

Reference Norms for Third Year Project Marking

“Norm Referencing” is an approach to marking in which marks are allocated by comparison with an agreed set of standards that can be thought of as a set of reference components. The aim of norm referencing is to produce a more uniform standard of marking.

The project supervisor and the independent examiner each mark four aspects of the project independently; each aspect is marked out of 100%. The independent examiner marks two aspects of work assessed from the report, namely, technical achievement **and** testing, analysis and conclusions. The independent examiner also marks two aspects of report presentation, namely, organisation of the report, references and bibliography **and** clarity of English and presentation of diagrams and tables. The supervisor also marks two aspects of work assessed from the report, namely, technical achievement **and** testing, analysis and conclusions. The final two aspects are project management **and** the ability of the student to make progress independently; both are assessed over the period of the project by the supervisor. For each aspect there are detailed guides, reference norms, near the 40%, 60% and 80% levels.

40% corresponds to work that is marginally satisfactory in that aspect. There are many failings, but there are some achievements and positive features 60% corresponds to work which has, in that aspect, both strong and weak features with the stronger features being in the majority. 80% corresponds to work that is, in that aspect, mainly of a professional standard, but has a few shortfalls. 100% would correspond to work that, in that aspect, reaches the highest standards that could be expected of a young professional engineer.

When marking an aspect supervisors and examiners should refer to the norms in the following pages for that aspect. If a norm matches the work, then use that norm in your report and allocate that mark. If the work lies between two norms, then write an intermediate report and use an intermediate mark.

If the work is below the 40% norm, then write a careful critique and allocate an appropriate mark. If there is a serious failing you may wish to consult informally with an experienced colleague. If the work exceeds the 80% norm, then you will need to write a very careful justification of your mark for this aspect. This is because our external assessors have been particularly concerned about high marks for projects.

Third Year Projects

Mark Recording Form 2005

Independent Examiner

Student : Justin Passable

Course : EEE

Project Title : A system to study EM Transients associated with Lightning Strikes

Supervisor : Mr. B. Franklin

Examiner : Prof. Volta

Work assessed from Report

(i) Technical Achievement

Mark Awarded : 41%

The student only completed a small proportion of the overall project. The report includes designs for the four components of the system but only one of these has been constructed. An average student from our department would have been able to construct the whole system in the nominal time allocated to the project.

(ii) Testing, Analysis and Conclusions

Mark Awarded : 40%

Although some parts of the system were constructed and the student claims that they worked, the testing, as reported, is barely adequate. The number of tests which were carried out and the range of parameters that were employed covers only a small fraction of the purpose of the system defined in the report. There is scarcely any analysis of the system performance. The conclusions are of a rather simplistic nature.

Report Presentation

(iii) Organisation of Report, References and Bibliography

Mark Awarded: 41%

The report is organised in the most basic way as a chronological record of the project work. It lacks any structure other than the chapter headings: Introduction, Experiment, Conclusions. The distribution of diagrams within the text is haphazard. The abstract and the references are barely sufficient for a project at this level. The student has not included any other interesting and relevant material in a bibliography.

(iv) Clarity of English and Presentation of Diagrams and Tables

Mark Awarded: 42%

This report can only be read with great difficulty because of repeated flaws in sentence construction. Despite this, 4 of the 5 key points that the writer was trying to convey can be worked out without ambiguity and without needing an intimate knowledge of the project. The quality of information presentation in the diagrams and graphs in this report is poor. The labelling of the figures is generally very poor. Overall, the figures convey less than half the information that they should. The two tables of results are satisfactory with the exception of their captions. The report could be prepared for more general circulation by a technical editor with a good general knowledge of Electrical Engineering and Electronics.

Third Year Projects

Mark Recording Form 2005

Independent Examiner

Student : Michael Middling

Course : EEE

Project Title : Fuzzy Logic control applied to DC Generators

Supervisor : Mr. M. Faraday

Examiner : Prof. Volta

Work assessed from Report

(i) Technical Achievement

Mark Awarded: 57%

This project involved a clearly defined programme which was within the capabilities of the average student. 5 out of the 6 project targets have been met, but the overall level of design is weak and there are doubts that the system as a whole would have worked satisfactorily without some further development of the completed designs.

