CHAPTER 1

COURSE SYNOPSIS MANP 2124 & MANP 2126

1.1 Introduction

The Project 1 (MANP2124) and Project 2 (MANP2126) is conducted in a form of the Industrial Attachment (IA) which is part of the academic module for ***Masters of Software Engineering*** organized by Advanced Informatics School (AIS), Universiti Teknologi Malaysia. Students are required to complete these courses for the eligibility of being awarded with ***Masters of Software Engineering***.

Details of this program as per shown below:

Course Code : MANP2124
Duration : 2 Months
Course Name : Project 1 ~ Industrial Attachment I (IA 1)
Credit Hours : 4

Course Code : MANP2126
Duration : 4 Months
Course Name : Project 2 ~ Industrial Attachment II (IA 2)
Credit Hours : 6

1.2 Objectives

a) To provide practical exposure in real working environment particularly in Software Engineering industry.

b) To orient the students to adopt software engineering theories and eventually improvised their skills and knowledge for future placement.

c) To nurture quality Software Engineering graduates well versed in SE technology, versatile, competitive, innovative and resourceful.

d) To provide guideline on what to expect in the pool of working environment

e) To improvised the existence projects and systems via knowledge sharing between the students and expertise from the industry.

1.3 Expectation upon program completion

a) Gain professional knowledge and experience in software engineering area

b) Ability to work independently and in team

c) Ability to meet datelines

d) Organization and communication skill

e) Ability to commit in any task assigned with full motivation.

f) Innovation and originality

g) Contribution to the attached company.

1.4 Scope Of Project

Our expectation to industry throughout this IA program is that the industry could provide sufficient scope of project relevant to software engineering activities (Analysis, Design, Implementation, Testing, Maintenance, Project

Management, Configuration Management and Software Quality Assurance). The scopes of the project need to be discussed along with Academic Mentor (AM), Industrial Mentor (IM) and students. In general, the scope of the project should be equivalent to master's level.

Who is Academic Mentor?

Academic Mentor (AM) will be decided by the MSE Program Coordinator and basically from UTM AIS group of lecturers.

Who is Industrial Mentor?

There will be an Industrial Mentor (IM) who will be selected by industrial project committee. Industrial Mentor is basically those who champion or lead the project and know all about the project background.

The Nature of Training

The nature of training is to assign the students in software development related task. This might include areas such as the system analysis and design phase, programming and development work, system specification and maintenance, setting up and design of software deployment program, software configuration management, quality assurance program etc. Students who are attached to an organization during the internship period are required to adhere to all rules and regulations of the company, which they are attached to, whilst adhering to the regulations and requirements of the university's.

This might include periodical reports or contacts that have been agreed between the university's (AIS) and the respective student. It is the responsibility of AIS and Industry to ensure that these students are given the appropriate training, work and given responsibility within the realm

mentioned above. The success of the IA program is dependent on the cooperation of students, training organization and the AM.

1.5 Activities

Below, are some major activities pertaining to the IA program:

- Students are required to discuss Master Project description with AM within the first 2 weeks of the Industrial Attachment. UTM AIS reserves right to rearrange new placement for students if project assigned does not meet the criteria required.
- The student is required to present a final report at the end of the training period to the Industry and the UTM AIS. The presentation schedule will be announced at least two weeks before the actual date.
- The IM will provide a final evaluation of the student with constructive criticism, including comments on academic strength/weaknesses of the student, work habits, and ability to focus. The standard evaluation form will be prepared by AIS.
- Student is also required to produce **2 reports** to illustrate all the activities during IA. One to be prepared at the end of IA1 (Project 1 Report) and the final report (Master Thesis Report) to be prepared at the end of remaining 4 month of attachment.
- Student is also required to produce a **log book** to illustrate their progress in the industry. The log book can be written either weekly basic or 2 weeks basic. The log book should be endorsed by the IM and the students need to submit the log book during the presentation of IA 1 and IA2 for evaluation.

1.6 Intellectual Property And Conflict Of Interest

Since the IA Program is carried out on the premises of a company outside of the university campus and without university's financial resources, all intellectual property generated during the IA period belongs to the company. An agreement will be negotiated among the student, the faculty advisor (AM) and Industry prior to the start of the IA so as to ascertain ownership of intellectual property. The agreement depends on the particular status and scope of each project as well as previous patent ownerships. Students are encouraged, but are not required to publish their work during the Industrial Training period in a peer-reviewed journal.

