

UNIVERSITY OF SHEFFIELD

DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING

MEMORANDUM

To: All final year MSE and BSTE students (BEng., Dual Honours, MEng.)
All academic project supervisors.

From: Prof Beverley Inkson

Date: 21st September 2011

Final Year Research Projects 2011/2012

The timetable for writing and submission of project reports is as follows:-

Friday, 16th December 2011 (12.00 noon deadline) (Week 12, Semester 1)	Submit to the Coursework submission box : (1) one copy of the interim report (consisting of the relevant background and literature review, together with a forward plan for the successful completion of your project) (2) the dated coursework coversheet . <i>In addition,</i> (3) submit your interim report electronically to the TurnItIn website . You will be given feedback on the interim report from your Supervisor during the beginning of Semester 2.
Friday 18th May 2012 (12.00 noon deadline) (Week 12, Semester 2)	Submit to the General Office (F20) : (1) three unbound copies of the original completed final report (2) your laboratory note book (3) a copy of your project report in MS Word format on CD (4) the dated coursework coversheet At least two of the copies should be top copies containing original good quality graphs/drawings/ photographs. The third copy may contain photocopies of figures if these show the required details. <i>In addition,</i> (5) submit your final report electronically to the TurnItIn website . The instructions regarding format, figures, etc., must be followed carefully. You should submit three copies, unless your Supervisor(s) require more.
Friday 8th June 2012 (Week 15, Semester 2)	Oral presentations of projects (further details to be given later)

A Guide to Your Final Year Project

1.0 Your final year project

Your final year project will involve the development of a piece of original research work under the supervision of an academic Supervisor. The project will draw on the knowledge and skills you have developed over the last two or three years and will also require you to develop new capabilities. Your project should be a rewarding and enjoyable experience, ultimately, however, you will benefit from your project in proportion to your effort.

A successful final year project involves a regular distribution of effort over the course of the research investigation. You will not be able to produce a worthwhile project report if your effort is limited to erratic bursts of activity. You should therefore plan your time carefully in consultation with your project Supervisor.

Please remember that your project Supervisor has many demands on his / her time, you should therefore be punctual for meetings and arrive prepared. You should also endeavour to develop your project under your own initiative, with the guidance of your Supervisor. Your Supervisor will make an assessment of your execution of the project, as detailed below.

2.0 Plagiarism assessment

All written assignments for final year projects must be submitted for plagiarism assessment using the on line “TurnitinUK” service at www.submit.ac.uk. You will need to upload your assignment to this website by the report due date. This will be used by the Department to generate an “originality report” for assessment of plagiarism. You will receive detailed instructions as to how to upload your work later in the Semester. Further information concerning the TurnitinUK may be found at: <http://www.shef.ac.uk/cics/training/plagiarism.html>. You should familiarise yourself with the information available on this web-page at an early stage of your project.

3.0 Introduction to project assessment scheme

The assessment scheme aims to examine you on your attainment (i.e. learning outcome) with respect to key research competencies (i.e. learning objectives), assessed in the following way:

Interim/Literature review report; based on: organisation and structure; critical review of literature; observance of scientific conventions (such as referencing); summary of progress to date; forward plan; and production standard

Supervisors report: evaluation of research aptitude of student; based on: record keeping; intellectual input; supervision required; communication skills; organisation and planning; understanding of project objectives; student effort; experimental competency; results; and analysis.

Final written report: evaluation of written report; *two* independent assessments based on: organisation and structure of report; results; understanding of results and analysis; production standard; and observance of scientific conventions (such as referencing).

Oral presentation: evaluation of presentation skills; *two* independent assessments based on: organisation and structure of presentation; delivery; and use of visual aids.

The weighting scheme for these methods of assessment is set out in the table below. The majority, 65%, of assessment is undertaken by independent assessors, 35% of the assessment is undertaken by the Supervisor. *Pro-forma* report forms for the various methods of assessment are attached to this document.

