

# NANYANG TECHNOLOGICAL UNIVERSITY

School of Electrical & Electronic Engineering  
Nanyang Avenue, Singapore 639798

## **Final Year Project PART-TIME B.ENG PROGRAMME Student Guidelines**

December 2009

Compiled by  
FINAL YEAR PROJECT COMMITTEE, 2009

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### **1. INTRODUCTION**

As part of NTU's curriculum, all final year students of the School of EEE are required to undertake a project, supervised by one faculty member. This project involves an in-depth study, investigation, construction of hardware and/or development of software and testing in areas of specialized courses offered in a final year option group, and comprises of a total of 10 academic units, spread over **four** academic years in the 4<sup>th</sup> and 5<sup>th</sup> years of studies. Students are required to submit a formal report, carry out a project demonstration and also give an oral presentation upon completion of project.

The Final Year Project Committee of the School is entrusted with the task of overseeing the coordination of all final year projects. The Committee has prepared this set of guidelines so that all students are aware of the various project requirements in terms of project schedule, project report and presentation.

#### **1.1 Eligibility for FYP**

An invitation email regarding project selection will be sent to students who are eligible for FYP.

#### **1.2 Project Duration**

Students are allocated 3 hours per week in each semester of their 4<sup>th</sup> and 5<sup>th</sup> years of studies.

#### **1.3 Project Selection and Allocation**

Eligible students can select EEE FYP projects once per academic year around the end of Semester 1 (April/May).

Each student can select up to 10 projects. FYP program allocates projects based on the order of preference from student's 1<sup>st</sup> to 10<sup>th</sup> preferences. If a project is chosen by only one student as the first preference, it will be assigned to the student. If there is more than one student choosing a particular project as the first preference, the program will give preference to student who puts in more choices. A random number will be generated if all students put in 10 choices. This random number ranges from 1 to the total number of students choosing that project as the first choice. That particular project will be temporarily assigned to a student of the generated random number. After processing the first preferences of all students, the same method is repeated for all the remaining unassigned students starting from their 2<sup>nd</sup> preference up to the 10<sup>th</sup> preference. At the end of this allocation cycle, the configuration of the project assignment and the number of unassigned students are recorded.

A subsequent allocation cycle is repeated in exactly the same way as the previous cycle. A new project assignment together with a new number of unassigned students are obtained and compared with the number of the unassigned students in the previous cycle. The program always keeps the configuration of project assignment that has a lower number of unassigned students. Through processing of more than a thousand allocation cycles, a minimum number of unassigned students is thus obtained. A list of all the remaining projects will then be posted on Web and the remaining unassigned students will be invited to select another 10 choices. Allocation is again made on the basis of preferences and the same

allocation process is repeated. In this final round of processing, all students will be allocated a project of their choices.

#### **1.4 Laboratory Allocation for Projects**

Lab will be allocated to FYP students. Faculty members could indicate whether their project proposals have some special requests. The FYP Committee is working out a new scheme for lab allocation and will update student guidelines when the scheme is finalized.

### **2. PROJECT ASSESSMENT**

There are two components for the assessment of a project: 1) Interim Assessment and 2) Main Assessment. An interim assessment of the project is done at the end of 2<sup>nd</sup> semester of 4<sup>th</sup> year by supervisor when the project is about half way through. The Main Assessment, which consists of Report, Demonstration, Oral Presentation and Final Assessment, is done at the end of 2<sup>nd</sup> semester of 5<sup>th</sup> year. To have an independent examination in the Main Assessment, the School will appoint an examiner for each project. Both the supervisor and the examiner will perform an independent evaluation.

#### **2.1 Interim Assessment**

The interim assessment is done by the supervisor only and is based on a Project Plan/Strategy, its implementation and an interim report about the project progress and results obtained. The supervisor will then grade each student on his or her progress and performance at the end of 2<sup>nd</sup> semester of 4<sup>th</sup> year.

##### **2.1.1 Project Plan/Strategy**

During the course of the project, each student's progress will be closely monitored by his/her supervisor through meetings and/or progress reports. A short project plan/strategy report (2-3 pages) is required from student about six weeks from the start of the project. This may be a summary describing the main objectives of the project, student's proposed way of carrying out the project and a proposed weekly schedule in a chart form.

##### **2.1.2 Interim Report**

It is compulsory for each student to submit a short interim report at the end of 2<sup>nd</sup> semester of 4<sup>th</sup> year. The report will highlight the progress made by each student towards meeting FYP objectives laid out in the project plan/strategy and will be limited to 4-5 A4 pages.

#### **2.2 Main Assessment**

The Main Assessment of FYP is conducted at the end of 2<sup>nd</sup> semester of 5<sup>th</sup> year. It has two components: (a) assessment of Final Report and Oral Presentation, which are assessed independently by both the supervisor and the examiner, (b) assessment of Demonstration by examiner only and Final Assessment by the supervisor only.