1.7 Assessment

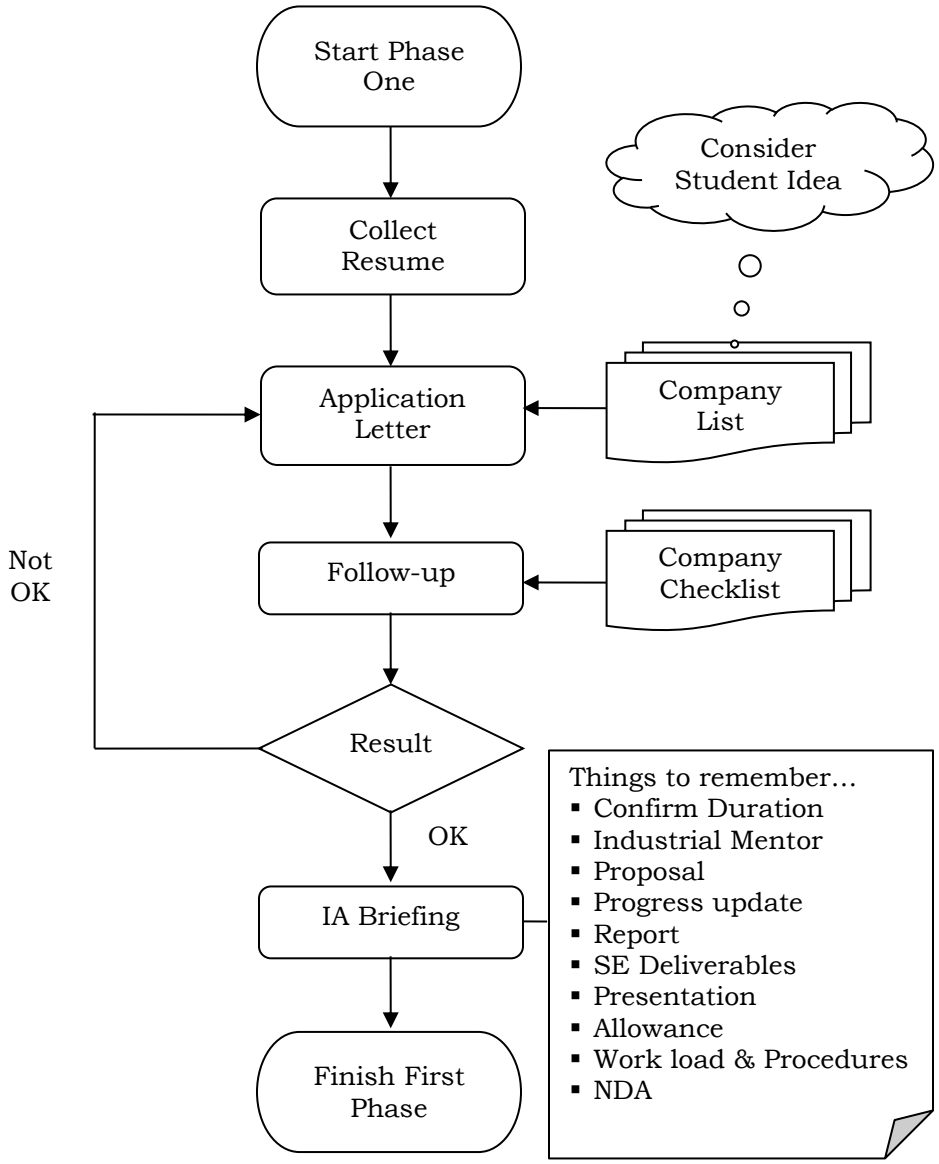
There are four categories of evaluation exercise in this program:

- Industry Supervision (evaluate by IM)
- Academic Supervision (evaluate by AM)
- Seminar / Presentation Evaluation
  (Evaluate by appointed examiner)
- Reports & Log Book evaluation
  (Evaluate by appointed examiner & AM)