Assessment	Assessor(s)	Maximum mark	Weighting
Interim report	Supervisor	70	5.0 %
Supervisor report	Supervisor	100	30.0 %
Final written report	Independent Assessor 1	100	22.5 %
	Independent Assessor 2	100	22.5 %
Oral presentation	Independent Assessor 1	30	10.0 %
	Independent Assessor 2	30	10.0 %

4.0 Laboratory note books

Each student is required to keep a suitable **hard backed laboratory notebook** (A4 size is recommended although a smaller size may be acceptable) in which raw experimental results and details should be neatly recorded, as they are obtained, with the appropriate date. This must be taken to your main Supervisor for inspection during project progress meetings **and handed in with your project report**. Your note book will be held on file for inspection by the external examiners at the end of Semester 2. Note that your project Supervisor will award marks for your record keeping as part of your assessment.

5.0 The Interim/ literature review report

The requirement of an Interim literature review report submitted at the end of Semester 1 is intended to help you focus on the necessary tasks required for the timely completion of your project. At the same time, it represents an opportunity for you to receive feedback from your Supervisor regarding what you have written in terms of background to your project, together with advice on your plan to meet the objective(s) of your project. If you take the effort at this stage, the amount of writing required from you for the final project report will be greatly reduced.

The content of the interim report will consist primarily of the Literature Survey, which should constitute a critical and concise discussion of the background literature to your project. It should cover reviews and papers that you have read yourself, relevant to the project and the length and importance of the literature survey will vary with the individual project. **As a guide, the length of your survey should be between 1000 to 2000 words for BEng students and between 2000-3000 words for MEng students**, but it will be judged on quality not on length. You are strongly advised to consult your main Supervisor for advice about the content and nature of your literature review. Figures, tables or diagrams may be included in the literature survey but if included they must be clear (photocopies or scanned images are often inadequate) and be properly acknowledged. The survey may include the following, if appropriate: division of topic into sections identifying important aspects (e.g. processing methods, properties, techniques, background science); description of key studies to be listed in references at the end; evidence of a critical appraisal of published work; identification of gaps in knowledge and areas requiring further research (i.e., leading to reasons why you are doing your research project); a concise summary of the main points emerging from the survey and overall conclusions about the present state of the field and future prospects. Remember to adopt appropriate scientific conventions, for example: make sure you use a consistent

referencing format; use relevant units; make sure estimates of error or precision are given where appropriate.

The second aspect of the Interim report is the Research Progress-to-Date, which includes any theoretical or experimental results.

The third part of the Interim report will consist of a Forward Plan, where you will clearly state what the objectives of the work are, the experiments and/or methodology that you will use to meet the objectives, and the timeframe in which the project will be brought to its conclusion.

It is worth noting that **this Interim report is worth 5% of the overall project mark**, and that once you receive comments from your Supervisor (during the first weeks of Semester 2), he or she will read no further “draft” reports.

The marking scheme for the interim report is attached to this memo. You should read this carefully to understand the level of attainment required in each research competency.

6.0 The final written report

The report should be as concise as is consistent with an adequate presentation of the work; there is no merit in length for its own sake. Particular attention should be paid to a logical presentation of the subject matter and arguments and to the general standard of English. Remember to adopt appropriate scientific conventions throughout your report, for example: make sure you use a consistent referencing format; use relevant units; make sure estimates of error or precision are given where appropriate. You may like to consult reports written by students in previous years, copies can usually be obtained from your Supervisor. The marking scheme for the interim report is attached to this memo. You should read this carefully to understand the level of attainment required in each research competency. **Your project report will be examined by two independent assessors.**

Before writing your report you should draw up a plan or ‘skeleton’ consisting of section and sub-section headings with brief notes on the content of each section, which should be discussed with your Supervisor. Then a first draft should be prepared so that your Supervisor can read it and make suggestions.

In writing your report you should follow the “House Style 5th Edition” notes (R J Hand, 2011). This document is available to download from MUSE, in the Dept UG group database of UG files. The following is a general guide for writing the report.

- (a) **Layout:** a typical layout may follow the pattern of Title - Abstract - Introduction - Literature Survey - Experimental Procedure - Results - Discussion - Conclusions - References. Each of the main sections should begin a new page.
- (b) **Contents of sections:** the **Title** and **Abstract** should be made as informative as possible. The title should aim to classify the work in the relevant field by the use of key words, and the abstract should summarise the main contents including results achieved and main conclusions in a passage of about 200 words on a separate page. Because of the wide diversity of projects, emphasis and layout will vary to suit each particular case but the following general guidelines are suggested.

