

Final year dissertations and review paper general guidelines

1. About the final year dissertation and review paper

The final year dissertation and review paper are distinct from much of the course work that you have had so far. For the first time in your course you will be asked to put together the skills gained in these years in order to tackle a problem that possibly no one else has done before you. As thus they constitute a much needed bridge between a passive and an active learning mode.

These courses can also be considered as the bridge to the real world, in that, much of the work done at post graduate level and in non academic employment is of this type. For most of the students this will be an enjoyable experience given that it is a break from the conventional mode of studying. However, these courses come with a new set of duties and responsibilities that one needs to stand up for. The way in which the student manages to cope up with them will in the end determine the degree of success attained as well as the ultimate benefit, in terms of learning outcomes, which he/she will gain.

2. Preparing for the courses

Unlike other course where no preparation is expected, in reading the final year dissertation and review papers some preliminary work can be carried out before the actual start. While this introductory work is strictly not required, the student who takes active interest beforehand will find himself at an advantage with respect to others who do not. As thus, this is one of the first responsibilities that the student is expected to take up himself/herself.

Now, what can be carried out beforehand by the student? This answer is quite simple. The student is expected to understand the duties and responsibilities that these courses entail before committing himself to them. In this way he/she will know already what is expected from him/her. Such a thing will avoid him/her the need to adjust to the requirements set by the course once it starts.

There are various ways in which the student can start exploring the skill needed. The simplest is to participate in the annual symposium consisting of presentations of the final year dissertations and review papers. Apart from the fact that listening to presentations helps developing the skills needed to carry out such talks, the presentations also give indications of the topics being made available by the department, the level of difficulty associated with each topic and what kind of work is expected to be carried out in these units.

Further details of what the student can do before the undertaking the courses will be indicated as we go along.

3. Making the right choice

Close to the end of the second semester of your third year, the lecturers in the department will make available a list of titles together with a description of the possible dissertations and a list of titles of the possible review papers. The first thing to do is to read carefully through the list and the descriptions and try to figure out which are the ones that fall in your main interest.

Now making the right choice constitutes the first important step toward the ultimate success. As humans we work better if we work on something that we like and if we can work at our pace. In other words we need the right environment. However, the right environment for one person is the wrong for another. Thus no one is in a better position to make the choice other than you. But in order to do so you must keep mind the right criteria for you. Since the right criteria are subjective, it is not possible to make a comprehensive list. In order to place yourself in a good position to make the choice you should try to acquire as much information as possible.

The first important piece of information is the requirements set for the projects of choice. If you start a project without having the necessary skill, you can either end up overburdened – since you need to catch up before you start – or else end up not being able to complete the project in a satisfactory way – in which case your marks will suffer. Thus you need to make sure that your abilities match the prerequisites set for the project. This might require that you discuss the project with your prospective supervisor.

Same thing applies to points which are not clear. These are best dealt with if they are discussed with the supervisor(s) of the project. Of particular importance is the way in which the supervisors would like to work – remember that different people work in different ways and some ways might be good for you others not that good. As a matter of fact a discussing with the prospective supervisor and with others that went through the same experience is possibly one of the best ways in which to get a feel of what the project entails.

As a final note, please keep in mind that it is one of your responsibilities to ensure that you are able to carry out the work for which you are committing yourself. You should never expect the supervisor to cover-up your short comings or expect that someone else patches the work for you. So take all the necessary steps to ensure that you make the right choice for you since you will be expected to live up to it.

4. Allocations of the projects

Once you have handed in your preferences, the department will undergo a process by which projects will be allocated. There are various reasons which make this process a necessity. Among the most important, one can mention that more than one student can decide to opt for the same project and the fact that no single lecturer can be given a large number of students as this will compromise the quality of the supervision and ultimately the end success of the students themselves.