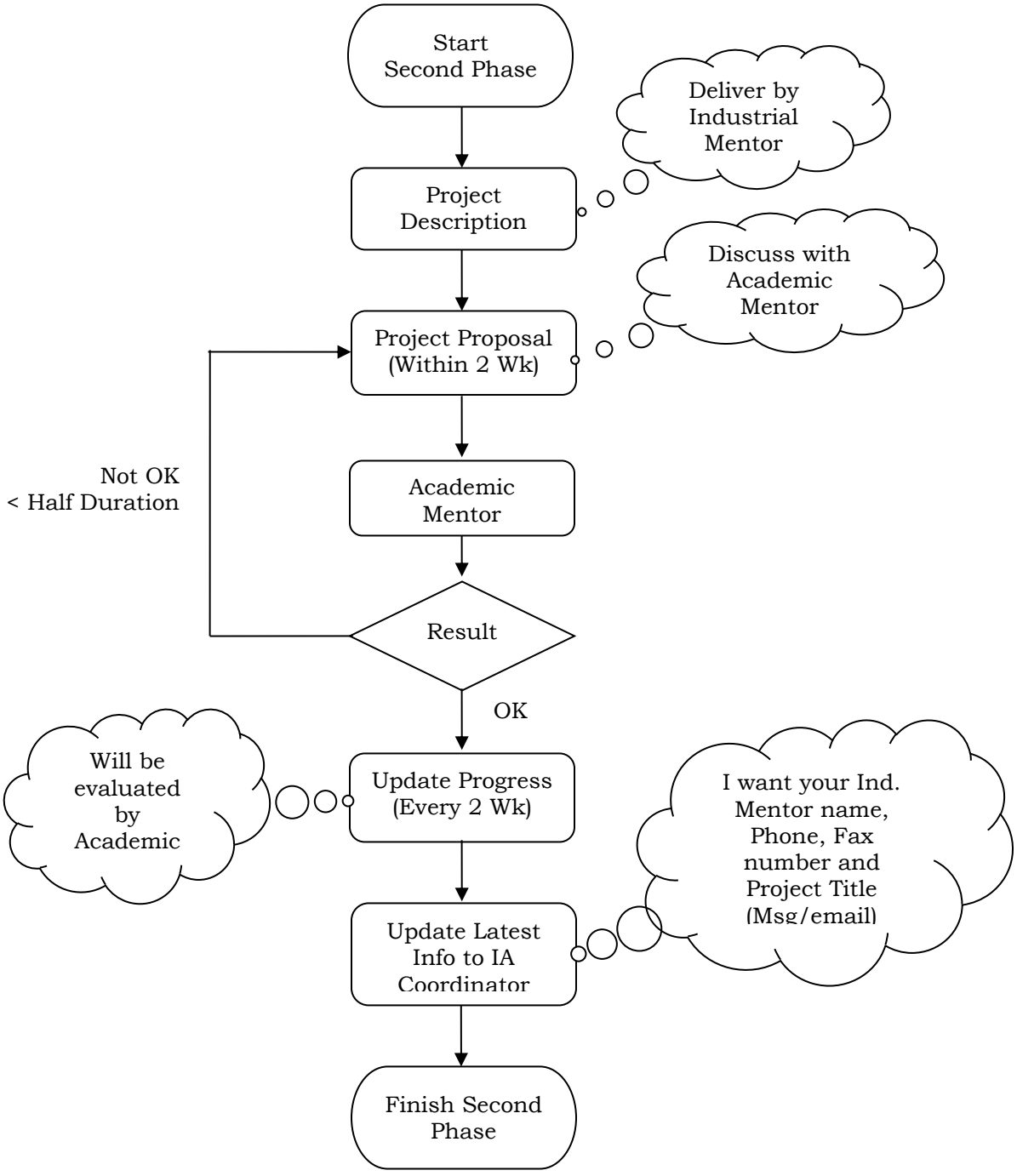
Attendance of IM or industry representative that leads or know about the project is invited for the seminar/presentation evaluation.

