

Project expectations

Colin Cotter (after Eric Keaveny)

Autumn Term 2019

1 Exam- vs. project-based assessment

Thus far, all or nearly all of your courses have been exam-based. The vast majority of the marks for these courses are awarded for your performance on a 2 hour exam at the end of the academic year. The exam questions are typically predictable, i.e. they will be of a similar style as those seen on the problem sheets and their content will be based on what has been seen in lectures. Typically, there is an expected route that the students will take to find each problem's solution and this is often guided by the problem itself. The marks for the question are usually based on how far along the student gets and how correct his/her arguments are. Responses to the questions are written down by hand and though neatness and presentation can be a factor in whether the marker understands what the student is trying to say, it's not marked directly.

While the exam-based format works reasonably well for assessing many courses offered by our Department, this format is too constraining for assessing courses where computation or computational methodology are the subject of the module. One limiting factor is obvious – you need a computer to do computation! Additionally, the numerical values from the computations need to be presented in tables or plotted in figures. They must also be described and interpreted. As a result, the presentation and discussion become as important as the correctness of the result.

Below is a set of guidelines to help you understand how projects are different from exams and as a result, how they are marked in a different way. The guidelines also spell out clear expectations for report submission.

Projects will often require more than following what was done in lecture. Applying algorithms is just like following a recipe and does not require much understanding of the methodology. As a result, assessments will not be only on how well the student can follow the algorithms, but how well they can modify and/or manipulate them to solve new problems.

Marks are not based on correctness alone. In many cases, there are several ways to achieve the same correct result. Understanding the course material means choosing the most efficient/best one for the problem. To assess this, the student needs to be able to discuss the reasoning behind his/her approach, and why their approach, and not another, was used. Students should be able to discuss their results in a mature way, using the language of the subject. Discussions should aim to provide insight, not only be descriptive.

Questions can be open-ended. To answer questions, the student may need to, for example, provide examples that highlight how one algorithm behaves with respect to another. Here, experimentation and student initiative become important, as does the ability of the student to explain their choice of computations. How well a student can discuss and explain his/her choices forms an important part of the content.

Presentation matters. In order to make all of this clear, the discussion and results need to be presented in a LaTeX report. Clear and concise exposition, a well-organised report, and carefully constructed figures and tables are linked to the student's understanding. Thus, presentation is very important and there are marks allocated directly for this.

2 Project submission

Your project will consist of two elements the written report that contains all results and discussion, and all of the codes that implement the algorithms and are used to generate the results. Your project will be submitted as **ONE** .zip file to Blackboard.

The .zip file will contain all codes (executable files) used to generate your results and a .pdf of your report. Keep in mind the following:

1. Late submissions will be treated in compliance with College rules.
2. What appears on Blackboard at the due date and time will be considered the final submitted version of your project.
3. Coursework is subject to the College Plagiarism Policy. Tools such as Turn-it In may be used to check your codes and reports.

2.1 Report

The report is the document where you will provide all results, discussion, and responses. Your report should be typeset using LaTeX and be a single .pdf file. At the beginning of your report, you must provide your name and CID. You must also state that The contexts of this report and associated codes are my own work unless otherwise stated and references to sources must be provided if they are used. All figures and tables should be embedded in the report. The report should contain all discussions and explanations of the methods and algorithms, as well as interpretations of your results and further conclusions.

2.2 Codes

The codes that you develop/use are the nuts and bolts of the project. They demonstrate that you can take the algorithms described in words and implement them to produce useful results. The codes you write and submit should be well-structured and organised. They should also be sufficiently commented to allow an independent reader to easily parse the code and understand what it does and how it works. You should submit the original working files that can be executed, not a pdf copy. All codes should be written in Python and you may not use high-level, built-in functions or modules unless specifically instructed to do so. In addition, your submitted codes should run out of the box and require no modification by the marker to generate the results in the report. This means that you must provide all dependencies, including any codes provided to you by the lecturer.

3 Marking

The following general mark guidelines will be applied to the projects:

Presentation. Your report will be marked on the quality of writing, typesetting, overall organisation, and figures/tables. Everything should be easy to follow. Your codes will be marked on how well they are commented and organized.

Content. You will be marked on the correctness of your results, codes, and statements that you make. This group of marks will likely be broken down further with a certain allocation for each question.

Discussions. Discussions will be used as an indicator of how well you understand the course material. You will be marked on the quality, succinctness and the depth of your discussions, explanations, interpretations, and conclusions. Your discussions should aim to provide clear insight and you are encouraged to back up your claims with quantitative evidence. Such statements are typically clear and concise.

Feedback. Feedback will be provided via a project Feedback sheet uploaded to Blackboard. The sheet will contain your total raw mark for the project, as well as the breakdown for content marks (at the question level) and the overall presentation and initiative mark. A short explanation will be provided as to why certain marks were not awarded.