You can understand that while the main goal of the exercise is to satisfy both the student and the supervisors alike at times there will be conflicting interests. This will in turn require compromise for a satisfactory solution. The department pledges itself to try and find the best solution for everyone and in so doing establishes fair procedures. However, since requirements change with time, these practices may need to be emended to resolve standing issues.

5. Proposing your own project

Some students might desire to work in a particular area. Given the necessary selection procedure described in Section 4 it is not possible for the department to guarantee that one of the projects in the area of choice can be allocated to the student. Proposing one's own dissertation or review is a way for the student to overcome this difficulty.

The decisional process motioned in Section 4 refers to project that the supervisors propose. If a student comes up, on his own initiative, with his proposal, it will be given a preferential allocation. This is a way of rewarding the student for the extra effort he/she goes through in order to bring up the proposal.

Does this mean that all proposals will be accepted? No not at all. There are some criteria that the proposal must satisfy in order for it to be accepted. The first is that it must be substantial enough to justify building a project around it. Another is that the student has to ensure the support of a supervisor. Thus it is required that the student approaches the prospective supervisor to discuss their initial plan. This will help the ideas to mature into a concrete proposal. Following this the student is expected to write, on his/her own account, the actual proposal and submit it to the department for approval.

Note that one should forward his/her proposal before the official titles for the dissertations and review papers are issued. The reason for this is that some project might need to be dropped if a supervisor has already accepted to tutor someone under this scheme. Following the official issuing of the titles, it would be unfair to withdraw a title for which someone else might have applied. It will be your responsibility to ensure that you submit your proposal by the given deadline.

6. Working on the project

Once you have been appointed a project and a title you should approach the supervisor in order to confirm that you will be working on the project and to agree with him the scheduling of the work. The supervisor will then guide you through the steps needed in order to complete successfully the project.

Such a journey can be a very nice experience. However, some things have to be kept in mind. This is a real-life experience and in real life hardly anything works right the first time round. Dealing with the problems that arise in the day-to-day work on the project is one of the skills you are expected to develop. In other words you should not be constantly fetching out the help of the supervisor for every little problem that you

might experience as your ability of dealing with problems as they arise is part of what you can be assessed on.

While the supervisor will always be a reference point and be available to assist, you should not miss interpreted his role: Supervisors are not there to do the job for you. Thus, while the supervisor is allowed to guide you through the difficulties, he/she is not allowed to do the work himself/herself. There will be things that he/she is allowed to do and other which he/she is not. For example, if you are asked to write some code for a computer program the supervisor is expected to help you debug it but he/she should not be expected to write it out for you or make a complete rewrite; if on the other hand if you need to setup some laboratory equipment, the supervisor will be more than willing to assist you if you get stuck but he/she should not be expected to set up everything for you. Remember that the dissertation and review paper are about your work and not the work of someone else. If at the end of the day your input to the project is not substantial you will run the risk of getting a bad grade.

On the other extreme, working on your own, without any reference to the supervisor is also inappropriate. The supervisor should be kept informed about the progress you are making and the direction in which you would like to work. In fact this is one of your responsibilities and you should not expect the supervisor to repeatedly fetch you up to obtain progress reports. The reason for this is that the supervisor, with his experience, will be able to indicate the most profitable direction to take. Remember that at the end of the day you need to deliver, and wasting time reinventing the wheel is not productive. In fact the supervision process is meant to guide you thought the most profitable pathway that should ensure maximum benefit from the experience.

Does this mean that you cannot do anything out of your initiative? No, not at all. In actual fact proposing one's idea is a point of merit in the project. However, ideas should be moderated by the supervisor for your own good.

As a final remark, as the work unfolds the tutor and the department will set deadlines for the completion or submission of work. Once again it will be your responsibility to meet these deadlines.

7. The write-up

Once the project is completed – or in practice near completion – you will be asked to produce the write-up. This is just a roundup of the objectives, procedure, results and conclusion of your work. In general this will also include in the first chapter a literature review.