CHAPTER 2

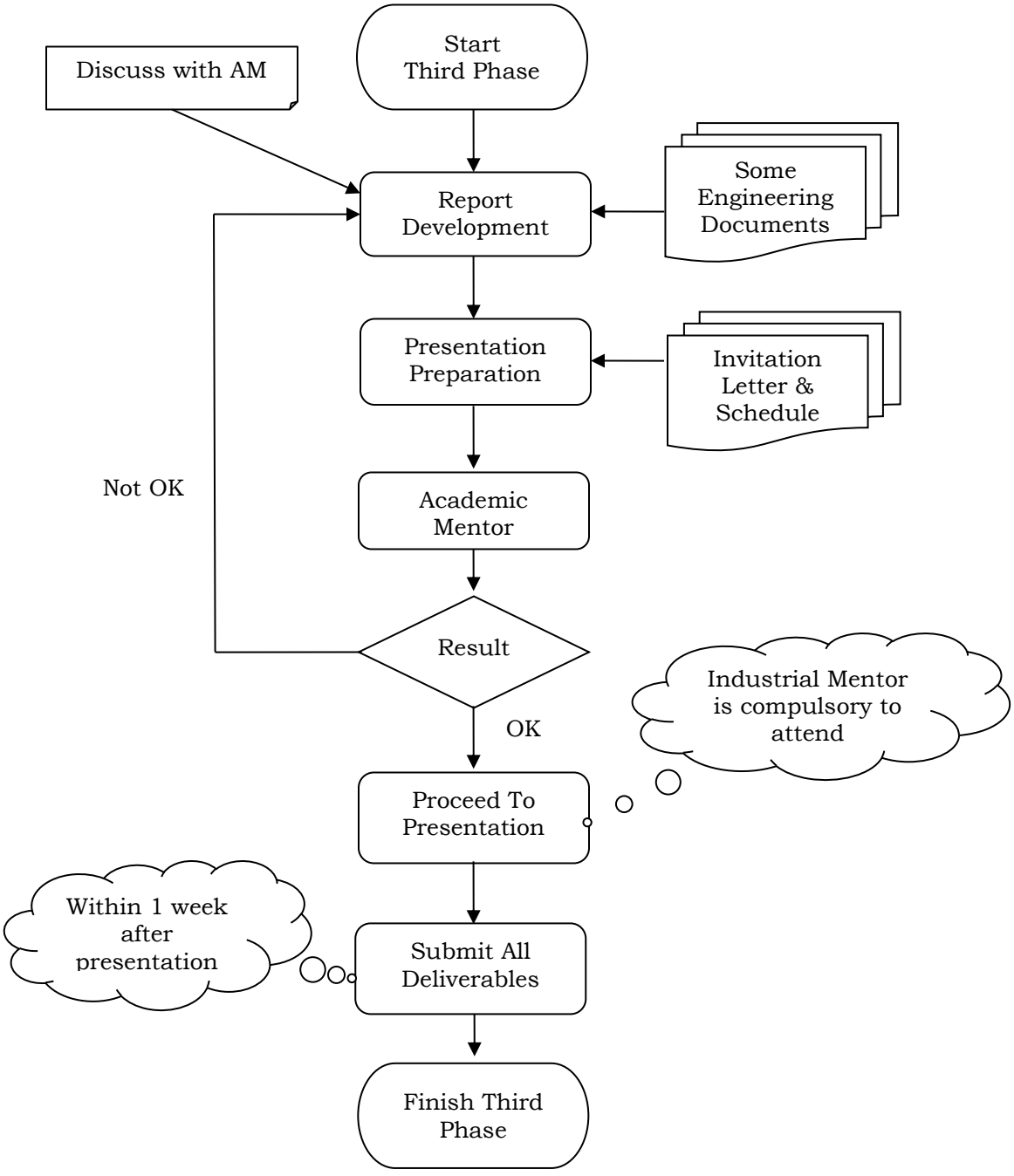
PROCESS FLOW



2.2 Second Phase – During Attachment



2.3 Third Phase – 2 Weeks Before End Of Attachment



CHAPTER 3

THE GENERAL RULES

3.1 Introduction

These rules should:

a) Apply to all students
b) Apply to students for IA1 & IA2 (Full Time)
c) Apply to students for IA1 & IA2 (Part Time)
d) Apply to mentor (academic & industrial)

3.2 The Rules

a) Involve in project that apply any phases of SDLC.
→ *Project involved must meet the SDLC requirement*

b) Project proposal must be discussed and submitted to academic mentor within ONE week of attachment.