The **Introduction** to the main text should be brief indicating the background and reasons for the work and the aims and objectives of the project. The **Literature Survey** should constitute a critical **concise** discussion of the background literature to your project. It should cover reviews and papers that you have read yourself, relevant to the project and the length and importance of the literature survey will vary with the individual project. **As a guide, the length of your survey should be between 1000 to 2000 words for BEng students and between 2000-3000 words for MEng students**, but it will be judged on **quality** not on length. **Please note the literature outlined must be closely relevant to the later Discussion section.** In most cases, the literature review that you wrote as part of the interim report in Semester 1 will be adequate for inclusion, with perhaps minor modifications to reference numbers, etc.

The **Experimental Procedure** section should describe the apparatus and techniques. Well known procedures, such as drying, grinding, etching, weighing, etc., require only the briefest mention unless they involve unusual difficulty. The following **Results** section should be confined to a clear statement of the results complete with tabulated data and an evaluation of **errors** where appropriate. Results should be presented in graphical form wherever possible for clear, rapid interpretation of the data. **Include error bars** on points where appropriate. The **Discussion** should include a **critical comparison of the results with relevant published work covered in the Literature Survey.** **Conclusions** are best presented in list form and must be informative as well as concise. A single list of **References** (including those given in your literature survey) should be given at the end of the text. Please **follow the guidelines given in the "House Style 5th Edition" notes (R J Hand, 2011)** which you can download from MUSE.

Appendices can be added if it is necessary to present large numbers of results, computer programs, calculations or theoretical derivations which would impede the flow of the main text. The relevant Appendix (e.g. 1,2 or 3, etc.) must be referred to in the main text so that its purpose is clear.

- (c) **Presentation:** obtain guidance from your Supervisor whenever you have doubts about how, or if, any material should be presented. Make every effort to present the report in a neat and clearly legible manner, (word processing is not mandatory **but is strongly recommended**). The text should have been planned before writing; avoid repetition and be precise and economical in the use of words, avoiding the use of the 'first person'. The report will be judged on its quality and not on its length, but **for guidance, a length of 6,000 words for BEng students or 7500-8000 words for MEng students on A4 sized paper plus references and captions will suffice.**

As detailed in 'House Style' each page of the report, including any appendices, should be numbered in sequence at the top right-hand corner (except for the **first page** where it should appear at the foot of the page and be centred). Sections and sub-sections may be numbered in sequence in standard form, e.g. 1 and 1.1 respectively, for additional ease of cross reference within the report. Use of sub-sub-sections should be avoided.

Any acknowledgements should indicate the type and extent of assistance received.

- (d) **Figures: two** of the three copies of the report should contain original figures. Drawings and graphs may be drawn using either i) a computer in which case a

laser or ink-jet printer should be used for the final copy or ii) a black ink or felt tip pen on A4 tracing paper, which is obtainable from Stores. The tracings/print outs should be used as masters from which photocopies of the reports are made.

Photographic images (e.g. optical and electron micrographs) should be printed on photographic paper or scanned digitally. All images should only be used if they are of high quality and sufficient contrast.

All Figures and Tables should be provided with a fully informative caption.

It is your responsibility to make three copies of your final report (see remarks above). **Reports should have a cover page** containing the title of the project, your name, and the name of your Supervisor. Remember that there will be great demand for word-processing, printing and photocopying facilities near the project deadline. **Submit your reports unbound**, and they will be bound in the General Office in F20 on submission.

Final production of your project report may well take longer than you expect and you must therefore allow plenty of time for word-processing *etc.* Failure to allow adequate time for these activities is **not** a valid excuse for late submission (see below).

Submit :

- (1) **three unbound copies of the original completed final report**
- (2) **your laboratory note book**
- (3) **a copy of your project report in MS Word format on CD**
- (4) **the dated coursework coversheet**

to the General Office (F20) **not later than Friday 18th May 2012 (12.00 noon deadline)**. **For project reports handed in later than the deadline, 10% of the allocated marks will be deducted for each working day beyond the deadline.** Exceptions will be made only in unavoidable circumstances and must be agreed with Prof Beverley Inkson. **No exceptions will be given for problems arising from word-processing and printing.** These must be sorted out on good time, well before the deadline. In case of late submission due to illness **full documentary evidence** must be produced and submitted to the staff in the **General Office (F20)**.

