

**ACHIEVING ACADEMIC EXCELLENCE
THROUGH INCREASING PRODUCTIVITY
AND DECREASING COST**

The logo of Universiti Malaysia Pahang (UMP) is a shield-shaped emblem. It features a central white vertical stripe. The left side of the shield is light blue, and the right side is light purple. At the top, there is a yellow diamond shape with a white outline, and a white swoosh that curves around it. The letters 'UMP' are written in white across the bottom of the shield.

**REPORT SERIES II
(INITIATIVES BY INSTITUTE OF
POSTGRADUATE STUDIES 2016-2019,
INCLUDING iGOT & ATTRITION RATE)**

UNIVERSITI MALAYSIA PAHANG

NOVEMBER 2019

ACKNOWLEDGMENTS

Firstly, I would like to thank Universiti Malaysia Pahang (UMP) for the research grant RDU 160321 entitled “Achieving Academic Excellence through Increasing Productivity and Decreasing Cost” that has enabled me and my team to complete the second series of the report. The first Series report was completed in 2016. This second series report is a continuation of the first Series report and discusses briefly the initiatives taken by IPS from 2016 to 2019.

Thanks to YH Prof Dato’ Sri Daing Nasir Ibrahim, former Vice-Chancellor of UMP and YH Prof Dato’ Mashitah Mohd Yusoff, former Deputy Vice-Chancellor of Research and Innovation for approving the grant. Thanks also to Datin Sri Hajjah Fazia Ali, former Senior Deputy Registrar of Research and Innovation and the late YH Prof Dato’ Ishak Ismail, former Director of the Quality and Corporate Affairs Department for the advice given in shaping the research proposal and for supporting the initiatives taken by the Institute of Postgraduate Studies (IPS).

My thanks also goes to Cik Nurul Farhanah Mohamed Idres, the Research Assistant for the project who has diligently assisted in the completion of the project. The research would not have been possible without her assistance. My gratitude also to Pn Intan Hafizah Ishak for her assistance in editing the research report.

My thanks also to the co-researchers, Prof. Datin Mimi Sakinah, Pn Kalpana, En Shahrizai and the Postgraduate Association for their assistance in assistance to implement the initiatives that IPS have undertaken.

Lastly my thanks goes to all IPS staff, Deans, Deputy Deans of Research, Information Technology & Communication Centre, Centre of Instructional Resource and e-Learning and all parties who have assisted in giving suggestions in the various workshops of the initiatives that should be taken by IPS to uphold the postgraduate education agenda in UMP. They have also assisted in the implementation of the initiatives.

Best wishes,

Hasnah (Project Leader)

Prof Datin Mimi Sakinah

Pn Kalpana a/p Ramachandran

En Shahrizai bin Haji Sharif

Institute of Postgraduate Studies, 2019

EXECUTIVE SUMMARY

This report is the second series report of “Achieving Academic Excellence through Increasing Productivity and Decreasing Cost”. The first report was published in 2017.

It begins with an overview of the journey of development of the Institute of Postgraduate Studies (IPS), explaining its vision and mission, display the organizational structure of IPS to share the management of IPS. As IPS has been given the Key Performance Indicator (KPI) for iGOT (Graduation within the specified time) and Attrition rate by the university, thus it will be the main focus of discussion of the report.

Initiatives undertaken to achieve this KPI, which includes conducting the SIAP (*Sistem Intervensi Akademik Pelajar/* Postgraduate Student Academic Intervention System) also Competency Courses are also explained in this report.

Other initiatives discussed in the report, include a discussion of the postgraduate students’ and alumni satisfaction on the academic and non-academic matters of UMP.

The Postgraduate Association (PGA) which is instrumental to assist IPS in conducting its activities has also been discussed in the report.

Other issues discussed in the report include the offering of the Research Methodology course via MOOCs, workstation of postgraduate students and fees structure of Postgraduate programs as of January 2019.

It is hope that this report will act as a reference document for IPS to chart its future direction in assisting UMP to achieve its agenda in this more challenging era.

TABLE OF CONTENT

DECLARATION	
TITLE PAGE	
ACKNOWLEDGEMENTS	2
EXECUTIVE SUMMARY	2
TABLE OF CONTENT	4
LIST OF TABLES	9
LIST OF FIGURES	11
CHAPTER 1 INTRODUCTION	12
1.1 Introduction	12
1.2 Institute of Postgraduate Studies (IPS)	12
1.3 Organisational chart of IPS	14
1.4 Postgraduate Programs Offered by UMP	16
1.5 Overview of the Report	16
CHAPTER 2 IGOT & ATTRITION RATE	18
2.1 Introduction	18
2.2 Definition of iGOT and Attrition Rate	18
2.3 Duration for Key Performance Index iGOT	20
2.4 Number of Student Enrolment	21
2.4.1 Number of Enrolment for Master Student from the Year 2008 to 2018	21
2.4.2 Number of Enrolment for PHD Student from the Year 2008 to 2018	22
2.4.3 Number of Overall Enrolment of Postgraduate Intake	22
2.5 Status of Postgraduate Student	23
2.5.1 Status for Master of Science Student	23

2.5.2	Status for Master by Research Student	24
2.5.3	Status for Master by Coursework Student	25
2.5.4	Status for PhD Student	26
2.6	Number of Student iGOT	27
2.6.1	Number of Student iGOT for Master	27
2.6.2	Number of Student iGOT for PHD	28
2.6.3	Number of students iGOT by Faculty (Master)	29
2.6.4	Number of Student iGOT by Faculty (PhD)	30
2.7	Number of Student Attrition	31
2.7.1	Number of Student Attrition for Master	31
2.7.2	Number of Student Attrition for PHD	32
2.7.3	Number of student Attrition by Faculty (Master)	33
2.7.4	Number of Student Attrition by Faculty (PhD)	34
2.8	Summary	35
CHAPTER 3 EPAT SATISFACTION AND ALUMNI SURVEY		36
3.1	Introduction	36
3.2	EPAT Satisfaction Survey	36
3.2.1	Demographic Analysis	36
3.2.2	Descriptive Analysis	37
3.3	Alumni Survey / <i>egraduan</i> survey	50
3.3.1	Demographic Analysis	51
3.3.2	Descriptive Analysis	51
3.4	Summary	60
CHAPTER 4 IPS RESEARCH METHODOLOGY COURSE		62

4.1	Introduction	62
4.2	Postgraduate Research Methodology Course	63
4.3	8 Modules	64
4.4	Description for Each Module	66
4.4.1	Philosophy of Science and Ethics in Research	66
4.4.2	Research Overview	67
4.4.3	Literature Review	67
4.4.4	Methodology	68
4.4.5	Data Collection and Analysis	69
4.4.6	Scientific Writing	70
4.4.7	Preparation for Viva-Voce	71
4.4.8	Conceptual Paper	72
4.5	IPS Research Methodology MOOC Assessment Guideline	72
4.6	Process flow of Face to Face Interaction Class	73
4.7	Summary	78
 CHAPTER 5 POSTGRADUATE STUDENT ACADEMIC INTERVENTION SYSTEMS (SIAP)		79
5.1	Introduction	79
5.2	Objective of Programme	79
5.3	Outcome of Programme	80
5.3.2	Outcome for first SIAP programme conducted in 2016	81
5.4	Initiatives taken by IPS	85
5.5	Summary	85
 CHAPTER 6 UMP POSTGRADUATE ASSOCIATION		86
6.1	Introduction	86

6.2	Vision	87
6.3	Missions	87
6.4	Objectives	87
6.5	PGA Committee Member	87
6.5.1	Postgraduate Association 2016	87
6.5.2	Postgraduate Association 2017	89
6.5.3	Postgraduate Association 2018	90
6.6	Course Fees	91
6.7	Fees Structure	92
6.7.1	Fees by Research Programme	92
6.7.2	Fees by Mixed-Mode Programme	93
6.7.3	Fees by Coursework Programme	94
6.8	Financial Assistance	97
6.8.1	Local Students:	97
6.8.2	International Students:	98
6.8.3	Financial Assistance given by UMP	98
6.9	Chapter Summary	99
CHAPTER 7 POSTGRADUATE WORKSTATION		100
7.1	Introduction	100
7.2	Demographic of Respondents	100
7.3	Other Related Issues Regarding Dedicated Workstation	103
7.3.1	Twenty-Four Hours Study Room	103
7.3.2	Safety Related Issues	103
7.4	Findings from Open-ended and Interviews	104
7.5	Additional Comments and Findings related to IPS Matters	106

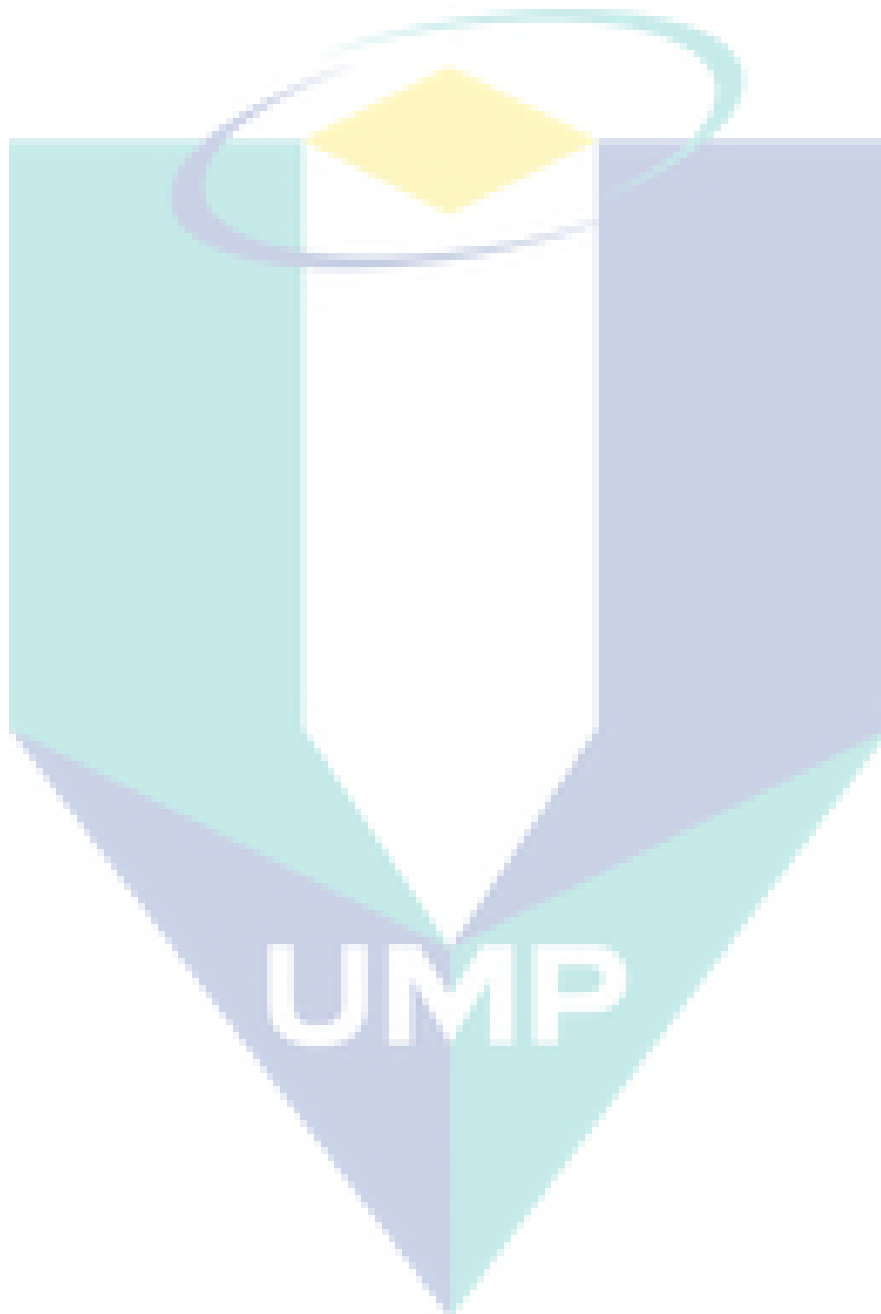
7.5.1	Rules and Guidelines	107
7.5.2	Courses and Academic Workshops	107
7.5.3	IPS Sub-department in Pekan	108
7.6	Summary	109
CHAPTER 8 COMPETENCY COURSES		110
8.1	Competency Courses	110
8.2	Objective of Competency Courses	110
8.3	Description of Competency Courses	111
	8.3.2 Course Synopsis of the Competency Courses are as follows:	111
8.4	Funding Sources	115
8.5	Competency Course Trust Fund	116
8.6	Majlis Institute of Postgraduate Studies (MIPS)	116
8.7	Summary	117
CHAPTER 9		118
CONCLUSION		118