c) Final reports need to be submitted at most ONE week after the presentation for Industrial Attachment I.

d) Final reports need to be submitted at most ONE month after the presentation for Industrial Attachment II.

e) Communicate with academic mentor at least twice per month (every two weeks).
→ *Students are required to provide informal industrial report to academic mentor every fortnightly*

f) Academic mentor MUST visit the students at least once during the period of attachment.

g) All cost of industrial training and producing report writing is under student's load and responsibility. Students cannot use the facilities at AIS.
→ *Students must bear all costs incurred during the attachment and not allowed to use any facilities (printing and photocopying) in AIS.*

h) During presentation day, students, academic mentor and industrial mentor (or company representative) must be around.
→ *Attendance is compulsory to all students, academic and industrial mentor during the presentation week.*

i) Academic and industrial mentor will involve in student evaluation (using standard marking form from AIS).
→*Students' will evaluated by both academic and industrial mentor by using standard evaluation form provided by AIS upon presentation*

j) Industrial mentor will get a formal invitation letter for presentation and students will get the softcopy through email.

k) For full time students, the place for attachment is negotiable with Industrial Training Coordinator. Students are welcome to propose a good place.

→ *Full time student may proposed their place of interest for training by supporting valid reason and project proposal.*

l) For part time students, the place for attachment is at the company that he/she currently working with.
→ *Part time student may continue undergo particular project at the company he/she are currently working for.*

m) Total working hours are 8 hours per day

n) Both Industrial Attachment I and II contain 4 and 6 credit hours respectively.

o) Students are bound to the company/organization rules and procedures during industrial attachment period.

p) Maternity leave need to be planned early and need a mutual understanding between AIS and Industries.

q) All the confidential matters from industries need to be declared in a `Confidential Items Form'

→ *All reports and presentations must be treated with the strictest confidential and must be declared in 'Confidential Items Form'*

r) Students cannot make a duplication of Thomson Guideline Methodology to be used in industries. Students only allowed making a reference and not more than that.

→ *Students are allowed to make an internal reference by using Thomson Guideline Methodology that is available at AIS. However, any duplication whatsoever is strictly prohibited.*

s) **Plagiarisms** of any works during industrial attachment are strictly prohibited.

These rules are subject to change.

CHAPTER 4

REPORT WRITING

4.1 Introduction

There are two reports need to be prepared, excluding the other deliverables (i.e. IRS, SRS, SDD) during the Industrial Attachment. Reports need to follow the UTM Theses formatting. These reports are:

(a) Project 1 Report

– *reporting the first two months of the attachment which consist the project proposal*

– *To be submitted after/ during Industrial Attachment 1*

(b) Project 2 Report

– *reporting the outcome of the project assigned during the attachment*

– *To be submitted after/ during Industrial Attachment 2*

4.2 Project 1 Report Guidelines

The main point from the report is to describe what have been achieved in the past 2 months and what to be done in the next four month. The proposed chapters as below is modifiable depend on the information of your project.

The contents are:

Front page cover

Table of contents

List of figures (if necessary)

List of tables (if necessary)

Appendix (i.e: Gant Chart)

Chapter 1: Project Overview

- Brief company background (type of business, structure, experience in software, SE technology etc).
- Background of project involved and importance to company.
- Project objective
- Project scope (in point form - Concise and precise).
- You can put project vision statement if any.
- Your main deliverables / products at the end of the project.
- Your Project Plan (Gant Chart) – For the next five month duration

Chapter 2: Literature Review

- Background study of existing system – discuss the pros and cons.
- Study on other existing systems that have the same purpose but using different approach (if any)
- Comparison study with any related system (in term of pros and cons, techniques, features, technology etc)

Chapter 3: Project Methodology

- Software development methodology (process, standard, guideline, technique, tool etc that will be used during the project).
- Problem solving methodology (focus on actual problem that are going to be solved in software development – i.e HR system, SMS system etc)

Chapter 4: Initial Findings

- Report and discuss any initial findings or progress that has been done in past 3 months

Chapter 5: Conclusion

- Share what you expect to get after 8 months with the industry (i.e learn new technology, new technique, tools, methods, standards etc as long related to software engineering).
- Your expectation or assumption of the project