(ii) Testing, Analysis and Conclusions

Mark Awarded: 60%

Sufficient testing was carried out to show that five of the project objectives had almost certainly been achieved. However, more careful measurements and a better analysis of the results are required in order to reach a professional standard. The conclusions are both practical and sensible, but a student with a good understanding of the topic could usefully have developed these further.

Report Presentation

(iii) Organisation of Report, References and Bibliography

Mark Awarded: 56%

A clear attempt has been made to structure this report with appropriate chapter headings and sections clearly accessible through the table of contents. The order of sections is sometimes confused. Diagrams are to be found at the end of each section. Several sections include material that belongs under a different heading. The abstract includes most of the major aspects of the work. The references are adequate but not extensive. Some references to the appendices require them to be read in full. It would have been more to include a brief précis in the text with a reference to the appendix for further details. It is good that a couple of items were included in the bibliography, indicating some further reading.

(iv) Clarity of English and Presentation of Diagrams and Tables

Mark Awarded: 62%

This report can be read with only minor difficulties. The text is successful in conveying more than four fifths of the information without difficulty for the reader and is almost free of ambiguities. The style in about half of the report needs considerable improvement if it is to meet professional standards. Most of the figures in this report approach a professional standard. Almost all of them have small defects, but these never cause serious confusion when read in the context of the report. Certain figures, particularly some circuit diagrams, try to present too much information for their size and are more appropriate to an appendix. A general editor could prepare the report for wider circulation.

Third Year Projects

Mark Recording Form 2005

Independent Examiner

Student : Miss Belinda Brilliant

Course : EEE

Project Title : Microminiature amplifiers based on advanced thermionic technology.

Supervisor : Prof. J.A. Fleming

Examiner : Prof. Volta

Work assessed from Report

(i) Technical Achievement

Mark Awarded: 78%

This was an ambitious project that would have provided a fair challenge to a first class student. Almost all the work has been completed and it is clear that a viable solution to the project task has been found. The remaining work to be done is clearly defined in the report and could be completed by a competent engineer in about 10 hours.

(ii) Testing, Analysis and Conclusions

Mark Awarded: 76%

A very thorough analysis of the task is presented which is based on an extensive set of measurements. The majority of this aspect of the work is to professional standards, but there are occasional lapses which show weaknesses in the student's understanding of the analytical methods used. The central conclusions are appropriate to the project, but some of the more peripheral conclusions show a lack of balance in the project context.

Report Presentation

(iii) Organisation of Report, References and Bibliography

Mark Awarded: 76%

This is a well structured report organised in a professional manner. The titles of the chapters and sections give good, but not totally accurate, descriptions of the topics that they cover. Some, but not all, of the longer sections have been usefully divided into sub-sections. The first chapter is an excellent guide to the rest of the report and places the work within its general context. The figures are included at appropriate places in the text. The abstract is a good summary of the work. It does not, however, always reflect the balance of the work nor does it include some of the significant figures of merit. The appropriate number of references has been included.

(iv) Clarity of English and Presentation of Diagrams and Tables

Mark Awarded: 78%

This report is generally easy to read. It is successful in conveying all the information without ambiguity. Most of the account is very clear and of a high standard. There are a number of minor errors in grammar and spelling that could be corrected by a copy editor. The figures in this report are of a high quality, in particular the two exploded diagrams of the equipment show the relationship of the main modules with great clarity. These are backed by a complete set of projections in the appendix. A table of results is used in the one case that it is appropriate. The captions are in general good, but would benefit from being more concise without losing any key information.

Third Year Projects

Mark Recording Form 2005

Project Supervisor

Student : Justin Passable

Course : EEE

Project Title : A system to study EM Transients associated with Lightning Strikes

Supervisor : Mr. B. Franklin

Project Supervisor

(i) Project Management

Mark Awarded : 39%

At the beginning of the project its management was haphazard. While Mr Passable recognised that the project schedule had slipped badly, he made no attempt to produce revised timings or to catch up. It was only in the last few weeks of the practical part of the project that he realised the need to prioritise tasks. His approach to record keeping was not professional and certain measurements had to be repeated because some data was lost.