One can never stress sufficiently the importance of the write-up in a dissertation or a review paper. The simple reason for this is that it is the main medium with which you will be assessed. Remember that out of all examiners, only the supervisor will have an idea of what you did from a first hand experience. All the others can get to appreciate the work only through what you write in the report. The main points to keep in mind while working on the write-up are listed in what follows. For a detailed description of the formatting rules that you should observe you are kindly asked to refer to the accompanying *Final year dissertations and review paper general guidelines*.

7.1 Structure

The report should have the following section in the order given:

- Title page: This page should contain:
 - ⇒ The title of the work;
 - ⇒ The student's name;
 - ⇒ The year of presentation;
 - ⇒ The supervisor of the work;
 - ⇒ The following or equivalent statement:

“A dissertation presented to the Faculty of Science in part fulfillment of the requirements for the degree of Bachelor of Science (Hons.) at the University of Malta”

- Statement of authenticity: This is a statement whereby you pledge that the work being presented is your own. The form is provided by the university and is the same irrespective of the department, institute, centre or school in which you are registered. You can find the relevant forms from,

<http://www.um.edu.mt/registrar/students>

under the heading *Administrative Forms - Faculty/Institute/Centre/School*. The form which you need depends on your degree. A direct link for the one to be used for long essays and undergraduate dissertations is found here,

http://www.um.edu.mt/_data/assets/pdf_file/0006/254319/authenticityformug.pdf

For post graduate work you should use,

http://www.um.edu.mt/_data/assets/pdf_file/0016/254320/authenticityformpg.pdf

while for a Ph.D. you should use,

http://www.um.edu.mt/_data/assets/pdf_file/0017/254321/authenticityformdoctoral.pdf

Note that these forms can change at any time. Thus, in case the above links do not work, you should check the link to the registrar web page (first link above).

- Abstract: This is a short summary of the objectives of the study, the work undergone, the results obtained and the significance of the work. The abstract should be placed on a page on its own.
- Indexes: You need to have:
 - ⇒ A contents section with all the heading used and the page where they can be found;

- ⇒ An index for all the tables, including caption and the page on which they can be found;
 - ⇒ An index of all the figures, including caption and the page on which they can be found;
 - ⇒ If needed a list of variables, superscripts and subscripts;
 - ⇒ If needed a list of acronyms used.
- *Acknowledgements*: This section is used to give due recognition to those who have supported you while working on the project.
 - *Introduction*: This is generally used to give a literature review on the topic on which you have been working; a more detailed description of the objective; and the justification for doing the work;
 - *Main body*: The detailed structure of the main body depends on the details of the project itself. General pointers of what should be listed are:
 - ⇒ A chapter detailing the work done in this project. **You should clearly indicate which part of the work was carried out by yourself and which was carried out by others;**
 - ⇒ A chapter detailing the results and your conclusions.
 - *Discussion and/or conclusion*: In this section you should explain what was accomplished during this work giving a summary of the results and the conclusions derived. You should also discuss the importance of your achievement, the limits of your work and further work that can be undergone.
 - *References*: This includes all the sources you have referred to in your write-up.
 - *Bibliography*: This section might not be necessary. You should include it if you have actually read some source that you have not referred to in the main text.
 - *Appendices*: These should be used to give additional work, information or results that would be cumbersome to include in the main text.

Excessively long write-ups are discouraged. If your dissertation is longer than 100 pages or your review paper longer than 15 pages than it is likely that you are giving more information than needed. In fact these are the maximum number of pages indicated on the respective study unit descriptions. Remember that part of the skills you are expected to show is the ability to be concise and to the point. Things to avoid include repetition and excessive details especially when it comes to results. If you have a large number of graphs, all of which illustrate the same principle you can try to join them up. If this does not work, then you should consider giving a representative sample and include the remainder in an appendix. In extreme cases where the number is excessive even to include them in an appendix, you should provide them in an electronic format. The same thing applies to raw data and results derived from numerical analysis. If in doubt you should consult with your supervisor on best practices.

