Introduction

Currently students entering MInf4 are required to choose a suitable project from the list of proposed UG4 projects. During their fourth year they must take the following two courses, the descriptions are from the official course pages:

MInf Project Planning (20 points): MInf Project Planning is the first of three courses which comprise the MInf Project process. Collectively, these courses involve the student in a substantial piece of practical work, conducted individually under the supervision of a member of teaching staff. They allow students to demonstrate their ability to devise, organise and carry out a substantial investigation into a problem in Informatics, according to sound scientific and engineering principles, and to deepen the student’s competence in a particular area of Informatics. The project will normally involve the construction of an artifact, whether software, hardware, a robotic device, some other artifact incorporating computation, or some combination of these.

During the MInf Project Planning course, the student will critically evaluate the relevant literature and develop a structured project proposal of around 8 pages. This will use the surveyed literature to justify experimental design choices, will explain key hypotheses and methodological approaches and will outline project management issues. A good plan will provide a convincing case for the high quality of the proposed project. It will show an awareness of relevant prior work and include a clear statement of the problems and hypotheses to be addressed and why they are important. It must also make clear exactly how the methods used to investigate those hypotheses will yield interesting results.

MInf Project Phase 1 (20 points): MInf Project Phase 1 is the second of three courses which comprise the MInf Project process. In MInf Project Phase 1, the student begins execution of the project plan and writes a short interim progress report, describing work conducted so far and any resulting changes to the original plan.

In fifth year they complete this with:

MInf Project Phase 2 (60 points): MInf Project Phase 2 is the third of three courses which comprise the MInf project process. In MInf Project Phase 2, the student completes execution of the project plan and writes a comprehensive project report. The plan may evolve as the project proceeds, in response to changing opportunities, insights and experimental progress. At a number of points during this phase, the student is required to make a short oral presentation of their work. These presentations, though compulsory, are not assessed.

The fourth year structure is problematic in various ways:

1. If a student in MInf4 is unable to continue into MInf5 for some unavoidable good reason the only degree we can award is an Ordinary, no matter how well the student has performed.

2. There is evidence from supervisors that fourth year MInf students are finding it difficult to engage with the process as it is.
3. Transfer into the MInf degree from any honours degree during UG4 is quite problematic especially once the year is well under way.

4. The exceptional structure creates extra administrative overheads, with some tasks being carried out by the MInf Project coordinator and others by the UG4 project organizer.

5. There is good evidence (from student feedback) that in some cases supervisors do not appreciate the different nature of this fourth year structure and make inappropriate demands.

6. Marking the various parts of the MInf project process requires staff to switch context from the familiar undergraduate project marking one. It seems unwise and unnecessary to create yet another process.

The first of these is the most serious problem. The MInf degree is designed as a 5 year course and anybody entering it is signing up to that; there is no proposal to change this. In particular it is not proposed that students can elect to leave at fourth year as a matter of right. However there are bound to be cases where a student has to leave due to circumstances beyond his/her control (e.g., financial or family reasons). All our honours degrees require students to undertake a 40 point project so that MInf students are automatically ruled out from such a degree. Note that in the case of some joint degrees, e.g. Computer Science and Physics, the partner department organizes its 40 points worth of project work as two 20 point courses. It is a University requirement that final year honours students undertake 40 points work on a project or dissertation (see The Curriculum Framework – Models for Degree Types).

The second problem is also very serious.

The third problem is of some significance. It would clearly be good to be able to welcome transfers into the MInf degree from excellent students, at the moment we are hampered by the non-standard fourth year structure of the MInf degree.

The administrative and supervision problems are not on the same scale but it seems unwise to create problems that are easily avoided.

The point about marking is also fairly serious. The MInf project is an undergraduate one and it seems sensible to keep the process within the familiar one for UG4 projects. This proposal aims to achieve that.