(ii) Technical Achievement

Mark Awarded : 41%

Mr. Passable only completed a small proportion of the overall project. He designed the four components of the system but only one of these was constructed. An average student from our department would have been able to construct the whole system in the nominal time allocated to the project.

(iii) Testing, Analysis and Conclusions

Mark Awarded : 39%

Some parts of the system were constructed and the student claims that they worked, the testing, as reported, is barely adequate. The testing strategy, the number of tests and the range of parameters employed covers only a small fraction of the purpose of the system as defined in the report. There is scarcely any analysis of the system performance. The conclusions are of a rather simplistic nature.

(iv) Ability to progress independently

Mark Awarded : 41%

Mr. Passable displayed little initiative. A considerable effort from the supervisor was needed to ensure that probable time delays were foreseen and steps taken to overcome them. In the second semester, Mr. Passable did respond to a measure of direction which was needed to achieve a reasonable amount of progress. On the positive side, he worked out an agreed time schedule for an item of shared equipment, and adhered to it, and independently carried out such testing as was completed.

Third Year Projects

Mark Recording Form 2005

Project Supervisor

Student : Michael Middling

Course : EEE

Project Title : Fuzzy Logic control applied to DC Generators

Supervisor : Mr. M. Faraday

Project Supervisor

(i) Project Management

Mark Awarded : 55%

The management of this project was only fair and showed a lack of maturity. On several occasions, when there was a delay in the delivery of a component, Mr. Middling stopped working on the project rather than begin the construction of the next board. In consequence an inadequate amount of time was available for testing, which was left to the end. This would not have been the case if the project schedule had been used as a guide and some testing carried out earlier. Mr Middling kept good records in his book.

(ii) Technical Achievement

Mark Awarded : 57%

This project involved a clearly defined programme which was within the capabilities of the average student. 5 out of the 6 project targets were met, but the overall level of design is weak and there are doubts that the system as a whole would have worked satisfactorily without some further development of the completed designs.

(iii) Testing, Analysis and Conclusions

Mark Awarded : 59%

Sufficient testing was carried out to show that the vast majority of the project objectives had been achieved. However better design of the test methods, more careful measurement, and a better analysis of the results are required in order to reach a professional standard. The conclusions are both practical and sensible but a student with a thorough understanding of the topic could have developed these further.

(iv) Ability to progress independently

Mark Awarded : 59%

On the whole Mr Middling showed a good level of initiative, but he was somewhat erratic. On occasions he needed rather more guidance than would be expected for a young engineer at this stage. In a few instances he failed to seek appropriate advice although he realised that it was needed.

Third Year Projects

Mark Recording Form 2005

Project Supervisor

Student : Miss Belinda Brilliant

Course : EEE

Project Title : Microminiature amplifiers based on advanced thermionic technology.

Supervisor : Prof. J.A. Fleming

Project Supervisor

(i) Project Management

Mark Awarded : 78%

During almost the whole of this project its management was of virtually a professional standard. There were two occasions when severe set-backs occurred. On the first, Miss Brilliant rescheduled the tasks, and on the second the project targets and timetable were revised. This enabled the majority of the project aims to be met in difficult circumstances. Although Miss Brilliant did not keep adequate records at the beginning of the project, she soon realised their importance and kept a professional record book throughout the second term.

(ii) Technical Achievement

Mark Awarded : 78%

This was an ambitious project that would have provided a fair challenge to a first class student. Almost all the work has been completed and a viable solution to the project task has been found. The remaining work to be done has been clearly defined by Miss Brilliant. It could be completed by a competent engineer in about 10 hours.

(iii) Testing, Analysis and Conclusions

Mark Awarded : 82%

The testing strategy was carefully developed to fully test all the objectives defined. A very careful set of measurements was carried out, and, on the whole, were analysed in a professional manner. There is some evidence of incomplete understanding of the analytical methods. The conclusions are excellent and could scarcely be improved.

(iv) Ability to progress independently

Mark Awarded : 80%

In the earlier stages of the project, she followed the guidance that was offered. She rapidly started to drive the project forward under her own initiative. Later meetings, which were instigated by Miss Brilliant, took the form of a progress report and technical consultation. Miss Brilliant did however need some general guidance in the preparation of her report.