though it may often be appropriate to include individual procedures and pseudo-code to explain particular algorithms. Your detailed code may be inspected by your Supervisor; to whom you should demonstrate the operation of your system (if your project produces some computing facility). The full source of your system must be included on the accompanying CD, data stick etc.