ELEC6021 Research Methods - Report Writing

These notes are designed to accompany the lecture on report writing. They contain a summary of the links provided in the slides and to related resources also available from EdShare http://www.edshare.soton.ac.uk/11547/

The aim of this two-hour lecture is to give you some insights into the skills which you will need to master which will help you with assignments which require report writing.

Effectively communicating the outcomes of research is an essential activity. During your masters degree you will be given various tasks which require you to write a report which gives a thorough account of a research activity which you have undertaken.

All students will benefit from spending time reading existing reports and academic papers which are concerned with their chosen academic specialism.

Structure

The class falls into two parts – reflecting two aspects of the activity.

- Basics or technical writing – approaches and citations
- Deeper technical considerations

I suggest you re-read the slides used in the lecture. It may be helpful to do this with another student and to discuss what you understand from the guidance, and how you will apply this in your work.

Summary FAQs

What does this part of ELEC6021 cover?

- This section of ELEC6021 introduces you to report writing in a general sense.

How will I learn about report writing from this part of the module?

- You will need to re-read the notes
- Discuss the points made in the lecture with your fellow students
- Identify specific areas of improvement which will be most important to you personally
- Practice what you have learnt in real assignments, refer to the notes to remind you what you need to do

When will I use the things I learn about report writing?

- You can practice the advice and guidance from this lecture when you complete assignments over the two teaching semesters of the course.
- They will also be relevant to the work you do undertaking your Master's dissertation.

What Next?

- Refer back to the class slides: In EdShare http://www.edshare.soton.ac.uk/11547/, work through the rest of this handout.

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Further resources

The remainder of this handout contains general advice, links to external references and documents designed to help in the proof reading, reviewing and writing development of high quality written work.

Important Note

- You will only improve your writing and researching skills by practice.
- Students who are technically and mathematically very able sometimes under-estimate the amount of time which is needed to write reports.
- It is important to understand and remember that technical writing and academic writing is a method of recording the outcome of your laboratory experiments and other research.
- If you are writing in a language which is not your native tongue, writing can be very time consuming; and you may find that writing is a very tiring activity.
- You need to plan your time carefully and understand that your writing will improve with practice, especially if you are prepared to learn from your mistakes.

Additional Resources:

After the class you may find the following resources useful

References/Webliography

University of Southampton

There are various sources of additional information provided by different parts of the University.

General University notes for academic skills topics include:

Although these resources were created a number of years ago, they are still relevant

- reading academically
- bibliographic software
- search strategies
- writing effectively
- referencing work
- giving a talk.

You can find links to the complete set of resources at http://www.academic-skills.soton.ac.uk
You may find additional resources if you enrol on the academic skills module via Blackboard http://blackboard.soton.ac.uk/

Academic Integrity

Read the general guidance

- http://www.studyskills.soton.ac.uk/integrity/index.htm

Work through the ECS academic integrity tutorial

- http://www.edshare.soton.ac.uk/7815/2/AIT.pdf

See the rules and regulations

- http://www.calendar.soton.ac.uk/sectionIV/academic-integrity-procedures.html

Be familiar with the academic integrity statement for students

- http://www.calendar.soton.ac.uk/sectionIV/academic-integrity-procedures.html

Understand the regulations as they are explained in the ECS student handbook

- http://www.fpse.soton.ac.uk/student_handbook

Information Skills (Library)

Information skills: notes of citation formats

- http://www.southampton.ac.uk/library/infoskills/references/

General notes for ECS students

- http://www.southampton.ac.uk/library/subjects/ecs/

English Language

Grammar: an introduction to traditional grammar (sections 1 and 2)

- http://www.soton.ac.uk/~wpwt/notes/grammar.htm

English for Academic Purposes

Details of extra classes and a set of guides for you to download

- http://www.southampton.ac.uk/cls/english/support.html

General External Resources on Writing

Spelling and Punctuation (Glasgow University)

Guidelines on spelling and punctuation, with exercises (the Aries project)

- http://www.arts.gla.ac.uk/SESLL/STELLA/ARIES/

Learn Higher (report writing) is a UK university project with very helpful exercises and guidance for students. This is a link to their notes and exercises to help in report writing
http://www.learnhigher.ac.uk/writing-for-university/report-writing/