UMP

LIST OF TABLES

Table 2.1 Duration for KPI iGOT & Attrition	20
Table 2.2 Duration of UMP Postgraduate Candidature	20
Table 2.3 Status for Master of Science Students	24
Table 2.4 Status for Student Master by Research	25
Table 2.5 Status for Student Master by Coursework	26
Table 2.6 Status for PhD Student	27
Table 2.7 Number of Student iGOT for Master	28
Table 2.8 Number of students iGOT for PHD	29
Table 2.9 Number of Student iGOT by Faculty for Master	30
Table 2.10 Number of Student iGOT by Faculty for PhD	31
Table 2.11 Number of Student Attrition for Master	32
Table 2.12 Number of Student Attrition for PHD	33
Table 2.13 Number of Student Attrition for Master Programme	34
Table 2.14 Number of Student Attrition for PhD Programme	35
Table 3.1 Demographic profile of respondents	37
Table 3.2 Descriptive Analysis of the factors	38
Table 3.3 Mean of Curricular	53
Table 4.1 Types of Modules	64
Table 4.2 Component in Quiz and Face to Face Interaction	72
Table 4.3 Procedure of face to face interaction class	74
Table 5.1 Number of Student Participated in SIAP Programme	82
Table 5.2 Number of Student done with the Proposal Defense Before and After participating in SIAP Programme)	82
Table 6.1 Fee Structure for Master (Engineering & Technology)	92
Table 6.2 Fee Structure for PHD (Engineering & Technology)	93
Table 6.3 Fee Structure for Master of Science (Industrial Mathematics)	93
Table 6.4 Fee Structure for Master of Science (Industrial Mathematics)	94
Table 6.5 Fee Structure for Master of Mechanical Engineering	94
Table 6.6 Fee Structure for Master of Information & Communication Technology	95
Table 6.7 Fee Structure for Master of Science (Process Plant Operation)	95
Table 6.8 Fee Structure for Master of Science in Mining with Mineral Technology	96
Table 6.9 Fee Structure for Master of Science in Technology-Integrated Language Studies	96
Table 6.10 Fee Structure for Master of Business Administration	97

Table 7.1 Demographics Profile of Respondents	101
Table 7.2 Workstation Satisfaction, Experience and Perception	101
Table 7.3 Comments and Recommendations from Postgraduate Students	106
Table 7.4 IPS Administration and Academic Affairs	107
Table 7.5 Request for IPS Sub-department in Pekan	108



LIST OF FIGURES

Figure 1.1 Key Performance Indicator (KPI) Book	13
Figure 1.2 Journey of Development of IPS	14
Figure 1.3 Organizational Chart of IPS	15
Figure 1.4 Main functions of the three units in IPS	15
Figure 1.5 Seven elements required of the research students to graduate	16
Figure 2.1 Calculation of Prescribe Time to Graduation	19
Figure 2.2 Calculation of iGOT and Attrition	19
Figure 2.3 Enrolment for Master Student	21
Figure 2.4 Enrolment for PhD Student	22
Figure 2.5 Enrolment for All Postgraduate Student	22
Figure 2.6 Status for Master of Science Students	23
Figure 2.7 Status for Student Master by Research	24
Figure 2.8 Status for Student Master by Coursework	25
Figure 2.9 Status for PhD Student	26
Figure 2.10 Number of Student iGOT for Master	27
Figure 2.11 Number of Student iGOT by Faculty for Master	29
Figure 2.12 Number of Student iGOT by Faculty for PhD	30
Figure 2.13 Number of Student Attrition for Master	31
Figure 2.14 Number of Student Attrition for PHD	32
Figure 2.15 Number of Student Attrition by Faculty for Master Programme	33
Figure 2.16 Number of Student Attrition for PhD Programme	34
Figure 4.1 Journey of development of the Research Methodology Course	62
Figure 4.2 Topic of 8 modules and the authors of the modules	66
Figure 4.3 The components of assessment of Research Methodology Course	73
Figure 6.1 Process Flow of Payment for using Maybank 2U (Online Banking)	92
Figure 8.1 Categories of Competency Courses to be Offered in the Future	115
Figure 8.2 Vision of offering the Competency Courses	116

CHAPTER 1

INTRODUCTION

1.1 Introduction

The report is a continuation of the first report entitled “Achieving Academic Excellence Through Increasing Productivity and Decreasing Cost” in 2016. The first series report discusses the outcome of a survey conducted on postgraduate students to examine their satisfaction with academic and non-academic matters. Amongst the issues examined include the students’ satisfaction as to the academic assistance given, English requirement, academic curriculum, student e-community portal, residential college, health centre, library, internet access, safety, cafeteria and visa application issues. They were also asked regarding their understanding of academic guidelines and also their views of iGOT and attrition rate.

This second report will discuss further on some of the initiatives that have been taken by IPS based on the findings of the survey conducted in 2016 as discussed in the first report.

Before the initiatives are discussed, an overview of IPS is provided to give a better understanding of its journey of development, vision and mission, objectives and who are the persons behind IPS.

1.2 Institute of Postgraduate Studies (IPS)

The Institute of Postgraduate Studies (IPS) supervises the postgraduate programs in Universiti Malaysia Pahang. This includes administering the admission of postgraduate students, appointment of supervisors, candidature reviews and provision of financial assistance.

The center is headed by a Dean who is assisted by a Deputy Dean and executives. Its vision is “To become a referral center in postgraduate academic management” and its mission is “To provide quality academic services and management through a conducive learning environment for postgraduate students”.

It also introduces the tagline and philosophy that acts as the foundation for its actions in 2016. Its tagline is “Providing Quality Service” and its philosophy is “Towards Continuous Improvement”

To achieve its vision and mission, IPS has published its annual targets through its Key Performance Indicator (KPI) Book as shown in **Error! Reference source not found..**



Figure 1.1 Key Performance Indicator (KPI) Book

Source: KPI Book

IPS first begun as an Office of Research & Graduate Studies in 2005 and then progresses to become a Centre for Graduate Studies in 2010 and became an Institute of Postgraduate Studies in 2012, with its first Dean being Professor Dr Abdullah Embong, Many have contributed to the development of IPS as can be seen in Figure 1.2.

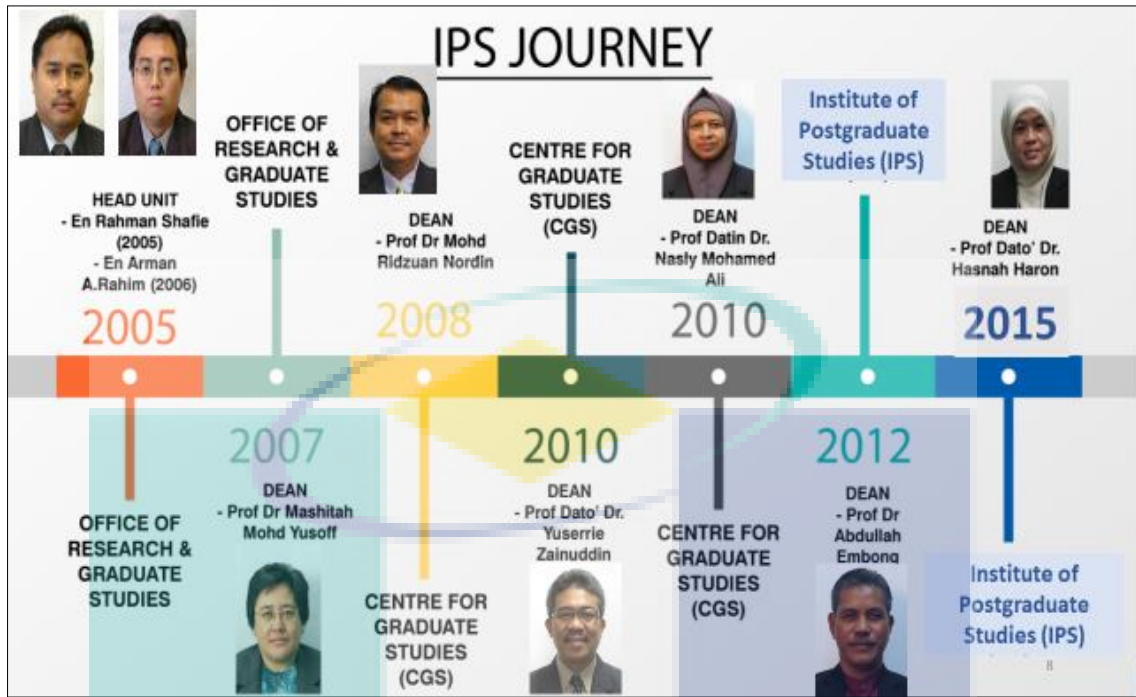


Figure 1.2 Journey of Development of IPS

1.3 Organisational chart of IPS

On average, IPS has approximately 17 staff to assist it in its operations. There are three units in IPS headed by an Executive. There has been changes of staff over the years, but as a sample, the organizational chart as of January 2018 as shown in Figure 1.3 is chosen to display the three units in existence in IPS and to assist a better understanding of the tasks that IPS conducts.

It has three units, namely the Academic Affairs & Graduation Unit, Administration, Finance & Viva-Voce Unit and Admission & Student Affairs Unit. Figure 1.4 shows the main functions of each unit.

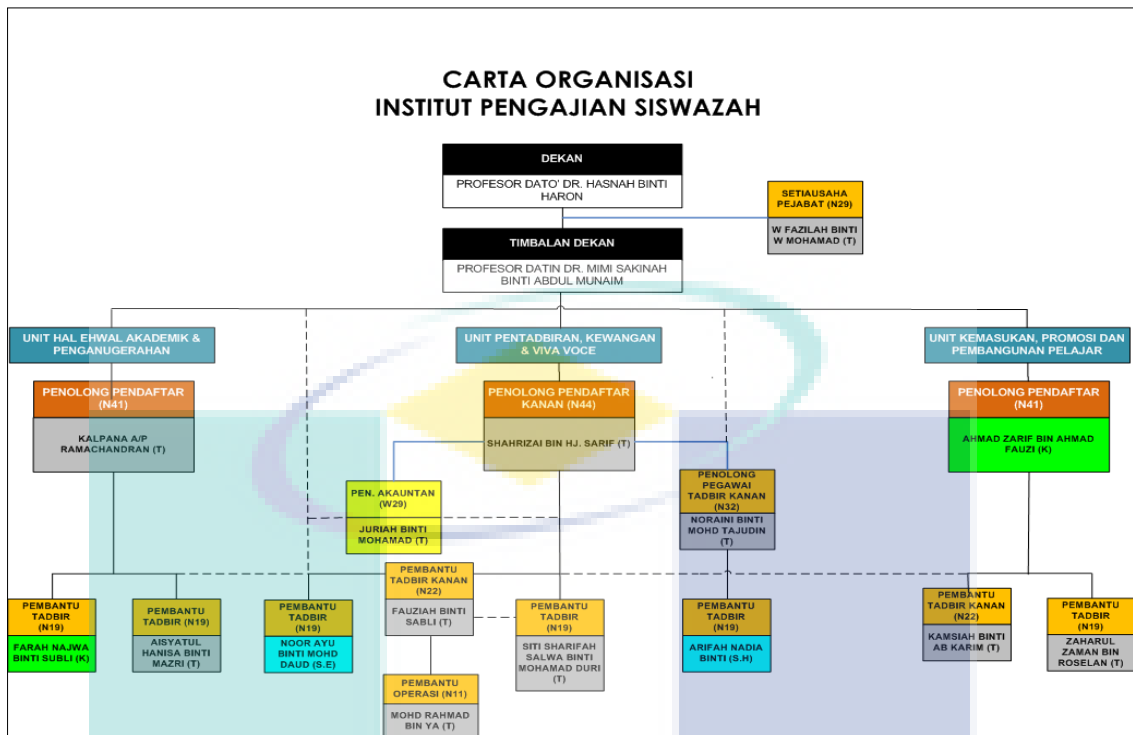


Figure 1.3 Organizational Chart of IPS

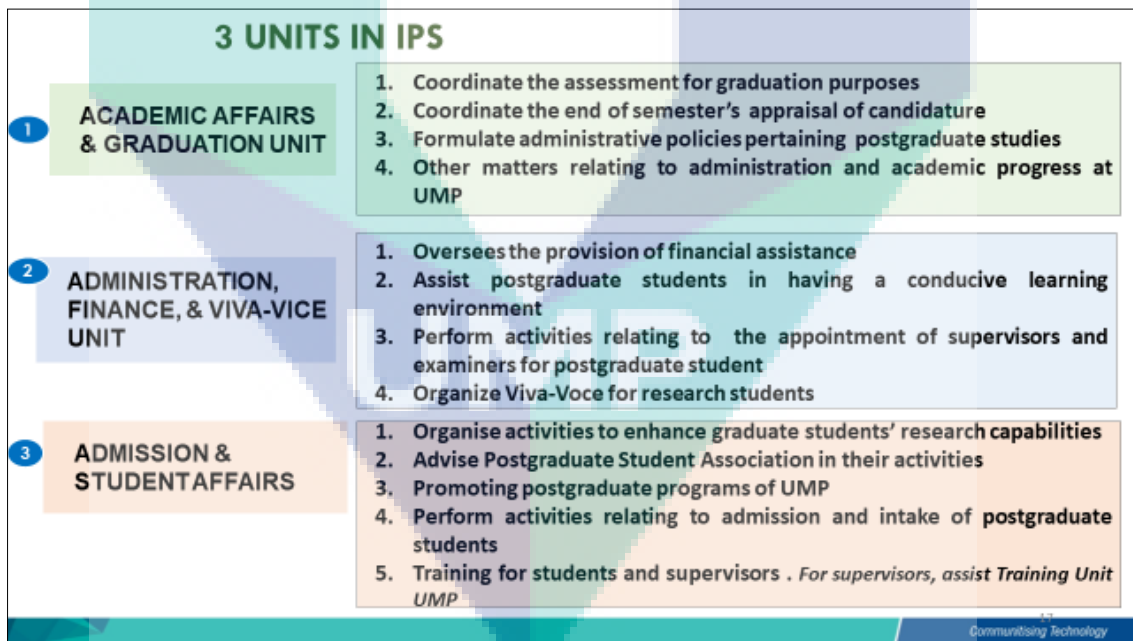


Figure 1.4 Main functions of the three units in IPS

1.4 Postgraduate Programs Offered by UMP

UMP offers postgraduate coursework and mixed mode programs, in addition to masters and PhD by research. Since coursework and mixed mode programs are offered by faculties, much of IPS efforts are in developing and improving the research mode programs. Figure 1.5 shows the seven elements of the requirement of the research students to graduate. Each of the process is monitored closely by IPS to ensure that students produce quality thesis yet will be able to graduate on time.