##### **2.2.1 Final Report of Project**

A formal, type-written final report in one-and-a-half spacing is required from each student. The main body of the report should normally contain 40 - 60 pages. If this guideline is not complied with, students may be asked to resubmit the report.

Detailed guidelines on report format and other requirements are attached in Appendix A.

##### **2.2.2 Project Demonstration**

It is compulsory for students to make arrangement with examiner to view a project demonstration immediately after submitting the final report. For those projects which are research oriented or exploratory in nature, for which project demonstration may not be possible, examiners will interview students to gauge how well they have understood their work.

### **2.2.3 Oral Presentation**

Supervisor and the examiner will attend and assess the oral presentation which is compulsory for all students. The time for an oral presentation is 25 minutes, consisting of 15 minutes of presentation and 10 minutes of question/answer session. Questions will be asked to assess students' understanding and knowledge of the project.

Students who have valid reasons or official leave during the oral presentation period must contact their supervisor and examiner well before the oral presentation.

### **2.2.4 Final Assessment**

This assessment is done only by the supervisor on the student's initiative, responsibility, ability and independence throughout the whole project duration as they are important ingredients contributing to the successful completion of the project.

## **2.3 Assessment Summary**

A summary of the various assessments made by supervisor and examiner is shown in the Table below.

<b>Component</b>	<b>Assessor</b>
1. Interim Assessment	Supervisor
2. Report and Final Assessment	Supervisor
3. Oral Presentation	Supervisor & Examiner
4. Final Report & Demonstration	Examiner

The assessment criteria for the various assessments are given in Appendix B.

## **2.4 FYP Schedule**

Please refer to the [FYP website](#) for FYP schedule. Students should adhere to the given schedule.

## **3. CHANGE OF PROJECT TITLE/SUMMARY/SUPERVISOR**

In some cases, it may be necessary to modify/change the project title/summary. The supervisor can do so on-line in the Stafflink but changes cannot be made once the FYP committee has called for selection of projects for examination. After the supervisor has submitted the changes, the system will automatically send a notification email to student of the affected project.

The FYP Committee does not encourage the change of supervisor. For special case where the change of supervisor is necessary, the existing and new supervisor as well as the student must all agree with the change. In such a case, a request for change of supervisor must be submitted by the new supervisor in an email to A/P Ma Maode, in charge of Part-time FYP, before the recess week of 2<sup>nd</sup> semester of 5<sup>th</sup> year, copied to the existing supervisor and the student involved.

## **4. FULL TEXT REPORT TO LIBRARY**

For the instruction of submitting Full Text Report (softcopy) to library through Digital Repository @ NTU, please go to the link <http://repository.ntu.edu.sg/drntu/procedure.htm>

## **5. FREQUENTLY ASKED QUESTIONS (FAQs)**

Some commonly asked questions and answers can be found at [http://www3.ntu.edu.sg/eee/fyp/ptfyp/faq\\_pt.asp](http://www3.ntu.edu.sg/eee/fyp/ptfyp/faq_pt.asp)

## APPENDIX A - GUIDELINES ON REPORT FORMAT AND OTHER REQUIREMENTS

1. The main body of the report (excluding charts, diagrams, appendices, tables, references, etc.) should normally contain 40 - 60 pages. You may have to resubmit a condensed version of your report if you exceed this limit.
2. Your report should meet these typing and layout requirements:

Component	Assessor
Page	White A4 size bond paper of at least 80g /m2.
Text	Times New Roman, font size 12
Margins	35mm margin on the left hand side and 30mm on the top, bottom and right hand sides of each page.
Typing	The same font and pitch for the whole report except when highlighting important matters.
Spacing	One-and-a-half spacing.

3. To maintain consistency, you are required to follow the same format when preparing final reports, The contents of the report should be in this order:

- (a) Cover Page
- (b) Table of Contents
- (c) Abstract *(not more than one page)*
- (d) Acknowledgements to give recognition of any advisory or financial assistance received in the course of the work on which the report is based *(optional)*
- (e) Acronyms *(optional)*
- (f) Symbols *(optional)*
- (g) List of Figures
- (h) List of Tables
- (i) Main chapters (Chapter 1, Chapter 2.....)
- (j) References
- (k) Appendix *(optional)*

[Click here](#) for the report template file.

4. The Standard International System of Units (SI) should be used
5. Each reference, be it from a journal, text book or conference proceedings, should be listed consistently, as in the example below.