7.0 The Supervisor's report

Your project Supervisor will undertake an assessment of your execution of your final year project, as follows:

Record keeping – your ability to maintain a coherent note book

Intellectual input – your contribution of ideas to the project

Initiative / supervision – the balance of your initiative and supervision required

Communication – ability to communicate ideas / concepts in relation to the project

Organisation and planning – your ability to prioritise tasks and set project objectives

Understanding of project objectives – your understanding of project aims and ideas

Effort – your input into the project overall

Experimental / modeling competency – your practical capability

Results – evaluation of your results against project objectives

Analysis – the quality of your analysis of experimental results

You should therefore aim to demonstrate your competency against these criteria over the duration of your project.

Final Year Project: Supervisor's Report

Student	
Supervisor	

Project title	
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Please enter marks in the table below, using guidelines attached.

Competency	Maximum mark	Mark awarded
Record keeping	5	
Intellectual input	15	
Supervision required	10	
Communication skills	10	
Organisation and planning	10	
Understanding of project objectives	10	
Effort	10	
Experimental / modelling competency	10	
Results	10	
Analysis	10	

Overall Mark (out of 100)

	%
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Comments

Please comment on general aptitude of student, special circumstances relating to project and student, input of student into project and extent of assistance provided (attach additional sheet if necessary)

Signature	Date
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Marking scheme for Supervisor's Report

Record keeping	Mark
Little or no record keeping	0.0 – 1.5
Erratic and undated	2.0
Regular but incoherent in places, dated	2.5
Coherent but lacks detail, dated	3.0
Clear, detailed and dated	3.5 – 5.0
Intellectual input	
Little or no input	0.0 – 5.5
Few ideas, occasional input	6.0 – 7.0
Constructive ideas, satisfactory input	7.5 – 8.5
Significant contribution, sustained input, some original thought	9.0 – 10.0
Leading contribution sustained over project duration, independent and original thought	10.5 – 15.0
Extent of supervision / student initiative	
Continuous supervision, little or no student initiative	0.0 – 3.5
Frequent supervision, patchy student initiative	4.0 – 4.5
Regular supervision, satisfactory student initiative	5.0 – 5.5
Infrequent supervision, significant and sustained student initiative	6.0 – 6.5
Modest supervision, student assumed initiative	7.0 – 10.0
Communication skills – ideas, concepts and discussion	
Student barely able to communicate basic ideas / concepts, little or no input into discussion	0.0 – 3.5
Understandable but occasionally unclear communication, contributed to discussion with prompting	4.0 – 4.5
Intelligible and generally clear communication, unprompted contribution to discussion	5.0 – 5.5
Coherent communication, significant contribution to discussion	6.0 – 6.5
Articulate and confident communication, student able to lead discussion	7.0 – 10.0
Organisation and planning	
Little or no organisation / planning	0.0 – 3.5
Patchy organisation / planning, unable to prioritise tasks - Supervisor set detailed task list	4.0 – 4.5
Satisfactory organisation, student able to prioritise tasks with help	5.0 – 5.5
Well organised, student able to prioritise tasks unaided	6.0 – 6.5
Excellent organisation and planning, student set and prioritised short and long term goals	7.0 – 10.0
Understanding of project objectives	
Little or no understanding	0.0 – 3.5
Patchy understanding of basic ideas and objectives	4.0 – 4.5
Satisfactory understanding of basic project ideas and objectives, able to communicate to others	5.0 – 5.5
Sound understanding of project ideas and objectives, able to explain to others	6.0 – 6.5
Excellent understanding of project ideas / objectives, developed beyond initial project scope	7.0 – 10.0
Effort	
Little or no effort	0.0 – 3.5
Patchy, inconsistent effort – bare minimum achieved	4.0 – 4.5
Satisfactory effort at recommended level to achieve adequate results	5.0 – 5.5
Commendable and consistent effort above level expected to achieve adequate results	6.0 – 6.5
Student showed exceptional dedication to project	7.0 – 10.0
Experimental / modelling competency	
Little or no practical competency	0.0 – 3.5
Able to conduct simple practical tasks with assistance	4.0 – 4.5
Able to conduct simple practical tasks without assistance, tackled complex tasks with help	5.0 – 5.5
Able to complete complex practical tasks competently with some assistance / additional guidance	6.0 – 6.5
Able to complete complex practical tasks efficiently after instruction, with minimal guidance	7.0 – 10.0