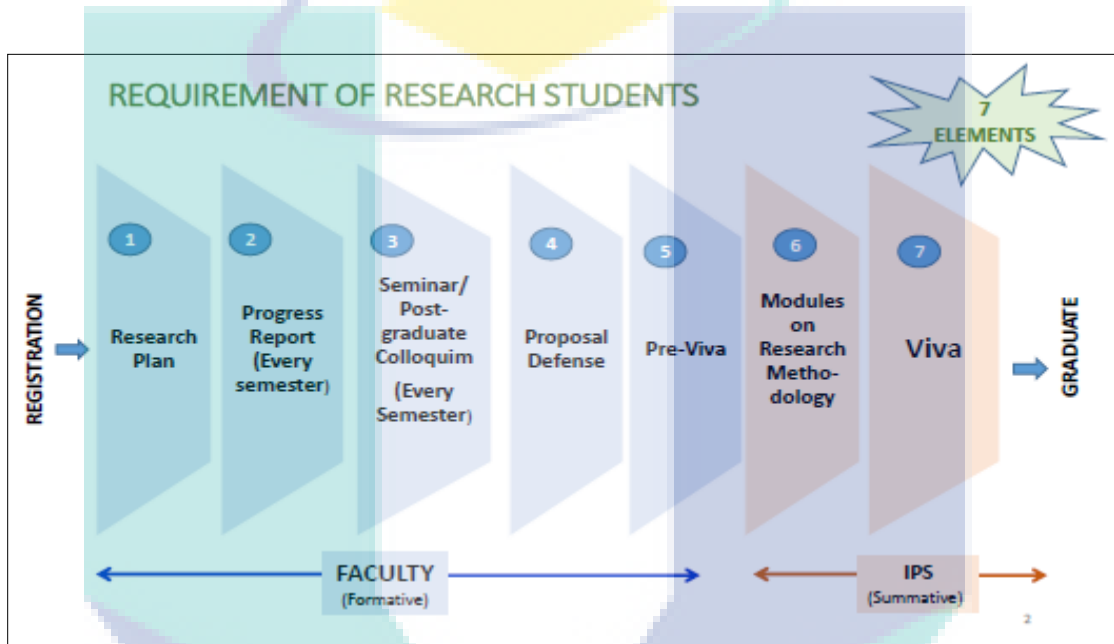


Figure 1.5 Seven elements required of the research students to graduate

1.5 Overview of the Report

This chapter has given an overview of the journey of development of IPS and its function.

Chapter 2 will discuss iGOT and attrition rate, which is the main focus of this report.

Chapter 3 will discuss the findings of EPAT Satisfaction survey as well as Alumni Survey. The survey is to assess the postgraduate students' satisfaction towards the academic and non-academic matter in UMP. One of the questions asked in the EPAT survey is on postgraduate students' satisfaction with supervision.

Chapter 4 will discuss IPS research methodology which is offered through massive open online course (MOOC). IPS research methodology is one of the academic initiatives to increase iGOT and to reduce the number of student attrition.

Chapter 5 will discuss the Postgraduate Student Academic Intervention System (SIAP) which is to assist postgraduate coursework students with a CPA below 3 and research students who received unsatisfactory progress in their research or who have not defended their proposal in the recommended period of study.

Chapter 6 will discuss the setting up of the postgraduate association (PGA) and will discuss the fee structure also funds available for students to apply.

Chapter 7 will discuss the workstation facilities available in IPS

Chapter 8 will discuss the offering of Postgraduate Competency Courses to the postgraduate students, and

Chapter 9 will conclude the report.

The logo for UIMP (Universiti Malaysia Perlis) is a large, downward-pointing arrow shape. It is composed of four triangular sections meeting at a central point. The top-left and bottom-right sections are light blue, while the top-right and bottom-left sections are a slightly darker blue. The letters 'UIMP' are written in a bold, white, sans-serif font across the center of the arrow.

UIMP

CHAPTER 2

iGOT & ATTRITION RATE

2.1 Introduction

In report series 1 “Achieving Academic Excellence Through Increasing Productivity and Decreasing Cost” (Hasnah et. al, 2016), GOT and attrition was rated only based on secondary data that showed the reason of the attrition rate was mostly contributed by students whom were quitting from their programme. This report will give a more in-depth explanation of iGOT and attrition rate. It will also show the number of postgraduate students’ enrolment, number of students who are able to graduate on time, as well as the number of students who have not completed their studies

2.2 Definition of iGOT and Attrition Rate

iGOT is defined as a percentage of full-time students from certain intake groups who successfully complete their studies on or before the specified year of graduation. iGoT measures the number of students from an intake cohort that graduates within the expected duration of their program, such as four years for a bachelor’s degree. In this sense, iGoT measures one type of “output” of the university and the number of graduates produced. The university becomes more productive as the number of graduates produced increases, by holding costs steady. The need to measure iGoT is tied to a particular intake, instead of taking the total number of graduates who are able to graduate on time without considering whether they are form the same “intake” or “cohort”.

Even though students who take longer to graduate still receives a degree, that degree took more time than intended, and therefore costs more for the university. In some instances, students will reasonably need more time to complete a program of study but in other instances, delays could have been avoided to improve productivity. Figure 2.1 shows the calculation of prescribe time to graduation.

While attrition is defined as a percentage of full-time students from certain intake groups whom withdraw, deceased, quit or is terminated during the specified period of study. Figure 2.2 shows the calculation of iGOT and the attrition rate

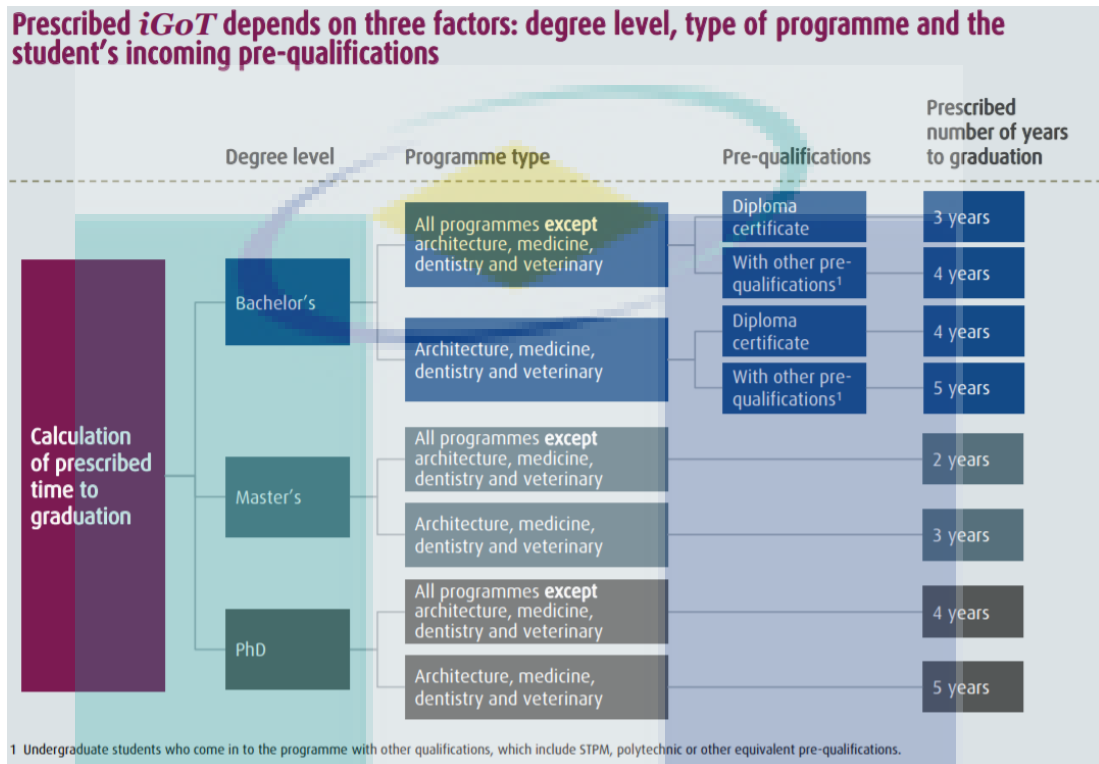


Figure 2.1 Calculation of Prescribe Time to Graduation

Source: UniTP Silver Book, 2016

$$\frac{\text{Number of Student Enrolled in Intake Year, n, Number of Student Graduating in Prescribed Graduation Year}}{\text{Number of Student Enrolled in Intake Year}} \times 100$$

$$\frac{\text{Number of Student Enrolled in Intake Year, n, Number of Student Attrition Prescribed Graduation Year}}{\text{Number of Student Enrolled in Intake Year}} \times 100$$

Figure 2.2 Calculation of iGOT and Attrition

The benchmark level for the Institute of Postgraduate students to achieve for attrition and iGOT determined by the University are as follows:

- i. Master students- not exceeding 13% for attrition rate and a minimum of 50% for iGOT.

- ii. Phd students –not exceeding 19% for attrition rate and a minimum of 48% for iGOT.

2.3 Duration for Key Performance Index iGOT

Table 2.1 Duration for KPI iGOT & Attrition

Level	Programme	Length of Study	iGOT 2015		iGOT 2016		iGOT 2017	
			Intake	Year of Graduation	Intake	Year of Graduation	Intake	Year of Graduation
Master	Architecture; Medical, Dentistry, Vet	3 years	2011	2012-2014	2012	2013-2015	2013	2014-2016
	Others	2 years		2012-2013		2013-2014		2014-2015
Ph.D	Architecture; Medical, Dentistry, Vet	5 years	2009	2010-2014	2010	2011-2015	2011	2012-2016
	Others	4 years		2010-2013		2011-2014		2012-2015

Table 2.1 shows the duration of the study in order to achieve the KPI for iGOT. The length of study is divided into 2 programmes which are 3 years for Master student and 5 years for PHD student whom are taking Architecture, Medical, Dentistry and Vet Programme. Other programmes which are considered as ‘others’, have shorter length of study whereby, for a Master student it is 2 years while for a PHD student it is 4 years.

Table 2.2 Duration of UMP Postgraduate Candidature

Degree Programme	Type of Candidature	Period of Candidature					
		Minimum (Months)	Year (s)	Semester	Maximum	Year (s)	Semester
Master’s Degree	Full-Time	12	1	2	36	3	6
	Part-time	24	2	4	60	5	10
PHD Degree	Full-Time	24	2	4	72	6	12
	Part-Time	36	3	6	96	8	16

Table 2.2 shows the duration of study for candidatures that have been accepted to pursue their postgraduate studies in UMP. Applicant can choose to be in part-time or

full-time mode. Basically, for the full-time mode the master students should graduate within 3 years at least so that they can be classified as Graduate On Time (GOT) student. While for PHD students the duration is within 6 years at least to achieve GOT. If the student cannot graduate within the period given, they are not considered as graduate on time.