Regulations on projects work

In The Curriculum Framework – Models for Degree Types the requirements for an Integrated Masters with Honours in a single discipline state:

- **Years 4 & 5 (SCQF level 10/11)**
  - 240 points at levels 10/11 consisting of:
    - At least 200 points in A of which at least 120 points must be at level 11 and at least 60 must be in the form of dissertations or projects or other pieces of work (e.g., synoptic papers) that demonstrate that the student can show proficiency in research and/or analytical skills relevant to advanced work in the Discipline.
    - For the remaining 40 points there should wherever possible be the opportunity for appropriately qualified students to take at least 20 points at levels from other Disciplines or Subject Groups of their choice from an approved list of courses or with the approval of the Head of School.

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1 This document is dated 30 March 2006, I have been unable to find anything more recent. The General Undergraduate Degree Regulations do not help here.
Our degree exceeds this by 40 points, since ‘MInf Project Planning’ and ‘MInf Project Phase 1’ fit into the requirement of dissertation or project type work.

The SCQF credits guide simply states

At least 180 credits of which a minimum of 150 is at level 11. For integrated Masters, at least 600 credits of which a minimum of 120 is at level 11. (Credit definitions do not normally apply to the MPhil — see Doctoral Degrees)

The proposed change

All the drawbacks mentioned above can be avoided by a simple change: replace ‘MInf Project Planning’ and ‘MInf Project Phase 1’ with a single 40 point course ‘MInf Project (Part 1)’ and, for consistency, rename ‘MInf Project Phase 2’ to be ‘MInf Project (Part 2)’.

The new course would be undertaken in exactly the same way as other UG4 projects without the need for special administrative arrangements. Calculation of marks would follow the standard UG4 approach. Students who enter fifth year would continue working on the project going deeper and producing new work. In their fifth year report they would be instructed to give a brief (no more than 10 pages) description of what was achieved in fourth year, otherwise they must report on the new work.

Currently when choosing a project MInf students are asked to discuss it with the relevant supervisor to ensure its suitability for MInf. Naturally this requirement would not change. It is worth noting that many UG4 project reports conclude with a list of work that would have been carried out had there been time; MInf4 students can say ‘will’ rather than ‘would’.

It is also proposed that the MInf Project (Part 2) is made into a 40 point course with the remaining 20 points being made up of appropriate courses. In theory it could be reduced to 20 points but there would then be an odd imbalance between the amount of project work undertaken in fifth year as opposed to fourth year. It would also mean that either the amount of project work (e.g., implementation) would be seriously truncated or the write up would be perfunctory.

A possible objection to the proposed change is that students would now face the possibility of failing a 40 point course rather than 20 points. This is not a serious concern since if they fail either of the 20 point courses in fourth year they cannot progress and cannot be awarded an Honours degree.

The proposed change is a fairly minimal one that resolves a potentially difficult situation. The alternative is to change our Honours degree regulations to allow the project to be made up of two 20 point courses. However this would go against a long established and highly successful study pattern and would, in my view, be a serious error. Moreover such a change would not address student concerns at the fourth year level.

In terms of the marking process, the marking form should make it clear to staff that MInf students do a two part project (but each part is a 40 point project). Thus for Part 1 a student could quite reasonably argue that a certain aspect is best left for Part 2; the markers will decide if the work actually carried out still amounts to a 40 point project.

Comparison with other schools

In Engineering for the Electronics and Computer Science (MEng Hons) degree fourth students must take ‘MEng Electronics and Informatics Project Phase One’ which is worth 20 points and is level 11. In fifth year students must take ‘MEng Electronics and Informatics Project Phase Two’ which is worth 60 points and is level 11.
In Mathematics for the Mathematics (MMath Hons) degree fourth year students can take ‘Mathematics Project’ which is worth 20 points and is level 10 (this is not compulsory). In fifth year students must take ‘Mathematics Dissertation’ which is worth 40 points and is level 11.