The University of Toronto has a general writing centre, which is very informative
http://www.writing.utoronto.ca/
One is specifically a guide to writing lab reports,
http://www.writing.utoronto.ca/advice/specific-types-of-writing/lab-report

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Appendices Further Resources

Additional notes in this handout

A. Understanding University Mark Criteria
B. Coursework self review sheet
C. Self Mark Sheet – lab report specific
D. Information Source Evaluation Matrix
E. MSc Dissertation Mark Sheet

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Appendix A: Understanding Mark Criteria

University marked material is generally based around the following general set of criteria. When you are planning, developing or reviewing your work before handing it in, you are advised to try to make an objective review of the quality.

Each coursework will have its own specific mark scheme, so make sure that you pay attention to those requirements too.

Percentage	Interpretation
70%+	• Work of exceptional quality • Shows clear understanding of subject matter and appreciation of issues • Well formulated, arguments sustained • Tables and diagrams where relevant • Relevant literature references • Marked evidence of creative thought and originality • high level of intellectual work
60-69%	• Work of unusual quality • Shows strong grasp of subject matter and appreciation of dominant issues, though not necessarily finer points • Arguments clearly developed • Relevant literature referenced • Evidence of creative thought • Solid intellectual work
50-59%	• Work of solid quality • Shows competent understanding of subject matter and appreciation of main issues, though possibly with some gaps and inadequacies • Arguments clearly developed and supported by references though possibly with minor red herrings and loose ends • Some evidence of creative thought • Well prepared and presented
40-49%	• Work ranges from a bare pass to a safe pass • Shows adequate understanding of subject matter, but lacks breadth and depth • Takes a simple factual approach and does not attempt to interpret the findings • Work generally has gaps in understanding, argument and references • At the lower end indicates a need for considerable additional effort to achieve improvement
<40%	• Unsatisfactory • Shows a lack of understanding of the topics • Arguments and references may be irrelevant or absent • Work may be incomplete

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Appendix B Generic coursework review sheet

You are advised to use this self-mark sheet to help improve your writing and review your progress; you could also pair up with fellow students to go through this process.

- It will guide you through the process of checking the various different components of your coursework
- The components of the criteria are broken down into a number of distinct areas
- Before you hand in your work you are advised to review it from each perspective.
- Give yourself a grading of excellent, good , adequate, and inadequate.
- Revise your work until you are satisfied with your level of achievement.

Structure	Excellent	Good	Adequate	Inadequate	Structure
Relevant to topic					Little relevance
Topic covered in depth					Superficial treatment of topic
Argument	Excellent	Good	Adequate	Inadequate	Argument
Accurate presentation of evidence					Much evidence inaccurate or questionable
Logically developed argument					Writing rambles and lacks continuity
Originality	Excellent	Good	Adequate	Inadequate	Originality
Evidence of original and creative thought					Little evidence of originality
Style	Excellent	Good	Adequate	Inadequate	Style
Fluent piece of writing					Clumsily written
Succinct writing					Unnecessarily repetitive
Presentation	Excellent	Good	Adequate	Inadequate	Presentation
Legible and well set out work					Untidy and difficult to read
Reasonable length					Over/under length
Sources	Excellent	Good	Adequate	Inadequate	Sources
Sources adequately acknowledged					Some plagiarism
Correct citation of sources					Incorrect or incomplete referencing
Mechanics	Excellent	Good	Adequate	Inadequate	Mechanics
Sentences grammatical					Several ungrammatical sentences
Correct spelling and punctuation throughout					Much incorrect spelling and punctuation
Effective use of figures and tables					Figures and tables add little to argument
Correct and consistent use of units					Some units incorrect

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Appendix C Report Self Review Sheet

As well as becoming familiar with the typical mark boundaries, you can improve your performance by analysing your work against self-mark sheets before you hand in.

You are advised to use this self-mark sheet either individually or paired up with fellow students to go through this process.