- (a) Breuer, M A, and Friedman, A, Diagnosis and Reliable Design of Digital Systems, Computer Science Press, Potomac Md, 1976.
- (b) Wakerly, J F, 'Microcomputer reliability improvement using triple-modular redundancy', Proceedings of the Institute of Electrical and Electronic Engineers, Vol. 64, No 3, March, pp 889-895, 1976.
- (c) Hata, M Kinoshita, K, and Hirade, K, 'Evaluation of diversity effects on mobile radio system design', The Transactions of IECE of Japan, Vol. 64, No 5, May, pp 31-33, 1981.
- (d) Comer, D J, Digital Logic and State Machine Design, 2nd ed. San Francisco, Saunders (HRW), section 7.1B, 1990.
- (e) Mano, M M, Computer Engineering Hardware Design. New York: Prentice-Hall, sections 5.2 and 5.3, ch. 7, 1988.
- (f) Tanenbaum, A S, Structured Computer Organization, 3rd ed. Englewood Cliffs, NJ: Prentice-Hall, section 4.2.1, 1990.
- (g) PAL Device Data Book, ,Advanced Micro Devices, 1990.

6. The Report of final year project is an important component in the assessment of the Final Year Project. It is written for the supervisor and the examiner. The examiner is an independent party appointed by the School to assess the project. Very often the project report is the main instrument the examiner uses to judge the project. He/she may not be aware of the many hours you may have spent on the project. The credit given to you will be based mainly on their understanding of concepts and knowledge shown in

each report. So a poorly or carelessly written report, presented after months of hard work by each student, may not be received well by an examiner.

In a project report, one generally looks for the following:

- (a) a clear idea of the scope, objectives and background of the project.
- (b) analysis of all factors in the project, noting dependency of constraints. A clear and concise presentation of any theory required must be made.
- (c) use of references which is evident that students have read about the related subject. A list of references alone is insufficient. Any work not done by the students but included in the report must be duly referenced. It is to be noted that plagiarism is a serious violation.
- (d) results, discussions and suggestions for further work to assess the understanding of technical concepts and the perception value of work done. Results must be appropriately presented with tables, graphs, charts, etc., wherever possible and must be linked to the objectives of the project. Interpretation and discussion of results must be put into context of the work.
- (e) a logical organization of report to allow readers to grasp the contents readily. It is not always necessary that information be organized chronologically. You should put effort into thinking of the best way to present the information for the convenience of readers. There must be a logical sequence and link between chapters and within chapter.
- (f) a good standard of written English, proper format and layout of the report.

7. For more information on project report writing, it is suggested that you refer to the following:

Dorothy Cheung, Lai Phooi Ching, John S T Cheung, "What Every Engineering Student Should Know About Project Report Writing," 2nd Edition, Longman Singapore, 1992

8. You are required to submit a softcopy (a pdf file) of final report to your supervisor and examiner unless he/she prefers in hardcopy (double sided, ring bound) for which you will be told at least 3 days in advance.
9. After the oral presentation and if requested, you have to submit a softcopy (a pdf file) or hardcopy (double sided, ring bound or hard-cover bound) of the final/revised final report to your supervisor in his/her preference.
10. For hard-cover bound, the binding should be in dark blue with gold lettering. The use of NTU logo is recommended. [Click here for the SAMPLE COVER PAGE](#),

## APPENDIX B - ASSESSMENT CRITERIA

1. Interim Assessment (by supervisor only)
  - 1.1 Planning and Strategy
  - 1.2 Interim Report and Results
2. Main Assessment
  - 2.1 Project Final Report (by supervisor and examiner)
    - 2.1.1 presentation of the report
    - 2.1.2 theory, design and implementation
    - 2.1.3 Introduction, Indication of research through relevant literature review, Comparison with relevant work, Detailed discussion and substantiated conclusions
    - 2.1.4 results, quality of work and level of complexity
  - 2.2 Project Demonstration/ Interview (by examiner only)
  - 2.3 Final Assessment (by supervisor only)
    - 2.3.1 Initiative and Responsibility
    - 2.3.2 Ability and Independence
  - 2.4 Oral Presentation (by supervisor and examiner)
    - 2.4.1 Contents and Organisation
    - 2.4.2 Effective Presentation
    - 2.4.3 Accurate rebuttals to questions

## APPENDIX C – FYP SCHEDULE

Scheduled Task	* Tentative Schedule
During the 1 <sup>st</sup> semester of the project, Year 4	
Project plan/strategy	Week 6
During the 2 <sup>nd</sup> semester of the project, Year 4	
Interim report	Week 13
During the 2 <sup>nd</sup> semester of the project, Year 5	
Change of project title/summary	Until week 8
Appointment of examiners	Week 9 - week 11
Draft final report	End of week 10
† Final report to supervisor and examiner	End of week 12
Project Demo	Week 13
Announcement of oral presentation schedule	Week 13
Oral presentation	The week after exam
Full-Text report of your project (soft copy) to the library through Digital Repository @ NTU.	Within 1 month after the oral presentation
†† Final report if requested by supervisor	1 week after oral presentation

† Final report should be in softcopy (a pdf file) unless supervisor or examiner prefers in hardcopy (double sided, ring bound).

†† If requested, students have to submit a softcopy (a pdf file) or hardcopy (double sided, ring bound or hard-cover bound) of the final/revised final report to their supervisor in his/her preference.

**\* The exact schedule will be given by email and in the FYP website in due course.**