2.4 Number of Student Enrolment

2.4.1 Number of Enrolment for Master Student from the Year 2008 to 2018

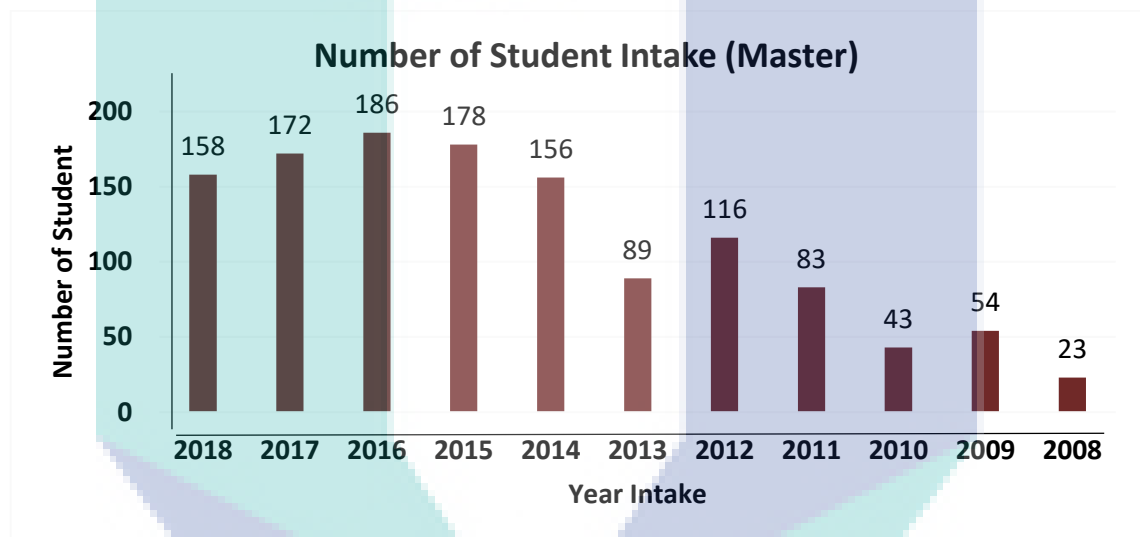


Figure 2.3 Enrolment for Master Student

UMP

2.4.2 Number of Enrolment for PHD Student from the Year 2008 to 2018

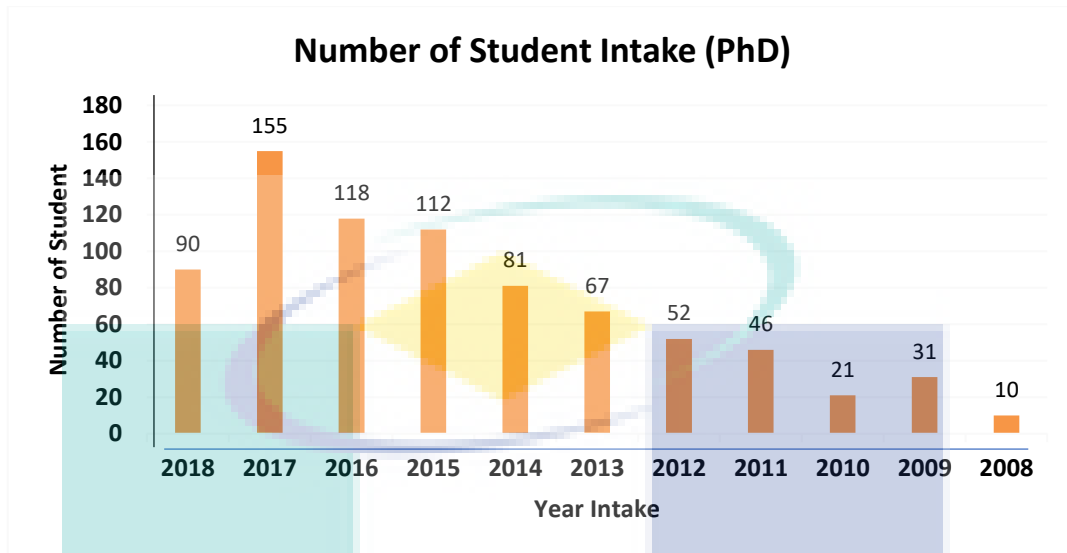


Figure 2.4 Enrolment for PhD Student

Figure 2.4 shows the number of enrolments for PhD student from the year 2008 to 2018. The number of enrolments showed a consistent increment as compared to the master student enrolment (Figure 2.3) from the year 2010 to 2017. For PHD student enrolment, it was 21 students in the year 2010 to 155 students in the year 2017. However, the numbers slightly decreased in the year 2018 whereby only 90 PhD students enrolled in UMP.

2.4.3 Number of Overall Enrolment of Postgraduate Intake

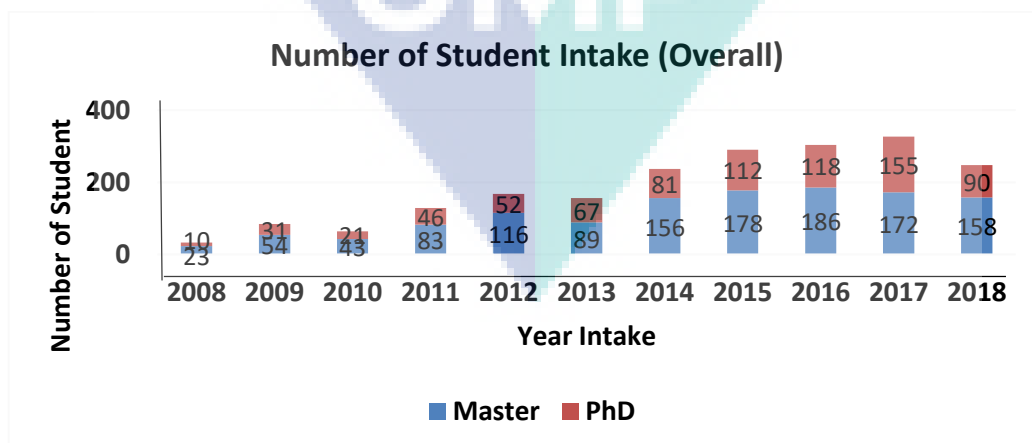


Figure 2.5 Enrolment for All Postgraduate Student

As shown in Figure 2.5, it is the number of overall postgraduate student's enrollment from the year 2008 to 2018. The overall number of enrollments increased from the year 2013 to 2017. However, in the year 2018 the overall number decreased to 248 students. It can also be seen that the overall increment of postgraduate students are majority from the Master program.

2.5 Status of Postgraduate Student

2.5.1 Status for Master of Science Student

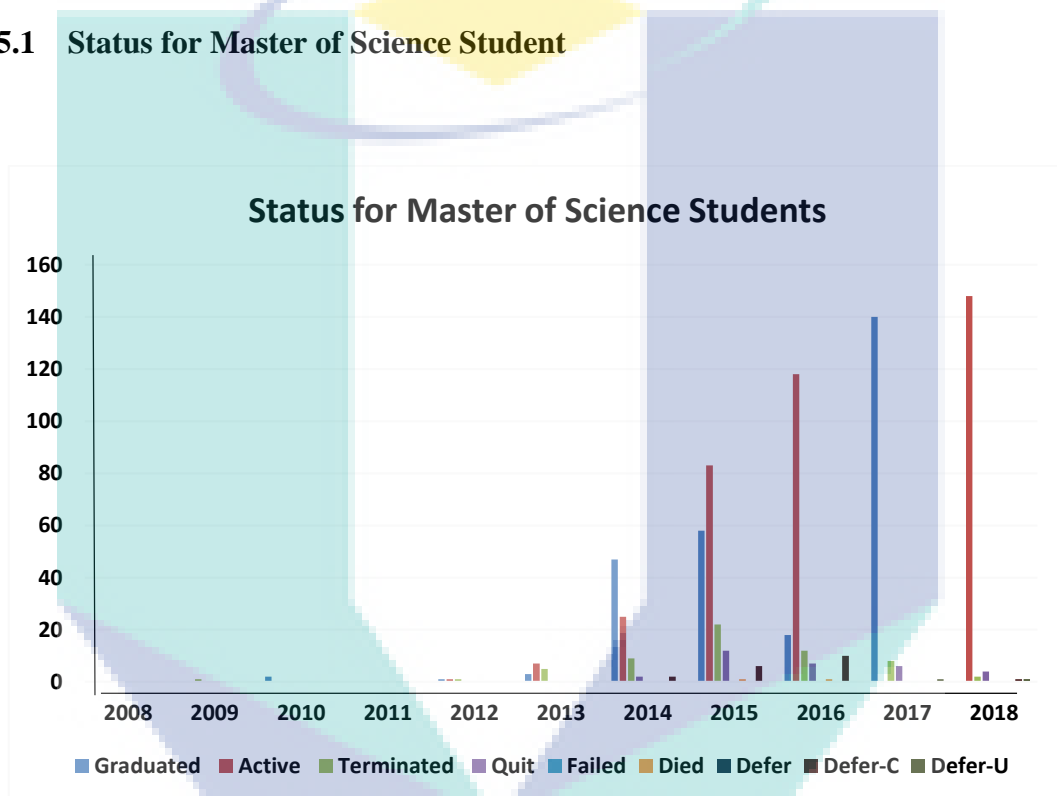


Figure 2.6 Status for Master of Science Students

Table 2.3 Status for Master of Science Students

Year Intake	Status		Attrition							Total
	Graduated	Active	Terminated	Quit	Failed	Died	Defer	Defer-C	Defer-U	
2008	-	-	-	-	-	-	-	-	-	0
2009	-	-	1	-	-	-	-	-	-	1
2010	2	-	-	-	-	-	-	-	-	2
2011	-	-	-	-	-	-	-	-	-	0
2012	1	1	1	-	-	-	-	-	-	3
2013	3	7	5	-	-	-	-	-	-	15
2014	47	25	9	2	-	-	-	2	-	85
2015	58	83	22	12	-	1	-	6	-	182
2016	18	118	12	7	-	1	-	10	-	166
2017	140	-	8	6	-	-	-	-	1	155
2018	-	148	2	4	-	-	-	1	1	156

Figure 2.6 and Table 2.3 shows the status for Master of Science student. The highest number of graduated students is 140 students in the year 2017. However, the highest number of student attrition is 41 students in the year 2015 and they consisted of 22 students had been terminated, 12 students quit from their studies, 1 student died and 6 out of the total students deferred their semester. As of December 2018, a total of 148 students are in active status.

2.5.2 Status for Master by Research Student

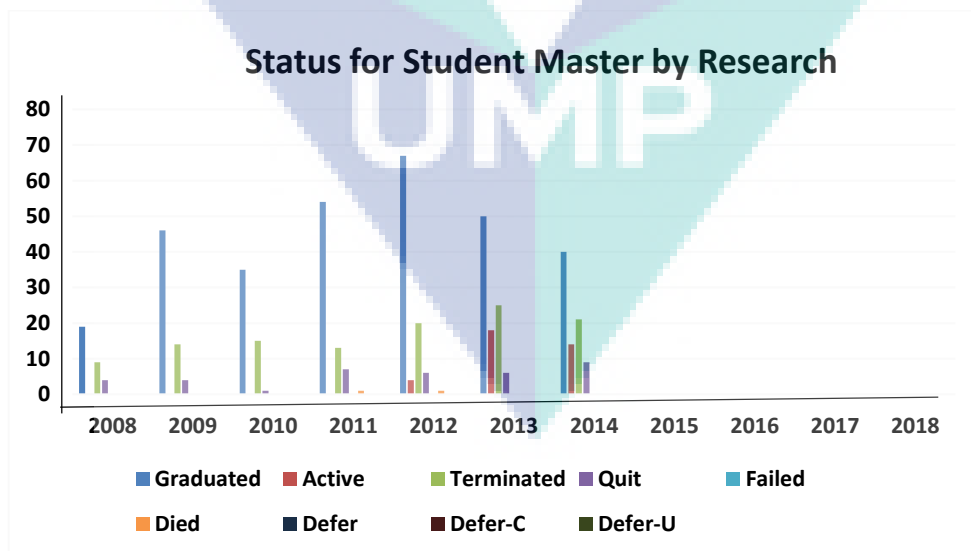


Figure 2.7 Status for Student Master by Research

Table 2.4 Status for Student Master by Research

Year Intake	Status		Attrition							Total
	Graduated	Active	Terminated	Quit	Failed	Died	Defer	Defer-C	Defer-U	
2008	19	-	9	4	-	-	-	-	-	32
2009	46	-	14	4	-	-	-	-	-	64
2010	35	-	15	1	-	-	-	-	-	51
2011	54	-	13	7	-	1	-	-	-	75
2012	67	4	20	6	-	1	-	-	-	98
2013	50	18	25	6	-	-	-	-	-	99
2014	40	14	21	9	-	-	-	-	-	84
2015	-	-	-	-	-	-	-	-	-	0
2016	-	-	-	-	-	-	-	-	-	0
2017	-	-	-	-	-	-	-	-	-	0
2018	-	-	-	-	-	-	-	-	-	0

Figure 2.7 and Table 2.4 shows the status for student Master by Research. The highest number of graduated students is 67 students in the year 2012. However, the highest number of student attrition is 31 students in the year 2013 and they were 25 students who had been terminated and 6 students quit from their studies.