In Physics and Astronomy there is no compulsory project course in fourth year, just as in Mathematics. In fifth year students must take the ‘MPhys Project’ which is worth 40 points and is level 11. They must also take the ‘MPhys Project Presentation’ which is worth 10 points and is level 11.

Thus some schools only require 40 point projects but it is unclear if they classify other compulsory courses as being ‘in the form of dissertations or projects or other pieces of work’.

**Nature of the exit degree awarded**

Students on the MInf degree take a fairly balanced set of courses across Informatics up to third year and have a freer choice in fourth and fifth years. The most likely existing degree suitable for fourth year exit is the AI/CS one. However the nature of the degree offered should be left up to the Board of Examiners since the exact balance of courses cannot be known in advance.

An alternative would be to create a new MInf (Hons) degree but this would be a bad idea for the following reasons:

- The distinctive nature of the MInf degree is that it is our only five year offering and this proposal does not seek to change that. It follows that, assuming the case is accepted, we would not recruit into the MInf (Hons) degree.
- We already have a large number of Honours degrees many of which have a low intake, adding one more would just dilute the offering as well as complicate organization.
- We are seeking to address a rare exceptional circumstance and no matter what curriculum a student undertakes there will be a degree with reasonably close requirements.

1 Calendar changes

The administrative aspects of the various entries are not given below in order to save space. All entries that are not shown are the same as for the UG4 project page or the existing MInf Project Phase 2 page as appropriate.

The changes must be rolled out over two years so each one is preceded with the appropriate academic year.

1.1 Course entry changes

MInf Project (Part 1)

**WEF: 2013/14. Delete** the entries for MInf Project Planning and MInf Project Phase 1. **Insert**

Undergraduate Course: MInf Project (Part 1) (INFR100??)

Credit level SCQF Level 10 (Year 4 Undergraduate)

Credits 40
Course description This is the first half a major project that runs over the fourth and fifth years. It is intended to allow students to demonstrate their ability to organise and carry out a substantial piece of work. The project involves both the application of skills learnt in the past and the acquisition of new skills. Typical areas of activity will be: gathering and understanding background information; solving conceptual problems; design; implementation; experimentation and evaluation; writing up.

The project is conducted individually by the student under the supervision of a member of teaching staff. The project specification is usually provided by a member of staff, but students are also free to specify their own project. All project specifications must be approved by the Project Coordinator.

The project will normally involve the construction of an artifact, whether software, hardware, a robotic device, some other artifact incorporating computation, or some combination of these.

This first half consists of a project that is essentially self contained but it should be planned in such a way as to allow for expansion and greater depth for the following year. Note that as this is the first half of an 80 point project it is recognized that a longer planning phase might be involved as compared to a standard UG4 project. In any case, the report should include a clear account of this aspect along with a justification.

Summary of Intended Learning Outcomes
1. Structure and summarise a body of knowledge relating to a substantial project topic in Informatics.
2. Critically evaluate previous work in the area.
3. Conduct a programme of work in further investigation of issues related to the topic.
4. Discuss and solve conceptual problems which arise during the investigation.
5. Justify design decisions made during the investigation.
6. Critically evaluate the investigation.
7. Present work orally and visually, with demonstration of working artifacts where appropriate.

Assessment Information The project is assessed on the basis of a written report which should typically contain:

- Title page with abstract (a one or two paragraph summary of the contents). The title page must include a prominent line stating ‘MInf Project (Part 1)’.
- Introduction and synopsis, in which the project topic is described and set in the context of published literature, and the main results are briefly summarised.
- Discussion of the work undertaken, in which the various sub-problems, solutions and difficulties are examined.
- If appropriate, a description of experiments undertaken, a presentation of the data gleaned from them, and an interpretation of that data.
- Conclusion, in which the main achievements are reviewed. In addition unaddressed problems and directions for the MInf Project (Part 2) are presented.
- Bibliography.