- It will guide you through the process of checking the various different components of your coursework
- The components of the criteria are broken down into a number of distinct areas
- Before you hand in your work you are advised to review it from each perspective.
- Give yourself a grading of either: excellent, good, adequate, and inadequate.
- Revise your work until you are satisfied with your level of achievement.

Abstract	**Excellent**	**Good**	**Adequate**	**Inadequate**	**Abstract**
Tells you everything you need to know about the paper Sets context Identifies problem /challenge One line conclusion					Too similar to conclusions Contains discussion Rambling Too short Not fit for purpose
Introduction /Aims	**Excellent**	**Good**	**Adequate**	**Inadequate**	**Introduction /Aims**
Engages the reader Tells a story Sets the context/scene					Appear irrelevant Not "scientific" e.g. anecdotal, pseudo science, magazine article
Literature	**Excellent**	**Good**	**Adequate**	**Inadequate**	**Literature**
Referencing numbered Demonstrates that you understand the relevance of your own work Reinforce your argument Convinces reader of relevance of work					May appear to be either Superficial (hurried) Irrelevant Incomplete Done after the work!!
Methods	**Excellent**	**Good**	**Adequate**	**Inadequate**	**Methods**
Sufficient to be able to replicate the experiment/work Might demonstrate how you use a generic approach to analysis					Gaps Badly phrased Incomplete Confused order
Results	**Excellent**	**Good**	**Adequate**	**Inadequate**	**Results**
Likely to include tables, graphs and figures Tables labelled Graphs have clear and reasonable axes which are labelled appropriately scaled					Incomplete data Data presented in Inappropriate format Tables are often the worst Stuff in results section which should be in appendices
Conclusions	**Excellent**	**Good**	**Adequate**	**Inadequate**	**Conclusions**
Includes pointers to future work Objective, addresses any errors which might have occurred. Does not have to be positive					Muddled Inconclusive Unconvincing Illogical Wrong

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As well as these reviews which relate to each section of the report, there are some general criteria shown in the next table

Further details which are important components of your report

Review each of these independently

Tables/Diagrams					
	Excellent	**Good**	**Adequate**	**Inadequate**	
Labelled axes with units Showing intended detail					Incomplete Poorly labelled
Appendices					
	Excellent	**Good**	**Adequate**	**Inadequate**	
Included Relevant Clearly referenced Clarifies the rest of the document.					Not included Incomplete Poorly referenced No clear relation to rest of text
Bibliography/references					
Own Work	**Excellent**	**Good**	**Adequate**	**Inadequate**	**Not your Own Work**
Experiments authentically recorded and presented					Copied Cut and paste Not original
Overall review					
	Excellent	**Good**	**Adequate**	**Inadequate**	
Readable					Readable
Spelling /grammar					Spelling /grammar
Structure					structure
Voice					Voice
Meets the specification					
	Excellent	**Good**	**Adequate**	**Inadequate**	
Layout meets spec					Layout does not match spec
Within page/word limit					Exceeds page/word limit
All required tasks addressed					All required tasks addressed

Finally

Of course you always need to read the specific marking criteria for the coursework for which you are writing the report or dissertation.

Appendix D Information Source Evaluation Matrix

You can use this information sheet as a checklist when you identify materials which you reference. Rate your reference and add up the score. The best references yield the highest score.

dmu.ac.uk
DE MONTFORT UNIVERSITY
LEICESTER

Department of
Library Services

www.**library**.dmu.ac.uk

Information Source Evaluation Matrix

Always evaluate your information

	1	2	3	4	5	Mark
Who? – is the author	Author background is unknown	Some evidence author works in this area but few articles	Evidence of some publications in this area by author	Author has several published works in this area	Author is a known authority in this area	
Score						
What? – is the relevance of points made	Content and arguments of little or no relevance to the task	Only of peripheral/little relevance to task being undertaken	Some of the content is relevant to task requirements	Several points made are of relevance to task	Content and arguments closely match your needs	
Score						
Where? – context for points made	Situation to which author applies points is different to that of the task	Minimal similarity between author's context and the task context	Author's situation and that of the task have some similarity	Reasonable similarity between author's and task context	Author's context and that of the task very similar	
Score						
When? – was the source published	Date is unknown or older than 20 years old	Old reference – between 10 and 20 years old	Reference is between 5 to 10 years old	Recent reference is 2 to 5 years old	Up-to-date source – published in last two years	
Score						
Why? – author's reason/purpose for writing the article	No apparent motivation seen in article	Newspaper (or online) article opinion – not evidenced	Trade magazine/ commercial paper – might have some bias	Book source/ conference paper or subject interest forum/ blog	Academic journal paper – peer reviewed	
Score						
Source/Reference:					**Total marks**	