4 . 3 Project 2 Industrial Report Guidelines

The report should STRICTLY follow the UTM Thesis format. The format is based on the "Panduan Menulis Thesis" prepared by Sekolah Pengajian Siswazah, Universiti Teknologi Malaysia. For updated version, please refer to http: www.sps.utm.my

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Thesis contents:

Blank paper
Approval Form (Complete the form before binding your thesis)
Supervisor's approval
Project Title Page
Student's admission
Dedication
Acknowledgement
Abstract (In English and Malay)
Table Of Contents
List Of Tables
List Of Figures
List Of Acronyms
List Of Appendix

The following chapters are required. You may add new chapters after discussing with your academic mentor and getting his/her approval. The sub-sections under each chapter are also subjected to necessity but it is recommended that you divide your chapters into sections and sub-sections.

Chapter 1: Project Overview

This chapter is concerned with similar concerns to the abstract and should provide an overview of the project with more detail. It sets the scene by describing the general area that the project work addresses and also identifies the need for the specific work that the student has carried out.

1.1 Introduction

This chapter should provide an overview of the project and must coincide with the title chosen.

1.2 Company Background

This chapter should describe the organizational analysis in terms of: structure, functions and core business

1.3. Background of the problem

This chapter should describe brief description of the existing problems as a justification to conduct the project/survey.

1.4 Project objectives

This chapter should describe the objective of the project that must be specific, measurable, achievable/attainable, realistic and time factor (SMART), such as:

(a) To study …
(b) To analyze and design …
(c) To develop …
(d) To formulate … (policy/framework)

1.5 Project Scopes

This should define the boundary of the project in terms of the core functionality system, data, software, hardware, platform, features, user or type of testing

1.6 Importance of the project

This chapter should describe on potential benefits to the organization; or new contribution to the field of study

1.7 Chapter summary

This chapter should present conclusions about the investigation and outline further work. The chapter should re-outline what has been done in the investigation, and been shown in the report. The lessons learned from the overall investigation should be presented with appropriate examples.

Chapter 2: Literature Review

This chapter is concerned with presenting a survey of background relevant to the area of investigation, leading to an evaluation of pre-existing implementations or designs and of candidate re-usable components. The selection of what to review should be guided by a clear understanding of the aims and requirements of the project. The source for the background is published material, in general, journal and conference papers, theses, research monographs, textbooks, web sites and product information. Remember to acknowledge all work that is quoted. See the ***UTM Thesis Manual*** for further details.

2.1 Introduction

This chapter should provide an overview of a literature review framework made by student.

2.(n) Chapter

This chapter should concern with various literatures related to the topic chosen:

a. It could be an extension of a certain research/study/project; or
b. Other studies such as similar applications, techniques existing in the current market, models, similar business process, features of similar system, similar studies, system development strategies on similar projects

Ensure to quote references to reviews made according to UTM Thesis Manual. All sources used should be cited in the text; if any words are copied directly then they should be placed between quotes and the source acknowledged.

2.(n+1) Chapter

This chapter should conclude what has been done in the investigation with he/she own analytical analysis of the reviews, as part of the justification for nay method that he/she would choose later, or as a direct benefit to continue their project; or on how the review helps the project.

2.(n+..) Chapter summary

The chapter should re-outline what has been done in the investigation, and been shown in the report.

- Background study of existing system – discuss the pros and cons.
- Study on other existing systems that have the same purpose but using different approach (if any)
- Study on problem solving techniques.
- Comparison study with any related system (in term of pros and cons, techniques, features, technology etc)

Chapter 3: Project Methodology

This chapter focuses on the research methodology used for the project, which are the project methodology or software development methodology.

3.1 Introduction

This chapter should describe brief description of the research methodology used for the project.

3.2 Project Methodology

This chapter should describe brief description of the methodology used for the software development, such as:

- Software development process (RUP, Waterfall, V-Shape and etc..)
- Software techniques (UML, SA-RT, TO-OD and etc..)
- Software tools (Word, Rational Rose, VB and etc..)
- Software documentation (DoD, MIL, IEEE and etc)

3.4 Chapter summary

The chapter should re-outline what project methodology been used, system development methodology been used and project schedule.