After submission the student makes a presentation to the two markers. This presentation does not make an explicit contribution to the overall mark, but it does inform the markers’ assessment of the report.
MInf Project (Part 2)

**WEF: 2014/15.** Delete the entry for MInf Project Phase 2. Insert entry

**Undergraduate Course:** MInf Project (Part 2) (INFR110??)

**Credit level** SCQF Level 11 (Year 5 Undergraduate)

**Credits** 40

**Course description** This is the second half a major project that runs over the fourth and fifth years. It is intended to allow students to demonstrate their ability to organise and carry out a substantial piece of work. The project involves both the application of skills learnt in the past and the acquisition of new skills. Typical areas of activity will be: gathering and understanding background information; solving conceptual problems; design; implementation; experimentation and evaluation; writing up.

The project is conducted individually by the student under the supervision of a member of teaching staff. The project specification is usually provided by a member of staff, but students are also free to specify their own project. All project specifications must be approved by the Project Coordinator.

The project will normally involve the construction of an artifact, whether software, hardware, a robotic device, some other artifact incorporating computation, or some combination of these.

This second half continues from MInf Project (Part 1) starting with work identified in the Conclusion section of the report for MInf Project (Part 1). It is expected that work here will go into greater depth, the work carried out is not necessarily limited to that which was identified in MInf Project (Part 1).

**Summary of Intended Learning Outcomes**

1. Structure and summarise a body of knowledge relating to a substantial project topic in Informatics.
2. Critically evaluate previous work in the area.
3. Conduct a programme of work in further investigation of issues related to the topic.
4. Discuss and solve conceptual problems which arise during the investigation.
5. Justify design decisions made during the investigation.
6. Critically evaluate the investigation.
7. Present work orally and visually, with demonstration of working artifacts where appropriate.

**Assessment Information** The project is assessed on the basis of a written report which should typically contain:

- Title page with abstract (a one or two paragraph summary of the contents). The title page must include a prominent line stating ‘MInf Project (Part 2)’.
- Introduction and synopsis, in which the project topic is described and the achievements of MInf Project (Part 1) are briefly summarised (no more than 10 pages).
- Discussion of the work undertaken, in which the various sub-problems, solutions and difficulties are examined.
• If appropriate, a description of experiments undertaken, a presentation of the data gleaned from them, and an interpretation of that data.

• Conclusion, in which the main achievements are reviewed, and unsolved problems and directions for further work are presented. References to MInf Project (Part 1) would be relevant here.

• Bibliography.

After submission the student makes a presentation to the two markers. This presentation does not make an explicit contribution to the overall mark, but it does inform the markers’ assessment of the report.

1.2 DRPS changes

• **WEF: 2013/14.** In ‘Year 4 compulsory courses’ delete ‘INFR10037 MInf Project Planning’ and ‘INFR10038 MInf Project Phase 1’. Replace with ‘INFR100?? MInf Project (Part 1)’. Under ‘Credits’ insert 40.

• **WEF: 2014/15.** In ‘Year 5 compulsory courses’ delete ‘INFR11063 MInf Project Phase 2’. Replace with ‘INFR110?? MInf Project (Part 2)’. Under ‘Credits’ delete 60 and replace with 40.

• **WEF: 2014/15.** In ‘Year 5 course options’ delete ‘Select exactly 50 credits’. Replace with ‘Select exactly 70 credits’.

1.3 Other changes

The MInf web pages (especially those relating to projects) must be updated. This is a matter of reflecting the changes described above and will be carried out by the MInf Project Coordinator. In particular the delayed changes to the fifth year should be described here to avoid misunderstanding; this is particularly important for the time when students are choosing projects since, as mentioned above, they are asked to discuss with potential supervisors if a project is suitable for the MInf process. It is thus critical to signal the changes on the MInf web pages before third year students are invited to choose projects.

The UG4 project marking form needs to have a note added drawing attention to the two part nature of the MInf project. The notes for guidance likewise need to add a short explanation, with care taken over the transitional period. These changes are best carried out by the UG4 Projects Organizer.