Should it not be possible for you to stick with the above outline due to the nature of your work you should consult supervisor. In turn your supervisor might consult with the examination board to determine a workable solution.

As at tip, while you are writing the report you should keep in mind that in the viva voce (see Section 9) you are liable to be questioned on whatever you decide to include in the report. Thus ensure that you fully appreciate whatever you are writing down. Do not yield to the temptation of including topics that you have little or no idea about just to fill in space.

7.2 Numbering of pages

The pages should also be numbered, with the number being placed at the top or bottom outer corner of the page. In general the pages are numbered starting from one and using roman numbers from the beginning till the first chapter. From the first chapter onwards Arabic numerals should be used starting again from one. It is also possible to number everything using Arabic numerals from the beginning to the end.

It is also customary to start showing the page number with the page of contents, i.e. in the pages preceding the contents no number should be shown even though the pages should be counted in starting from the title page.

7.3 Header and footer

You should include a header starting with the page of content to indicate the title of main heading under which you the text is included, i.e. contents, list of tables, list of figures, chapter, references, bibliography, appendix and the like. It would also be good practice to include a horizontal line between the header and the main text.

On the other hand you should not include a footer in the write-up.

7.4 Correction of the draft

Once you have written everything to your satisfaction, making sure it conforms to all the requirements set, you will be asked to hand this draft copy to your supervisor. The details of the timing for this process should be discussed with your supervisor.

Your supervisor will read and return it to you in a reasonable amount of time, indicating the changes that ought to be carried out. It is then your responsibility to address the changes in the proper manner. This means that you should not expect the tutor to carry out the changes himself. Likewise you should not expect the supervisor to read the report over and over again to ensure that the necessary changes have been carried out. Please keep in mind that the write-up should reflect your abilities not those of your supervisor.

7.5 Checking for plagiarism using Turnitin

Once you have carried out the changes indicated by your supervisor in the draft you and you think the dissertation is ready, you should check for any possible plagiarism by submitting a soft copy through the Draft Turnitin portal that should have been made available to you. You should then analyse the Turnitin report for any possible issue.

Instructions on how to interpret the Turnitin report are given in the accompanying *Final year dissertations and review paper general guidelines*. The most important things to keep in mind are:

- **The percentage similarity given by the Turnitin report is not a good indicator of whether or not plagiarism has occurred.**
 - To determine whether plagiarism has occurred it is best to look for the following:
 - ⇒ Whole sentences (including paragraphs) that are marked as copied.
 - ⇒ Repeated occurrences within the same paragraph or adjacent paragraphs from the same source.
- Check the notes provided by the Department of Physics and the guidelines of the University of Malta for more details.
- **You can ask your supervisor and anyone else of your trust to help you interpreting the Turnitin report.**
 - It is your responsibility – and not that of anyone else who might have helped you – to ensure that all plagiarism problems are removed.
 - The University of Malta regulations allow you to pass the dissertation through the draft Turnitin only once.

Since prevention is better than cure, in order to avoid any problems, you should simply **avoid copy and pasting anything from any source**.

7.6 Handing in the write-up for examination

Once you are confident that there are no plagiarism issues, you should:

- Hand in three complete hard copies to the secretary of the department.
- Submit the finalised dissertation through the Final Turnitin portal.
- Send a soft copy to the secretary of the department.

Make sure to do so by the deadline established by the department. In the case that the soft copy contains many files making it difficult to browse through its content, you should provide an instruction set describing the files and their content. In the case the files are not in document or pdf formats you should also indicate the appropriate way of accessing them.

Note that, the hard copies should be printed on good quality paper using A4 sheets. In order to bind them you can use spiral, thermal or an equivalent type of soft binding.

7.7 Final submission of the dissertation

In the case of the final year project, following the viva voce (*see* Section 9), you should make the necessary changes indicated by the board of examiners. In the process it is good practice to consult with your supervisor in order to ensure that all the necessary changes have been made.