Task/Question:

Leigh, Mathers and Towlson (2009)

More information inside

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Appendix E MSc Marking Criteria

Your ultimate ambition as you work on your Masters degree will be to gain the best possible mark in your dissertation project. If you understand that the report will be used to provide the evidence of the work which you have undertaken.

Reports are written to provide a narrative of the work which has been undertaken. The better you can describe and analyse your work, the more likely you are to be able to maximise your potential achievement. The Mark scheme will help you set your objectives

Range		TYPICAL DESCRIPTORS AND ATTRIBUTES				
		Technical Approach: Design and Knowledge	**Testing, Evaluation and Understanding**	**Main Report and presentation**	**Project management, Professionalism and Reflection**	**Results and achievement**
Distinction	**91% - 100%**	**QUITE EXCEPTIONAL**				
		Outstanding analysis (requirements, costs, benefits, constraints); design (simulation, modelling); implementation; use of an extensive range of tools and techniques;	Outstanding testing; critical and comparative evaluation; complete understanding of subject and relevance	Extremely well written, structured and formatted, no spelling or grammatical errors; Extensive review of related work and references as in a typical research paper; Abstract can be read independently	Outstanding planning, progress, time management, and contingency planning.	Outstanding: new, publishable results; Deployable, innovative product
	80% - 89%	**ORIGINAL CONTRIBUTION**				
		Excellent analysis (requirements, cost, benefits, constraints), design (simulation, modelling); implementation; use of a wide range of tools and techniques	Excellent testing, critical and comparative evaluation; considerable understanding of subject	Very well written, structured and formatted, few spelling or grammatical errors; Review of related work, range of references including journal articles; Abstract can be read independently	Excellent planning, progress, time management, and contingency planning	Excellent results; innovation and creativity; probably publishable; usable product
	70% - 79%	**EXCEPTIONAL FEATURES**				
		Detailed analysis of requirements, costs and benefits; very well designed and implemented; use of simulation/modelling/prototyping and a range of tools and techniques	Very good testing, critical and comparative evaluation; Good understanding of subject and relevance.	Very well written, structured and formatted, review of related work including research papers	Very good planning, progress, time management, and contingency planning	Significant results; some innovation and; possibly publishable or worthy of utilisation
Merit	**60% - 69%**	**A SOLID PRODUCT**				
		Good technical skills, well designed and implemented, with adequate analysis/modelling	Well tested, good evaluation; fair understanding of the subject.	Well written, structured and formatted, review of related work, references to material used	Student worked well, planning and managing the work	All major goals achieved, possibly worth of utilisation
Pass	**50% - 59%**	**CLOSE TO BRIEF**				
		Adequate technical skills, adequately designed and implemented, some analysis and modelling	Adequate testing and evaluation; some understanding of subject.	Adequately written, structured and formatted, some background reading and references	Student worked steadily, needing guidance, the occasional lapse	Most major goals have been achieved
Fail	**35% - 49%**	**SOME EVIDENCE OF PROGRESS**				
		Adequate technical skills, but weaknesses in one of analysis, design, or implementation	Partial testing and evaluation; little understanding of subject	Adequately written but significant errors structure/format, some background reading.	Student worked sporadically, loss of morale and initiative	Some major goals have been achieved
	0% - 34%	**LITTLE EVIDENCE OF PROGRESS**				
		Poor technical skills, weakness in or absence of analysis, design and implementation	Little testing or evaluation; no, or hardly any understanding	Poorly written and structured report, little evidence of background reading, poor or missing references.	Needed considerable supervision. Poor or no evidence of planning,	Little progress towards achieving project goals