2.5.3 Status for Master by Coursework Student

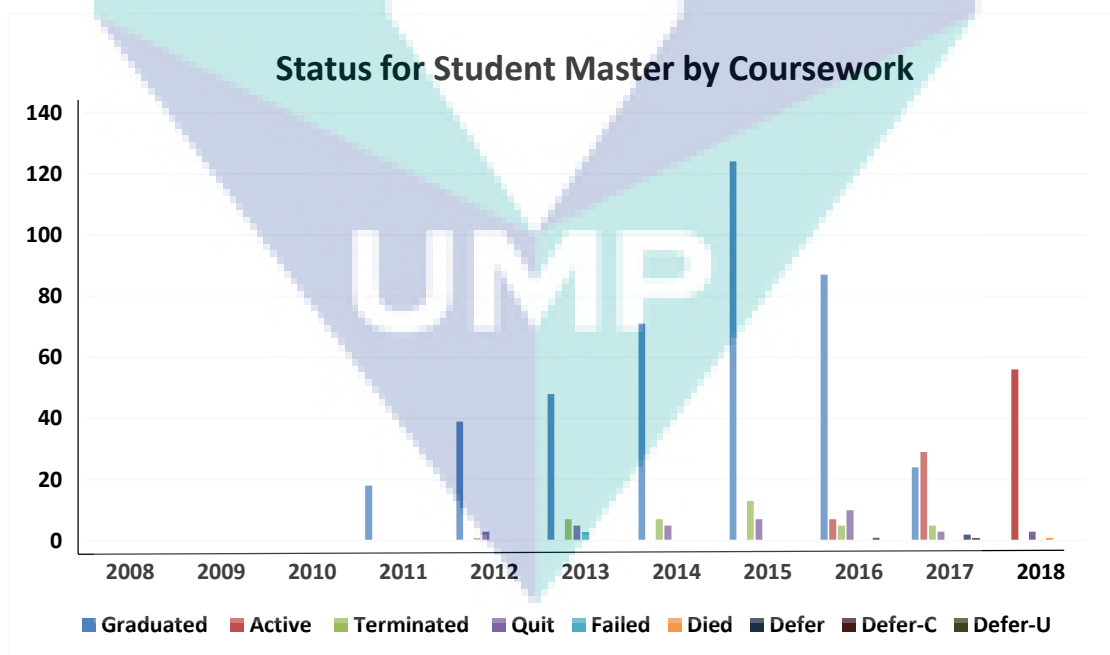


Figure 2.8 Status for Student Master by Coursework

Table 2.5 Status for Student Master by Coursework

Status Year Intake	Graduated	Active	Attrition							Total
			Terminated	Quit	Failed	Died	Defer	Defer-C	Defer-U	
2008	-	-	-	-	-	-	-	-	-	0
2009	-	-	-	-	-	-	-	-	-	0
2010	-	-	-	-	-	-	-	-	-	0
2011	18	-	-	-	-	-	-	-	-	18
2012	39	-	1	3	-	-	-	-	-	43
2013	48	-	7	5	3	-	-	-	-	63
2014	71	-	7	5	-	-	-	-	-	83
2015	124	-	13	7	-	-	-	-	-	144
2016	87	7	5	10	-	-	1	-	-	110
2017	24	29	5	3	-	-	2	1	-	64
2018	-	56	-	3	-	-	1	-	-	60

Figure 2.8 and Table 2.5 shows the status for student Master by Coursework. The highest number of graduated students is 124 students in the year 2015. However, the highest number of student attrition is 20 students which was also in year the 2015 and they were 13 students who had been terminated and 7 students quit from their studies.

2.5.4 Status for PhD Student

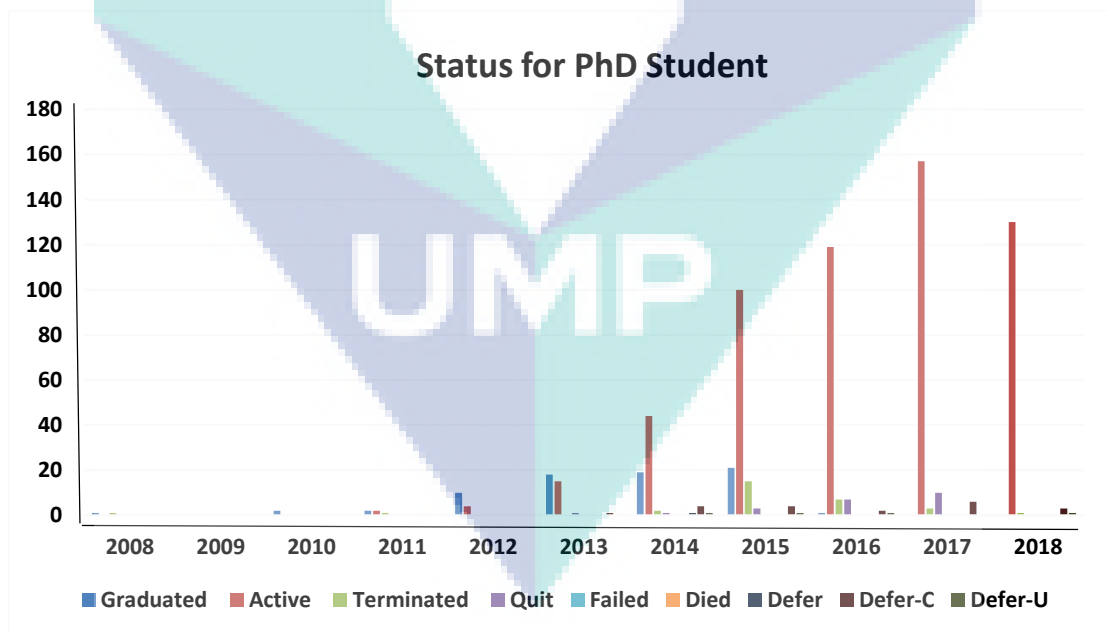


Figure 2.9 Status for PhD Student

Table 2.6 Status for PhD Student

Status Year Intake	Graduated	Active	Attrition							Total
			Terminated	Quit	Failed	Died	Defer	Defer-C	Defer-U	
2008	1	-	1	-	-	-	-	-	-	2
2009	-	-	-	-	-	-	-	-	-	0
2010	2	-	-	-	-	-	-	-	-	2
2011	2	2	1	-	-	-	-	-	-	5
2012	10	4	-	-	-	-	-	-	-	14
2013	18	15	-	1	-	-	-	1	-	35
2014	19	44	2	1	-	-	1	4	1	72
2015	21	100	15	3	-	-	-	4	1	144
2016	1	119	7	7	-	-	-	2	1	137
2017	-	157	3	10	-	-	-	6	-	176
2018	-	130	1	-	-	-	-	3	1	135

Figure 2.9 and Table 2.6 shows the status for PhD students. The highest number of graduated students is 21 students in the year 2015. However, the highest number of student attrition is 23 in the same year (2015) and they were 15 students who been terminated, 3 students quit from their studies and 5 out of the total students deferred their semester. As of December 2018, there were 130 students in active status.

2.6 Number of Student iGOT

2.6.1 Number of Student iGOT for Master

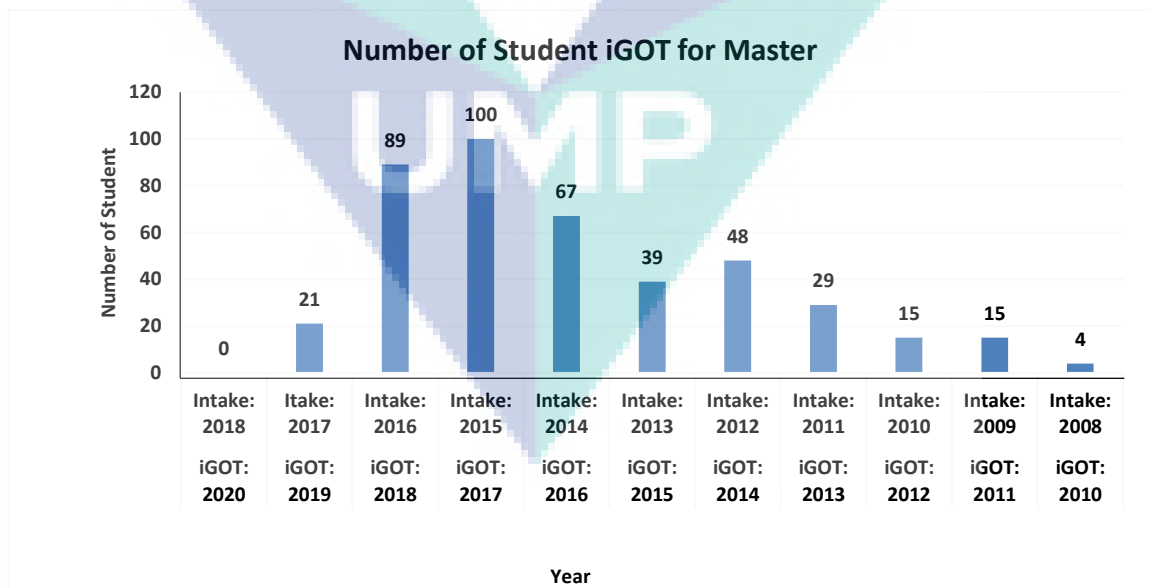


Figure 2.10 Number of Student iGOT for Master

Table 2.7 Number of Student iGOT for Master

Year Intake	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Year iGOT	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Number of Student Intake	158	172	186	178	156	89	116	83	43	54	23
Number of Student iGOT	0	21	89	100	67	39	48	29	15	15	4
Percentage of Student iGOT (%)	0	12.21	47.85	56.18	42.95	43.82	18.1	34.94	34.88	27.78	17.39

Figure 2.10 and Table 2.7 shows the number of iGOT for master student from the year 2008 to 2018 intake. The highest number of student iGOT is during the 2015 intake and the iGOT year is 2017 which was a total of 100 students (56.18%), while the least number of student iGOT is during the 2008 intake and there were only 4 students (17.39%) in the 2010 iGOT year. Thus far, there is still zero number of student whom iGOT for the 2018 intake.

2.6.2 Number of Student iGOT for PHD

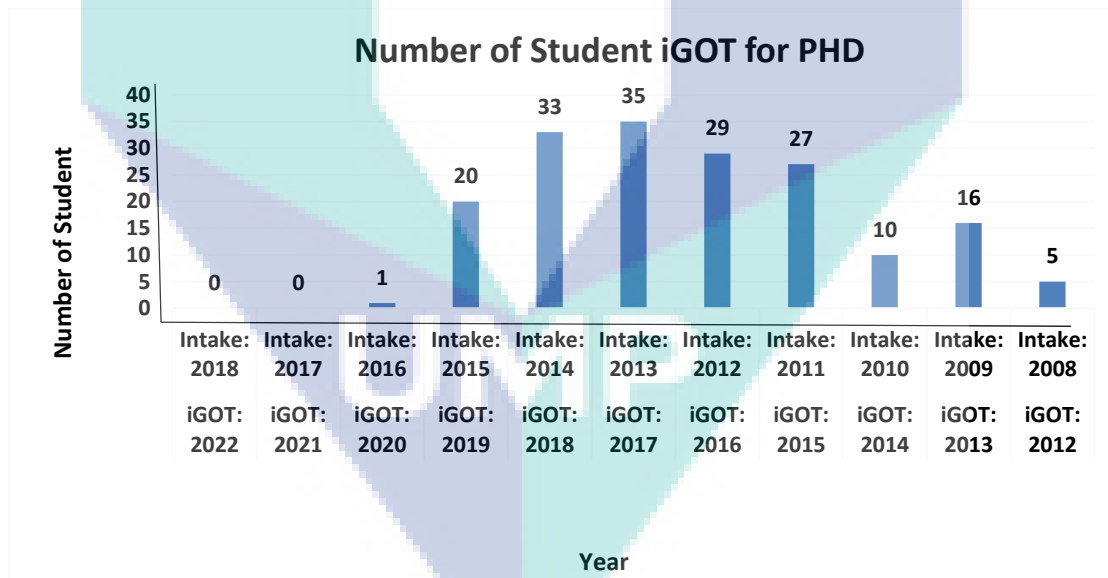


Figure 2.11 Number of student iGOT for PHD

Table 2.8 Number of students iGOT for PHD

Year iGOT	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Year Intake	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Number of Student Intake	90	155	118	112	81	67	52	46	21	31	10
Number of Student iGOT	0	0	1	20	33	35	29	27	10	16	5
Percentage of Student iGOT (%)	0	0	0.85	17.86	40.74	52.24	55.77	58.7	42.86	51.61	50

Figure 2.11 and Table 2.8 shows the number of iGOT for PHD student from the 2008 to 2018 intake. The result showed the increment of iGOT from the 2008 intake to the 2013 intake whereby, from 5 students (50.00%) to 35 students (52.24%) respectively. For the 2014 intake and onwards, the number of PHD students whom iGOT slightly dropped.