Results

Little or no results, did not meet basic project aims	0.0 – 3.5
Patchy results, achieved some of basic project aims	4.0 – 4.5
Satisfactory results, achieved most of basic project aims	5.0 – 5.5
Commendable results, achieved basic and most of more demanding project aims	6.0 – 6.5
Excellent results, achieved more demanding project aims and advanced beyond these	7.0 – 10.0

Analysis

Little or no analysis of data	0.0 – 3.5
Patchy analysis, questionable reliability	4.0 – 4.5
Satisfactory analysis, reliable conclusions	5.0 – 5.5
Commendable analysis, able to set conclusions in context of current understanding in field	6.0 – 6.5
Excellent analysis, evidence of original contribution to or development in field	7.0 – 10.0

Final Year Project: Assessor's Report

Student	
Supervisor	

Project title	
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Assessor	
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Please enter marks in the table below, using guidelines attached.

Competency	Maximum mark	Mark awarded
Organisation and structure	25	
Results	20	
Understanding and analysis	35	
Production standard	10	
Scientific conventions	10	

Overall Mark (out of 100)

	%
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Comments

Signature	Date
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Marking scheme for Assessor's Report

	Mark
Logical structure and clarity of writing	
Little or no logical structure, poor sentence construction, difficult to extract information	0.0 – 9.5
Poorly structured, confusing prose, information can be extracted with perseverance	10.0 – 12.0
Satisfactory structure to report, prose conveys information successfully, occasionally confusing	12.5 – 14.5
In general, well structured and well written	15.0 – 17.0
Clear and logical presentation, articulate prose, interesting to read	17.5 – 25.0
Results	
Little or no results, did not meet basic project aims	0.0 – 7.5
Patchy results, achieved some of basic project aims	8.0 – 9.5
Satisfactory results, achieved most of basic project aims	10.0 – 11.5
Commendable results, achieved basic and most of more demanding project aims	12.0 – 13.5
Excellent results, achieved more demanding project aims and advanced beyond these	14.0 – 20.0
Understanding and analysis	
Little or no understanding of project aims and results	0.0 – 13.5
Patchy understanding of project aims and results, clear deficiencies in understanding / knowledge	14.0 – 17.0
Satisfactory understanding of project aims, results and analysis	17.5 – 20.5
Good grasp of project aims, competent analysis of results, conclusions set in context of project	21.0 – 24.0
Excellent analysis, evidence of original contribution to or development in field	24.5 – 35.0
Production standard	
Little or no attempt to present report in consistent and intelligible format	0.0 – 3.5
Patchy presentation, frequent errors in formatting compromising meaning and readability	4.0 – 4.5
Satisfactory presentation, minor errors in spelling and formatting but text conveys meaning	5.0 – 5.5
High standard of production, infrequent production errors, clear and labelled diagrams	6.0 – 6.5
Excellent standard of production, report set out in clear and attractive format, few, if any, errors	7.0 – 10.0
Scientific conventions	
Little or no coherent referencing, error estimation and use of technical terms	0.0 – 3.5
Patchy and incomplete referencing, error estimation and use of technical terms, frequent mistakes	4.0 – 4.5
Satisfactory referencing, error estimation and use of technical terms, minor mistakes	5.0 – 5.5
Good use of referencing, error estimation and use of technical terms, occasional mistakes	6.0 – 6.5
Excellent referencing, error estimation and use of technical terms, few, if any, mistakes	7.0 – 10.0

Final Year Project: Oral Presentation Report

Student	
Supervisor	

Project title	
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Assessor	
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Please enter marks in the table below, using guidelines attached.