Chapter 4: Project Discussion

- Output analysis
- Other deliverables (document, manual, etc)
- Constraints (related to software and not to personal)
- Recommendations (for the future goods of software or product, company or any parties that involved in the project, etc).

Chapter 5: Conclusion

- Lesson learnt (especially in SE)
- Comments

Appendix (documents delivered, company details and any related material, etc)
Bibliography

Other info:

- Maximum 150 pages excluding appendix
- If you have a bundle of SE documents in appendix, it is suggested that you burn them into a CD, put it in a CD pocket and paste it at the hard cover at the back of your thesis.
- Get the approval from Academic Mentor before you bind your thesis.
- Follow all the standard of writing as mentioned in `Panduan Menulis Thesis'.
- Please submit your final draft at least one month before your last day of attachment (give enough time for Academic Mentor to read and comment).

Please note that, this chapter outlines the guideline for writing your report. The final content or chapter/sub-chapter headings are subject to the nature of your project and the agreement between you and your academic advisor.

CHAPTER 5

EVALUATIONS

5.1 Introduction

The industrial attachment evaluation is intended to measure the student's performance, work quality and access their generic skills development during period of attachment.

There are two major evaluations will be made throughout the IA and each consists of different components:

MANP2124 (Project 1 ~ Industrial Attachment I) Evaluation

(a) IA Report	40% (Academic Mentor) & 25% (2 Examiners)
(b) Seminar	10% (2 Examiners)
(c) Industrial Performance	20% (Industrial Mentor)
(d) Log Book	5% (Industrial or Academic Mentor)

MANP2126 (Project 2 ~ Industrial Attachment II) Evaluation

a. IA Report	35% (Academic Mentor) & 30% (2 Examiners)
b. Seminar	10% (2 Examiners)
c. Industrial Performance	20% (Industrial Mentor)
d. Log Book	5% (Industrial or Academic Mentor)

5.2 Industrial Attachment Report

The Industrial Attachment Report is refer to Project 1 and Project 2 report which should be prepared according to the **UTM's thesis format** – no more than 100 pages (excluding references and appendices). It must be written in English and should be submitted to the school one week before the presentation date. The content guideline of the report has been described in Chapter 5.

The report shall be assessed with the following criteria:

(a) Style and presentation
(b) Project Background
(c) Goal, Objective and Scope
(d) Literature Review/Related Work
(e) Methodology
(f) Current Progress/Initial Findings
(g) Discussion and Conclusion

5.3 Project Presentation

There will be two oral presentations throughout the Industrial Attachment. One will be done after/during IA1 and the other will be done after/during IA2.

The ***appointed examiners*** shall assess the Industrial attachment 1 (Project 1) oral presentation according to the following criteria:

(a) Style and presentation
(b) Precision and clarity
(c) Understanding of the project
(d) Confidence
(e) Q&A handling session
(f) Preparation

The ***appointed examiners*** shall assess the Industrial attachment 2 (Project 2) oral presentation according to the following criteria:

(a) Style and presentation
(b) Precision and clarity
(c) Understanding of the project
(d) Confidence
(e) Q&A handling session
(f) Result and achievement of objectives

5 . 4 Performance Evaluation by Academic Mentor

The ***academic supervisor*** shall assess the student performance according to the following criteria:

Job Performance:

(a) Knowledge about the job

(b) Quality of job performed

(c) Meeting the deadline

(d) Initiative

(e) Creativity and innovation

Attitude and Soft-Skill:

(f) Dedication and responsibilities

(g) Leadership and ability to decide

(h) Honesty and sincerity

5 . 5 Performance Evaluation by Industrial Mentor

The ***industrial supervisor*** shall assess student performance according to the following criteria:

Job Performance:

(a) Knowledge about the job
(b) Quality of job performed
(c) Meeting the deadline
(d) Initiative
(e) Creativity and innovation

Attitude and Soft-Skill:

(f) Dedication and responsibilities
(g) Communication
(h) Discipline
(i) Leadership and ability to decide
(j) Honesty and sincerity

5.6 Log Book

The ***academic supervisor*** shall assess the industrial attachment log book according to the following criteria:

(a) Orderliness of daily notes
(b) Verification by the Industrial Supervisor (biweekly)
(c) Description of work
(d) Learning experiences acquired