2.6.3 Number of students iGOT by Faculty (Master)

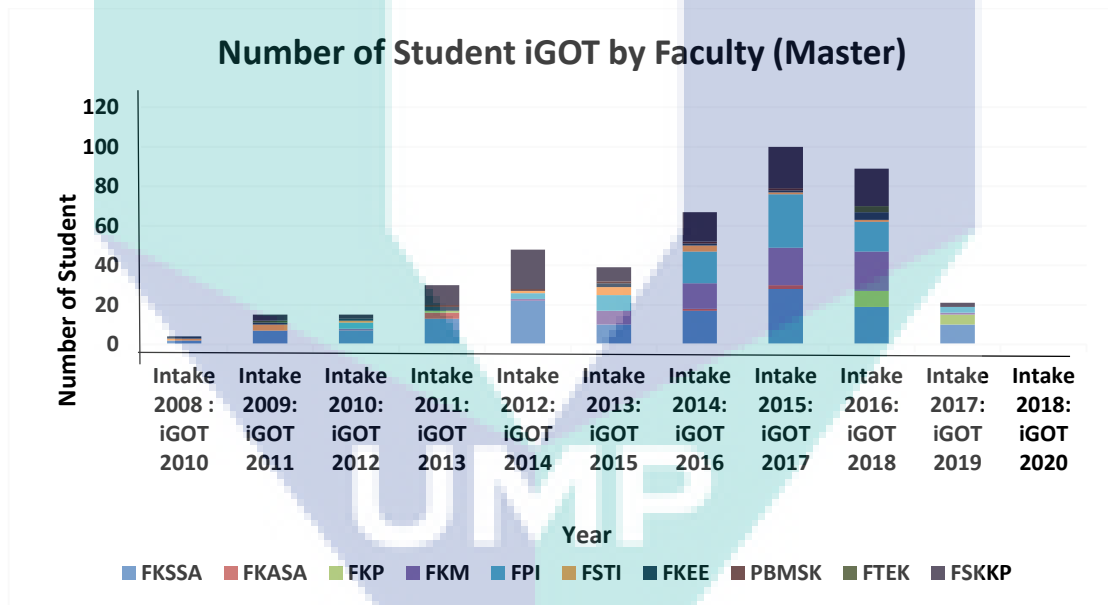


Figure 2.12 Number of Student iGOT by Faculty for Master

Table 2.9 Number of Student iGOT by Faculty for Master

Faculty	FKSSA	FKASA	FKP	FKM	FPI	FSTI	FKEE	PBMSK	FTEK	FSKKP	Total
Intake 2008: iGOT 2012	2	-	-	-	-	1	1	-	-	-	4
Intake 2009: iGOT 2013	7	-	-	-	-	3	1	-	1	3	15
Intake 2010: iGOT 2014	7	-	-	1	3	1	1	-	-	2	15
Intake 2011: iGOT 2015	13	3	1	-	-	-	2	1	-	10	30
Intake 2012: iGOT 2016	22	-	-	1	3	1	-	1	-	20	48
Intake 2013: iGOT 2017	10	-	-	7	8	4	2	1	-	7	39
Intake 2014: iGOT 2018	17	1	-	13	16	3	1	1	-	15	67
Intake 2015: iGOT 2019	28	2	-	19	27	1	1	1	-	21	100
Intake 2016: iGOT 2020	19	-	8	20	15	1	4	-	3	19	89
Intake 2017: iGOT 2021	10	-	5	1	3	-	-	-	-	2	21
Intake 2018: iGOT 2022	-	-	-	-	-	-	-	-	-	-	0

Figure 2.12 and Table 2.9 shows the number of students iGOT by faculty for master programme. The highest number of iGOT student is 100 students which was during the year 2019 (2015 intake). The majority contribution of iGOT students was from the FKSSA which was 28 students, followed by FPI with 27 students and FSKKP with 21 students. As of December 2018, the lowest number of students whom iGOT was during the 2012 iGOT (2008 intake) whereby, only 4 students iGOT.

2.6.4 Number of Student iGOT by Faculty (PhD)

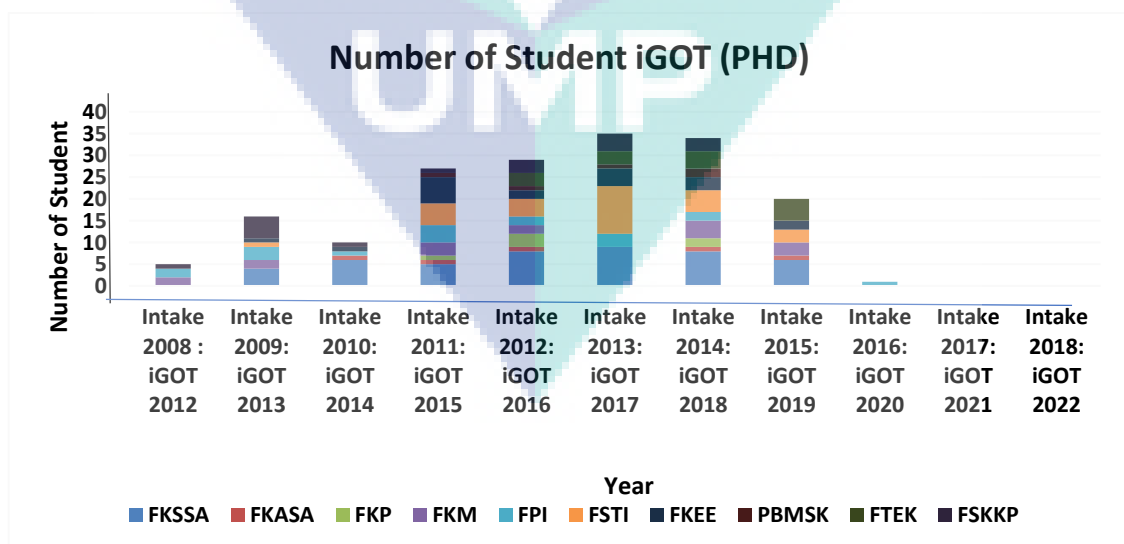


Figure 2.13 Number of Student iGOT by Faculty for PhD

Table 2.10 Number of Student iGOT by Faculty for PhD

Faculty	FKSSA	FKASA	FKP	FKM	FPI	FSTI	FKEE	PBMSK	FTEK	FSKKP	Total
Intake 2008 : iGOT 2012	-	-	-	2	2			-	-	1	5
Intake 2009: iGOT 2013	4	-	-	2	3	1	1	-	-	5	16
Intake 2010: iGOT 2014	6	1	-	-	1		1	-	-	1	10
Intake 2011: iGOT 2015	5	1	1	3	4	5	6	1	-	1	27
Intake 2012: iGOT 2016	8	1	3	2	2	4	2	1	3	3	29
Intake 2013: iGOT 2017	9	-	-	-	3	11	4	1	3	4	35
Intake 2014: iGOT 2018	8	1	2	4	2	5	3	2	4	3	34
Intake 2015: iGOT 2019	6	1	-	3	-	3	2	-	5	-	20
Intake 2016: iGOT 2020	-	-	-	-	1	-	-	-	-	-	1
Intake 2017: iGOT 2021	-	-	-	-	-	-	-	-	-	-	0
Intake 2018: iGOT 2022	-	-	-	-	-	-	-	-	-	-	0

Figure 2.13 and Table 2.10 shows the number of student iGOT for PhD. The highest number of iGOT student is 35 students during the year 2017 which is from the 2013 intake. The majority contribution of iGOT students are from FSTI with 11 students and FKSSA with 9 students. As of December 2018, the lowest number of students whom iGOT is iGOT 2012 from the 2008 intake, that stated only 5 student iGOT.

2.7 Number of Student Attrition

2.7.1 Number of Student Attrition for Master

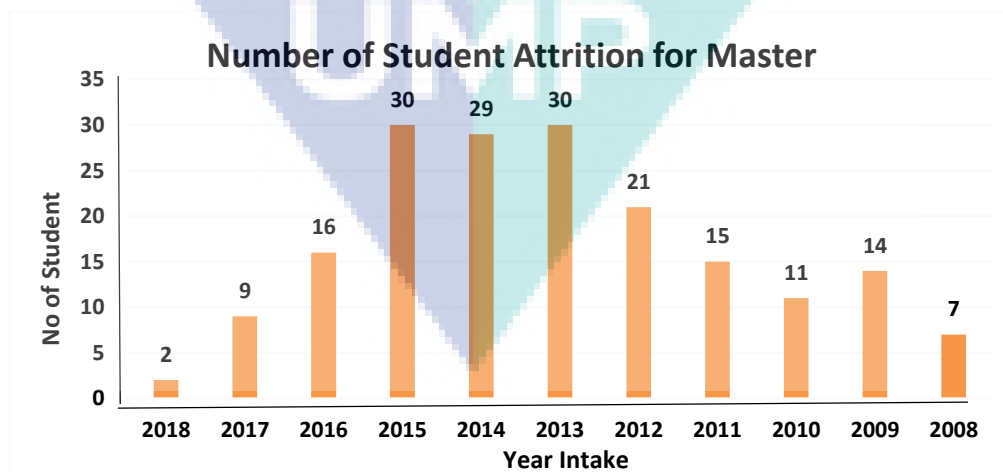


Figure 2.14 Number of Student Attrition for Master

Table 2.11 Number of Student Attrition for Master

Year Intake	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Number of Student Intake	158	172	186	178	156	89	116	83	43	54	23
Number of Student Attrition	2	9	16	30	29	30	21	15	11	14	7
Percentage of Student Attrition (%)	1.27	5.23	8.6	16.85	18.59	33.7	41.38	18.07	25.58	25.93	30.43

Figure 2.14 and Table 2.11 shows the number of attrition for master student from the year 2008 to 2018. The number of attrition started to increase from the year 2010 which was 11 students (25.58%) to 30 students (33.7%) in the year 2013. After that, the number slightly decreased from the year 2016 and onwards.

2.7.2 Number of Student Attrition for PHD

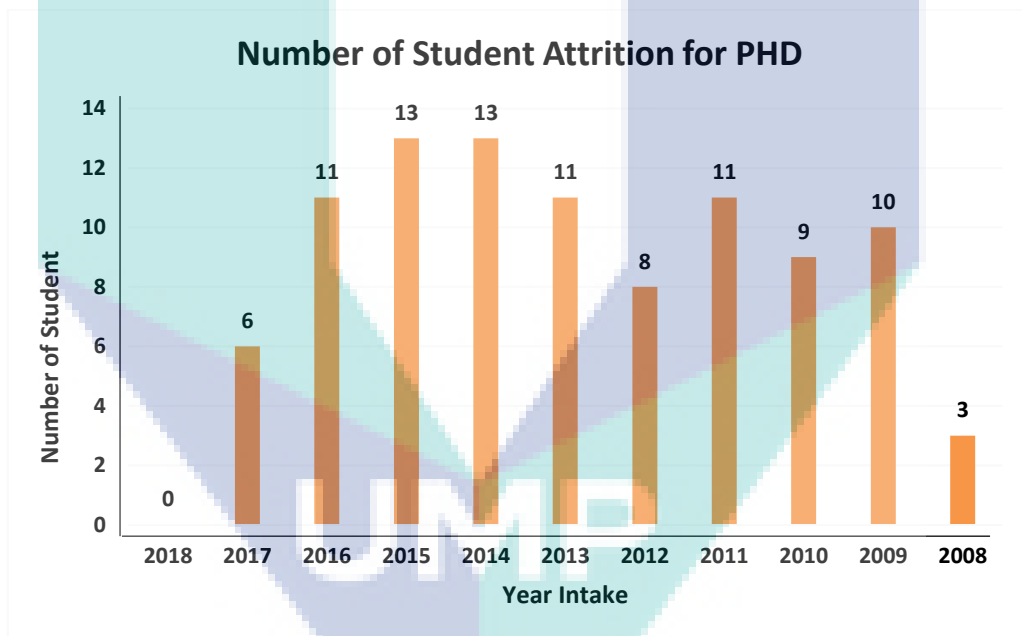


Figure 2.15 Number of Student Attrition for PHD

Table 2.12 Number of Student Attrition for PHD

Year Intake	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Number of Student Intake	90	155	118	112	81	67	52	46	21	31	10
Number of Student Attrition	0	6	11	13	13	11	8	11	9	10	3
Percentage of Student Attrition (%)	0	3.87	9.32	11.61	16.05	16.42	15.38	23.91	47.62	32.26	30

Figure 2.15 and Table 2.12 show the number of attritions for PHD student. The result shows inconsistent fluctuations. For the 2008 intake, the number of attritions is only 3 students (30%) and then it increased to 10 students (32.26%) for the 2008 intake. The highest number of student attrition is 13 students for the 2014 (16.05%) and 2015 (11.61%) intake.