Competency	Maximum mark	Mark awarded
Organisation and structure	10	
Delivery	10	
Use of visual aids	10	

Overall Mark (out of 30)

/ 30

Comments

Signature

Date

Marking scheme for Oral Presentation Report

Organisation and structure	Mark
Little or no structure / organisation, talk largely difficult to follow	0.0 – 3.5
Patchy / inconsistent structure / organisation, talk frequently difficult to follow, often confusing	4.0 – 4.5
Satisfactory structure, talk occasionally difficult to follow, sometimes confusing	5.0 – 5.5
Well structured, talk easy to follow, rarely confusing	6.0 – 6.5
Excellent structure – little room for improvement	7.0 – 10.0
Delivery	
Poor, such as to render talk largely unintelligible	0.0 – 3.5
Patchy / inconsistent, often difficult to comprehend aims, results and conclusions	4.0 – 4.5
Satisfactory, conveyed aims, results and conclusions in largely understandable fashion	5.0 – 5.5
Good, conveyed aims, results and conclusions, in clear fashion	6.0 – 6.5
Excellent, confident and fluent presentation of aims, results and conclusions	7.0 – 10.0
Use of visual aids	
Little or no use of visual aids	0.0 – 3.5
Patchy / inconsistent, sloppy production, ineffective at communicating content	4.0 – 4.5
Satisfactory, adequate standard of production, conveys basic content	5.0 – 5.5
Good, well produced, effectively conveys content and enhances talk	6.0 – 6.5
Excellent, meticulous production, conveys content in professional fashion	7.0 – 10.0

Marking scheme for Interim Report

	Mark
Logical structure and clarity of writing	
Little or no logical structure, poor sentence construction, difficult to extract information	0.0 – 3.5
Poorly structured, confusing prose, information can be extracted with perseverance	4.0 – 4.5
Satisfactory structure to report, prose conveys information successfully, occasionally confusing	5.0 – 5.5
In general, well structured and well written	6.0 – 6.5
Clear and logical presentation, articulate prose, interesting to read	7.0 – 10.0
Review of literature	
Little or no evidence of literature review	0.0 – 7.5
Patchy review, overview of few relevant papers with no critical appraisal	8.0 – 9.5
Satisfactory review, concise review of relevant papers, limited critical appraisal	10.0 – 11.5
Good, concise review of relevant papers, some critical appraisal, set into context of project	12.0 – 13.5
Excellent review, concise critical review, set into context of project, identifying gaps in knowledge	14.0 – 20.0
Scientific conventions	
Little or no coherent referencing and use of technical terms	0.0 – 3.5
Patchy / incomplete referencing and use of technical terms, frequent mistakes	4.0 – 4.5
Satisfactory referencing and use of technical terms, minor mistakes	5.0 – 5.5
Good use of referencing and technical terms, occasional mistakes	6.0 – 6.5
Excellent referencing and use of technical terms, few, if any, mistakes	7.0 – 10.0
Summary of progress to date	
Little or no evidence of summary of progress	0.0 – 3.5
Patchy, some evidence of progress but lacking continuity	4.0 – 4.5
Satisfactory, concise and coherent summary of progress to date	5.0 – 5.5
Good, concise and coherent summary set into context of project	6.0 – 6.5
Excellent, concise and coherent summary set into context of project with view to future work	7.0 – 10.0
Forward plan	
Little or no evidence of forward plan	0.0 – 3.5
Patchy, some evidence of forward plan but vague and / or confused	4.0 – 4.5
Satisfactory, concise and coherent forward plan with some specified objectives	5.0 – 5.5
Good, concise and coherent forward plan with clearly defined objectives	6.0 – 6.5
Excellent, concise and coherent summary, clearly defined objectives, set into context of project	7.0 – 10.0
Production standard	
Little or no attempt to present report in consistent and intelligible format	0.0 – 3.5
Patchy presentation, frequent errors in formatting compromising meaning and readability	4.0 – 4.5
Satisfactory presentation, minor errors in spelling and formatting but text conveys meaning	5.0 – 5.5
High standard of production, infrequent production errors, clear and labelled diagrams	6.0 – 6.5
Excellent standard of production, report set out in clear and attractive format, few, if any, errors	7.0 – 10.0