Once this is carried out you can finally submit three hard copies of the work – one for the Department Library, one for the Melitensia section in the University Library and one to be retained by your supervisor. This time the copies should be hard bound with the following specifications:

- The copies should be bound with a black board;
- The front board should contain:
 - ⇒ The dissertation title
 - ⇒ The student name
 - ⇒ Course, such as B.S. (*Hons.*), M.Sc. Ph.D.
 - ⇒ Year of submission
- The spine should also contain:
 - ⇒ The dissertation title
 - ⇒ The student name
 - ⇒ The course
 - ⇒ The year of submission
- Printing on the black board should be in gold.
- The paper used should be of very high quality. You should check with your favourite stationary about the paper usually employed for the finalised versions of the dissertations.

Apart from these you are once more asked to forward a soft copy to the secretary to be kept as a permanent record.

8. Presentation

As part of your work on the dissertation and the review papers you will be asked to make a talk where you will present your project. This will take place during an annual symposium set up by the department and is very important as part of the assessment is based on it.

While you might consider this as an extra hurdle to tackle, please remember that whatever you are likely to do after you finish your degree, whether teaching, doing research, or working in industry, it will most be required to do presentations. There is

little that can be done to avoid presenting one's work. For this reason the right way to look at this experience is that it is providing you the possibility of improving your oratory skill for later use in your carrier.

Guidelines that are meant to help you obtain that maximum benefit from the experience are given below:¹

- Students are to submit a title and an abstract for the presentation, following discussion with the supervisor on or before the stipulated deadline, which is normally two weeks before the symposium.
- Students should present themselves properly dressed. A formal dress code should be adhered to.
- The duration of the presentations is as follows:
 - ⇒ 15 minutes for final year dissertation/short review paper presentation
 - ⇒ 30 minutes for Masters students
 - ⇒ 50 minutes for Ph.D. students
- Note that the above time slots include around 5 minutes for questions and/or discussion.
- The presentation should include an overview of the subject, a short summery of the work undertaken, results obtained where applicable and a suitable conclusion.
- The student is strongly advised to consult with the supervisor on the material to be presented.
- The presentation will be prepared in electronic form and shall be compatible with projection by means of a data projector. It shall be provided on a compatible memory medium to the organiser well before the start of the session when the respective presentation is schedule.
- The presentation is to be written in good English and should be accompanied by an oral description in the same language.
- It is good practice not to read from the presentation medium but to address the audience directly.
- Students should keep in mind that they will be assessed on their performance and the mark will contribute to the final mark of the course, where applicable.
- The presentation should not contain long paragraphs. It is good practice to use short verbal statements and sufficient illustrative figures. Additional details should be provided orally.
- It is strongly recommended that students attend the regular physics seminars organised by the department in order to observe presentation skills.

¹ Gratefully thank Professor Charles V. Sammut for his contribution in setting these guidelines out.

- It is also recommended that the student practices the presentation beforehand. Please consult with the department if you would like to use the data projectors and lecture rooms facilities to this end.

9. Viva voce

The final part of the examination of a dissertation, for which marks will be allotted, consists of an oral defence of the project called the viva voce. The scheduling of the viva voce occurs soon after the end of the examination. Each student will be given a time slot where he/she is expected to present himself/herself at least 15 minutes ahead of time and dressed formally. He/she should also bring with him/her a soft bound hard copy the dissertation.

The examination body usually consists of a chairman, the supervisor and an examiner. The examination body will take turns in asking questions to the candidate about his/her work. This exercise is intended to ascertain the level of competence of the student on the topic that he/she has worked on. Thus a good way of preparing oneself is to read around the subject and revise the write-up before the viva voce.

While you might not be acquainted to this mode of examination, you should not take it as a negative experience. There is much you can learn from it. Remember that interviews are part of life. For example, in order to get a job you are most likely to be request to do one. So you look at the viva voce with a positive attitude, it being the last experience from which you can learn before the degree is completed.

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