2.7.3 Number of student Attrition by Faculty (Master)

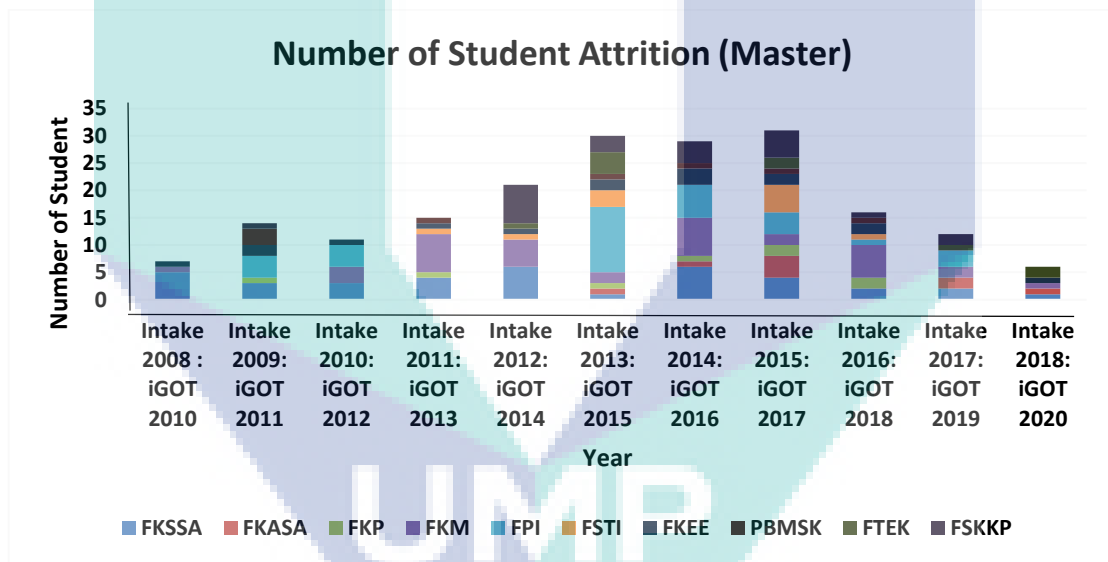


Figure 2.16 Number of Student Attrition by Faculty for Master Programme

Table 2.13 Number of Student Attrition for Master Programme

Faculty	FKSSA	FKASA	FKP	FKM	FPI	FSTI	FKEE	PBMSK	FTEK	FSKKP	Total
Intake 2008: iGOT 2010	5	-	-	1	-	-	1	-	-	-	7
Intake 2009: iGOT 2011	3	-	1	-	4	-	2	3	-	1	14
Intake 2010: iGOT 2012	3	-	-	3	4	-	1	-	-	-	11
Intake 2011: iGOT 2013	4	-	1	7	-	1	1	1	-	-	15
Intake 2012: iGOT 2014	6	-	-	5	-	1	1	-	1	7	21
Intake 2013: iGOT 2015	1	1	1	2	12	3	2	1	4	3	30
Intake 2014: iGOT 2016	6	1	1	7	6	-	3	1	-	4	29
Intake 2015: iGOT 2017	4	4	2	2	4	5	2	1	2	5	31
Intake 2016: iGOT 2018	2	-	2	6	1	1	2	1	-	1	16
Intake 2017: iGOT 2019	2	2	-	2	3	-	-	-	1	2	12
Intake 2018: iGOT 2020	1	1	-	1	-	-	1	-	2	-	6

Figure 2.16 and Table 2.13 shows the number of student attrition by faculty for Master programme. The highest number of student attrition is 31 students for iGOT 2017 which is from the 2015 intake. The majority of student attrition was contributed by FSTI and FSKKP whereby, both faculties had 5 student attritions out of 31 students.

2.7.4 Number of Student Attrition by Faculty (PhD)

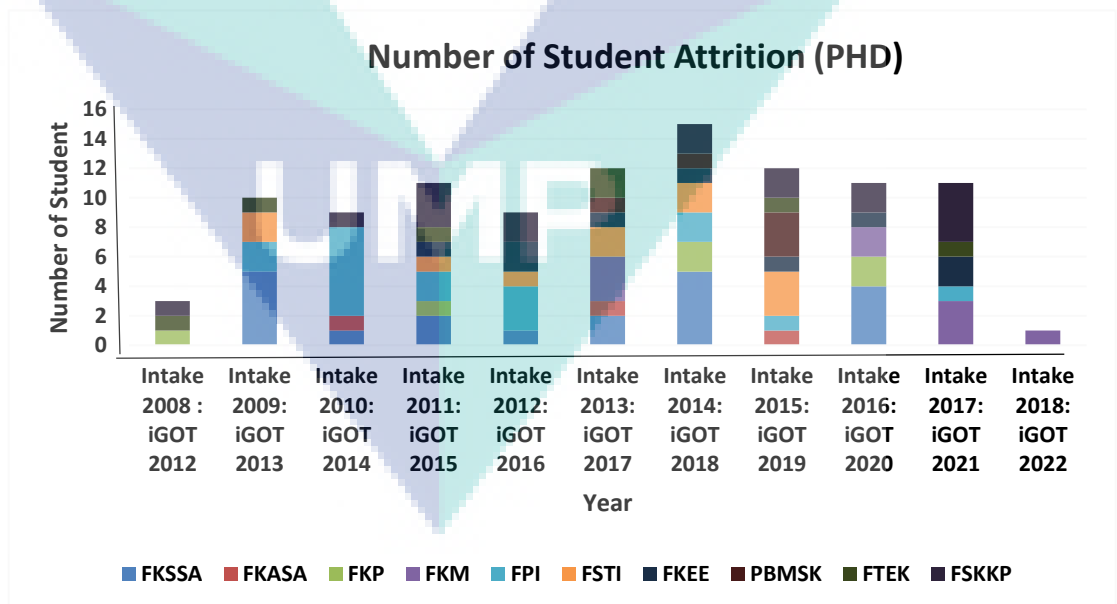


Figure 2.17 Number of Student Attrition for PhD Programme

Table 2.14 Number of Student Attrition for PhD Programme

Faculty	FKSSA	FKASA	FKP	FKM	FPI	FSTI	FKEE	PBMSK	FTEK	FSKKP	Total
Intake 2008 : iGOT 2012	-	-	1	-	-	-	-	-	1	1	3
Intake 2009: iGOT 2013	5	-	-	-	2	2	-	-	1	-	10
Intake 2010: iGOT 2014	1	1	-	-	6	-	-	-	-	1	9
Intake 2011: iGOT 2015	2	-	1	-	2	1	1	-	1	3	11
Intake 2012: iGOT 2016	1	-	-	-	3	1	2	-	-	2	9
Intake 2013: iGOT 2017	2	1	-	3	-	2	1	1	2	-	12
Intake 2014: iGOT 2018	5	-	2	-	2	2	1	1	-	2	15
Intake 2015: iGOT 2019	-	1	-	-	1	3	1	3	1	2	12
Intake 2016: iGOT 2020	4	-	2	2	-	-	1	-	-	2	11
Intake 2017: iGOT 2021	-	-	-	3	1	-	2	-	1	4	11
Intake 2018: iGOT 2022	-	-	-	1	-	-	-	-	-	-	1

Figure 2.17 and Table 2.14 shows the number of student attrition by faculty for PhD programme. The highest number of student attrition is 15 students for iGOT 2018 which is from the 2014 intake, and the majority of student attrition was contributed by FKSSA which is a total of 5 student attritions out of 13 students.

2.8 Summary

This chapter has discussed the actual numbers of students who achieved iGOT and those who drop out from the program. Calculation of iGOT and attrition rate is explained, and its trend is also discussed. Overall, attrition rate has been achieved but to achieve iGOT for masters by research students is quite difficult. Strategies need to be discussed to achieve this.

CHAPTER 3

EPAT SATISFACTION AND ALUMNI SURVEY

3.1 Introduction

This chapter explains the EPAT satisfaction survey and ALUMNI survey. Both surveys examine the satisfaction of postgraduate students with respect to issues that might hinder the postgraduate students to achieve iGOT and might lead to increase in attrition rate.

3.2 EPAT Satisfaction Survey

EPAT Satisfaction survey comprise of 9 factors which are (i) supervision and skills development; (ii) counter service of IPS; (iii) thesis examination; (iv) support systems; (v) intellectual climate & infrastructure; (vi) IPS; (vii) meeting expectations; (viii) workstation offered by IPS and (ix) teaching opportunities. Respondents are required to answer the questions on a likert scale from 1 to 7 whereby, 1 is strongly disagree/least satisfied, 5 is the average score and 7 represents strongly agree/satisfied.

3.2.1 Demographic Analysis

Table 3.1 shows the demographic profile of respondents. A total of 106 postgraduates by research students from all ten faculties in UMP participated in this study. Half of the respondents, which are 55.6% are PHD students and 44.34% are Masters' students. Furthermore, about 52.83% are local students and 47.17% are international students. Majority of students participating in this survey are Malay respondents followed by Middle Eastern respondents.

Table 3.1 Demographic profile of respondents

	Description	Frequency	Percentage
Gender	Female	52	49%
	Male	54	51%
	Total	106	100%
Age	25 years old or younger	26	25%
	26 to 35 years old	60	57%
	36 to 45 years old	16	15%
	46 to 55 years old	4	4%
	Total	106	100%
Ethnicity	African	13	12%
	Chinese	15	14%
	Indian	7	7%
	Malay	38	36%
	Middle Eastern	17	16%
	Others	16	15%
	Total	106	100%
Type	Local	56	92%
	International	50	8%
	Total	106	100%
Status	Full-time	98	23%
	Part-time	8	8%
	Total	106	100%
Faculty	Chemical & Natural Resources Engineering	24	22.6%
	Industrial Sciences & Technology	23	21.7%
	Manufacturing Engineering	12	11.3%
	Industrial Management	9	8.5%
	Engineering Technology	9	8.5%
	Centre for Modern Language and Human Sciences	8	7.5%
	Electrical & Electronics Engineering	7	6.6%
	Computer Systems & Software Engineering	6	5.7%
	Mechanical Engineering	6	5.7%
	Civil Engineering & Earth Resources	2	1.9%
	Total	106	100%

3.2.2 Descriptive Analysis

Table 3.2 shows the descriptive statistics of the factors of the E-PAT Satisfaction survey. The results showed that the postgraduate students are satisfied with the factors surveyed as the mean of the factors is 5 and above. It can be seen that the postgraduate students are most satisfied with supervision and skills development, followed by counter service of IPS and thesis examination. However, they are not quite satisfied with the workstation offered by IPS and teaching opportunities provided by UMP.

Table 3.2 Descriptive Analysis of the factors

	Factors	Department in Charge	Min	Max	Mean	Std. Dev	Satisfaction Rank
1	Supervision and Skills Development	Faculty	2.68	7	6.11	1.00	1
2	Counter Service of Ips	IPS	1.29	7	5.79	1.13	2
3	Thesis Examination	IPS	4.14	7	5.71	1.24	3
4	Support Systems	Personal	1.75	7	5.68	1.40	4
5	Intellectual Climate & Infrastructure	Faculty	1.94	7	5.61	1.12	5
6	Institute of Postgraduate Studies (IPS)	IPS	1.36	7	5.44	1.31	6
7	Meeting Expectations-	Faculty, Student Affair & Alumni, IO, Bursar, Library	1.47	7	5.40	1.33	7
8	Workstation Offered By IPS	IPS	1.00	7	5.16	1.61	8
9	Teaching Opportunities	Faculty	1.00	7	5.09	1.57	9

Table 3.3 shows the overall mean for the factors in each faculty. The results showed that overall, the faculties are mostly satisfied with the service provided. For the faculty of Computer System and Software Engineering (FSKKP), Faculty of Engineering Technology (FTEK) and Faculty of Civil Engineering & Earth Resources (FKASA), their highest mean value is 6.17, 6.48 and 5.86 and this shows that they are satisfied with IPS's Counter Service. On the other hand, for Faculty of Industrial Management (FIM), Faculty of Industrial Science Technology (FIST), Faculty of Electrical Engineering (FKEE), Faculty of Mechanical Engineering (FKM), Faculty of Manufacturing Engineering (FKP) and Faculty of Chemical Engineering & Natural Resources (FKKSA) the students are very satisfied with the supervision & skills development where by the mean value respectively are 6.33, 6.08, 5.81, 5.90, 6.31 and 6.15. As for the Faculty of Centre for Modern Language & Human Science (PBMSK), their highest mean value is 6.56 which show they are mostly satisfied with the support systems.

Table 3.3 Overall Mean for each Factor

Faculty	FSKKP	FIM	FIST	FKEE	FKM	FTEK	FKP	PBMSK	FKKSA	FKASA
Number of Respondent	6	9	23	7	6	9	12	8	24	2
1 Supervision & Skills Development	5.93	6.33	6.08	5.81	5.90	6.16	6.31	6.43	6.15	4.36
2 Workstation Offered by IPS	5.27	5.59	4.87	4.43	5.57	5.06	5.15	5.29	5.46	4.00
3 Thesis Examination	5.71	-	-	-	-	-	4.71	6.71	-	-
4 Institute of Postgraduate Studies (IPS)	5.46	5.87	5.29	4.57	5.11	6.17	4.83	6.08	5.65	4.86
5 Counter Service of IPS	6.17	6.14	5.70	4.71	5.50	6.48	5.08	6.09	6.02	5.86
6 Intellectual Climate & Infrastructure	5.76	5.94	5.62	5.17	5.19	5.82	5.31	5.99	5.67	4.81
7 Teaching Opportunities	5.56	5.37	5.17	4.81	5.00	5.30	4.97	5.46	4.81	4.67
8 Support Systems	6.00	5.28	5.74	5.21	5.29	5.58	5.73	6.56	5.63	5.75
9 Meeting Expectations	5.65	5.60	5.38	4.85	4.73	5.66	4.95	5.94	5.68	4.45

Table 3.4 shows the sub-items in supervision and skill development factors for each faculty. All the faculties showed a high mean value which is 5.0 and above. This means that, most of the students are satisfied with the supervision given by their supervisor. However, students from the Faculty of Civil Engineering and Earth Resources (FKASA) are quite dissatisfied with their supervisors. Several of the mean value is 3.50 for sub-items like “My supervisor make a real effort to understand any difficulties I face”, “My supervisor provides an atmosphere in which I feel comfortable raising issues that concern me”, “My supervisor sets aside an uninterrupted time for us to discuss my research progress”, “My supervisor provides an atmosphere in which I feel comfortable raising issues that concern me”, “My supervisor encourages constructive discussions about my progress”, “My supervisor has sufficient expertise to guide me in my research”, “My supervisor makes real effort to assist me in my research” and “My department provides opportunities for social contact with other research students”. From this, it can be said that mostly their supervisors are not really concern on the student’s difficulties and does not really put an effort to help their students.

Table 3.4 Mean of Supervision and Development

	SUPERVISION AND SKILLS DEVELOPMENT	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	My supervisor make a real effort to understand any difficulties I face	3.50	6.78	6.50	6.58	6.39	6.00	6.78	6.33	6.00	6.17
2	My supervisor provides me with appropriate guidance with refining topic selection and clarification	4.00	6.11	6.50	6.58	6.43	6.14	6.89	6.33	5.67	6.00
3	My supervisor provides me with appropriate guidance in planning my research, identifying important goals and meeting deadlines	4.50	6.33	6.38	6.58	6.39	6.14	6.56	6.46	5.67	6.00
4	My supervisor encourages me to do research in a self directed or independent manner	5.50	6.67	6.50	6.67	6.43	6.14	6.67	6.50	6.17	6.33
5	My supervisor provides an atmosphere in which I feel comfortable raising issues that concern me	3.50	6.44	6.50	6.33	6.26	5.86	6.78	6.50	6.00	6.50
6	My supervisor is available for discussions/consultations when needed	4.50	6.22	6.50	6.58	6.39	5.86	6.56	6.46	6.17	5.83
7	My supervisor sets aside an uninterrupted time for us to discuss my research progress	3.50	6.44	6.50	6.42	6.13	5.71	6.11	6.08	6.00	6.17
8	My supervisor provides an atmosphere in which I feel comfortable raising issues that concern me	3.50	6.78	6.50	6.25	6.17	5.86	6.67	6.50	6.00	6.33
9	My supervisor has made expectations of me clear	4.00	6.56	6.50	6.42	6.30	5.71	6.67	6.29	6.17	6.33
10	My supervisor encourages constructive discussions about my progress	3.50	6.67	6.50	6.75	6.35	6.29	6.67	6.33	6.00	6.00
11	My supervisor has sufficient expertise to guide me in my research	3.50	6.11	6.50	6.58	6.22	6.00	6.78	6.42	5.83	6.00
12	My supervisor encourages me to present my work at appropriate seminars and conference	4.50	6.00	6.63	6.67	6.22	6.14	6.56	6.46	6.17	6.17

Table 3.4 Mean of Supervision and Development (cont')

	SUPERVISION AND SKILLS DEVELOPMENT	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
13	My supervisor makes real effort to assist me in my research	3.50	6.67	6.25	6.50	6.30	6.14	6.56	6.21	5.83	6.17
14	My institution values and responds to feedback from research degree students	4.50	5.67	6.13	5.67	6.00	5.29	5.89	6.17	5.33	5.50
15	I am encouraged to think about the range of skills development that is available to me.	5.00	6.33	6.25	6.17	6.13	5.43	6.00	6.29	5.83	6.00
16	I understand the required standard for the thesis.	5.00	5.89	6.75	6.17	6.00	5.86	6.11	6.25	6.00	6.17
17	I have adequate access to the equipment necessary for my research.	5.00	5.56	6.38	5.83	5.43	5.43	5.89	5.58	5.00	6.17
18	I have been given good guidance in topic selection and refinement by my supervisor/s.	4.50	6.11	6.63	6.50	6.17	6.00	6.67	6.21	6.00	6.00
19	I have a suitable working space.	5.00	5.33	6.13	6.67	5.43	5.14	6.00	5.83	5.83	6.33
20	I am encouraged to reflect on my professional development needs.	5.00	6.44	6.50	6.42	5.91	5.71	6.22	6.08	6.00	5.83
21	My department provides opportunities for social contact with other research students.	3.50	5.11	6.13	5.92	5.70	5.71	5.78	5.63	6.00	5.33
22	My department provides opportunities for me to be involved in the broader research culture.	4.50	5.22	6.13	5.83	5.57	5.57	5.78	5.38	6.00	5.00
23	I know whom to approach, or where to find information related to any element of my postgraduate programme.	5.00	6.11	5.88	5.50	5.52	5.57	6.11	5.71	5.50	5.33
24	There are adequate opportunities available for me to further develop my research skills.	4.50	6.11	6.63	6.00	5.65	5.57	5.67	5.71	6.00	5.00
25	I have received good guidance in my literature search from my supervisor	4.00	6.22	6.50	6.17	6.13	6.00	6.44	6.17	6.17	5.17
26	I understand my responsibilities as a postgraduate student.	5.00	6.56	6.75	6.50	6.39	6.14	6.44	6.29	6.17	6.50
27	There are adequate opportunities available for me to further develop my soft skills (communication, presentation, teamwork).	5.00	5.89	6.50	6.00	5.91	5.43	5.78	5.92	5.83	5.83
28	As a result of my experience, so far I feel confident about managing a research project	5.00	6.22	6.63	6.33	6.26	5.86	6.33	6.04	5.83	5.83

Table 3.5 shows the mean value for sub-items of each faculty on workstations offered by IPS. All the faculties showed the mean value of 5.0 and above. Almost all of the students are satisfied with the workstation that has been offered. However, only some of them have issues that needed to be taken into IPS's consideration specifically on safety issues which is the sub-item "*The safety and security of workstations*" and the availability of facility which is the sub-item "*Sufficient facility in workstation*" was raised by students from the Faculty of Civil Engineering and Earth Resources (FKASA).

Table 3.5 Mean of Workstation Offered by IPS

WORKSTATION OFFERED BY IPS		FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	There is sufficient availability of workstation	4.00	4.22	5.13	5.08	4.04	4.43	5.56	4.96	5.50	5.33
2	The accessibility of workstation (can access any time)	4.00	5.00	5.25	4.92	4.78	4.57	5.78	5.54	5.17	5.17
3	The safety and security of workstations	3.00	5.33	5.13	5.33	5.04	4.29	5.78	5.58	5.33	5.33
4	Transfer of workstation ownership	4.00	4.67	5.13	4.92	4.48	4.29	5.22	5.54	5.67	5.00
5	Cleanliness of workstation	4.50	5.44	5.50	5.50	5.30	4.43	5.56	5.71	5.50	5.67
6	Research ambience of workstation	4.00	5.11	5.25	5.33	4.83	4.00	5.67	5.38	5.67	5.17
7	Sufficient facility in workstation	3.00	5.11	5.25	4.83	4.52	4.14	5.00	5.21	5.67	5.50
8	Information communicated regarding workstation	4.50	4.89	5.38	5.08	5.00	4.29	5.56	5.38	5.67	5.17
9	Documentation to be filled is easy to understand	4.50	5.22	5.50	5.25	5.26	4.86	5.56	5.50	5.67	5.17
10	Rules and Guidelines regarding workstation is easily understood	4.50	5.56	5.38	5.25	5.48	5.00	6.22	5.79	5.83	5.17

Table 3.6 shows the sub-items for each faculty on thesis examination. Only 3 faculties gave their feedback on these items which were the Faculty of Centre for Modern Language & Human Science (PBMSK), Faculty of Manufacturing Engineering (FKP) and Faculty of Computer System and Software Engineering (FSKKP). All of the students under these faculties are satisfied with the sub-items except for, the schedule of viva voce which is under the sub-item "*Scheduling of viva voce was done well*", some of the students are not satisfied.

Table 3.6 Mean of Thesis Examination

THEESIS EXAMINATION		FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	The thesis examination process was fair	-	-	6.00	4.00	-	-	-	-	-	7.00
2	The examination of my thesis was completed in a reasonable time scale	-	-	7.00	5.00	-	-	-	-	-	2.00
3	I was given adequate support and guidance in preparation for my viva voce	-	-	7.00	5.00	-	-	-	-	-	7.00
4	I was given adequate support and guidance to make any changes to my thesis following my viva voce	-	-	7.00	5.00	-	-	-	-	-	7.00
5	Process flow of viva voce was clear	-	-	7.00	5.00	-	-	-	-	-	7.00
6	Clear assessments were provided by IPS	-	-	6.00	5.00	-	-	-	-	-	7.00
7	Scheduling of viva voce was done well	-	-	7.00	4.00	-	-	-	-	-	3.00

Table 3.7 shows the mean value of IPS department and most of the students are satisfied with the services provided by IPS. For example the Faculty of Engineering Technology (FTEK), are highly satisfied with the overall quality of services offered by IPS with mean value of 6.38, as compared to other faculties where by the lowest mean value is 4.17 from the Faculty of Manufacturing Engineering (FKP). Eventhough most of the faculties are satisfied with the services provided by IPS, there are some of the faculties who do not agree with the services provided for example, the Faculty of Civil Engineering & Earth Resources (FKASA) are not satisfied with the sub-item “*Requirements of medical report during registration should be upheld in any circumstances*” with mean value of 3.50.

Table 3.7 Mean of IPS Department

	INSTITUTE OF POSTGRADUATE STUDIES (IPS)	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	IPS is equipped with the latest facilities	4.50	5.44	5.88	4.67	5.30	4.43	6.00	5.58	5.17	5.17
2	Employees of the IPS show professionalism in offering service	5.00	6.33	6.25	5.00	5.17	4.29	6.11	5.88	5.33	6.00
3	The procedures and requirements of IPS are clear	5.00	5.78	6.38	5.00	5.09	4.57	6.11	5.29	5.00	6.17
4	IPS provides various channels of communication	4.50	6.22	6.38	5.17	5.43	4.29	5.78	5.58	5.17	5.67
5	IPS provides prompt response to request	4.50	6.56	6.38	4.92	5.26	4.43	6.11	5.63	5.50	5.83
6	IPS is competent in performing the tasks	5.00	6.33	6.25	4.92	5.22	4.29	6.22	5.75	5.00	5.33
7	IPS delivers services within the expected time frame	4.50	6.11	6.25	4.92	5.04	4.71	6.33	5.79	5.17	6.17
8	IPS is committed to perform the task undertaken	5.00	6.33	6.00	4.92	5.30	4.43	6.33	5.67	5.00	5.50
9	IPS Studies should have employees who are technically competent to perform the service	5.50	6.44	6.25	5.00	5.70	5.00	5.44	6.17	5.50	4.67
10	IPS provides the necessary academic guidelines on postgraduate studies	4.50	6.67	6.25	5.17	5.61	5.00	6.22	5.79	5.00	5.00
11	The progress reports of students is given on a timely basis	5.00	6.44	6.13	5.25	5.57	5.14	6.44	6.13	5.50	5.33
12	IPS has its stakeholders best interest at heart	4.00	6.33	6.13	4.75	5.13	4.29	5.78	5.58	4.83	5.17
13	Institute of Postgraduate Studies takes every complaints seriously no matter how minor they are	4.50	6.22	6.00	4.33	5.09	3.43	6.00	5.08	4.67	5.17
14	Academic Administration Management at the IPS is effective and satisfactory	5.00	6.33	6.25	4.67	5.00	4.14	6.11	5.88	5.17	5.67
15	Dissemination of information is effective	5.00	6.33	6.13	4.75	4.83	4.86	5.89	5.58	5.00	5.50
16	IPS staff can be contacted easily	5.00	6.56	6.63	4.75	4.74	4.43	5.89	5.79	5.33	5.33
17	All the necessary forms and information are accessible on IPS website	5.50	6.56	6.25	5.42	5.35	5.43	6.00	5.92	5.50	6.33
18	Up to date information is available on the IPS website	5.50	6.56	6.25	5.33	5.26	5.43	6.11	5.83	5.33	6.00
19	The student portal (IMS-Academic) helps in the management of students' information and studies	5.00	6.00	5.88	5.17	5.17	4.71	5.44	5.75	4.83	5.17
20	Compulsory modules of IPS is beneficial to my research	4.50	5.67	5.88	4.33	4.96	3.71	6.11	5.50	5.33	5.50
21	Method of assessment of compulsory modules is fair	4.00	5.67	5.63	4.42	5.00	3.86	5.33	5.33	5.17	5.50
22	Online method of learning of compulsory modules is helpful	4.00	6.00	5.88	4.42	4.96	4.29	5.56	5.25	5.17	6.00
23	Face to face method of learning of compulsory modules is helpful	4.00	5.89	6.25	4.67	5.30	4.57	5.22	5.58	5.33	5.33

Table 3.7 Mean of IPS Department (cont')

	INSTITUTE OF POSTGRADUATE STUDIES (IPS)	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
24	Requirement to submit research plan by IPS is useful	5.00	5.89	6.25	4.92	5.39	4.43	5.78	5.75	5.00	6.00
25	Requirement for graduation is clear	5.50	6.00	6.38	5.17	5.57	4.43	6.11	5.79	5.00	5.33
26	Requirement to submit progress report is clear	5.50	5.78	6.25	5.33	6.00	5.29	6.33	6.00	5.17	6.17
27	Information regarding availability of scholarship from UMP is clearly given	5.50	6.11	5.88	4.75	5.39	5.14	6.00	5.88	4.67	5.83
28	IPS training programmes are beneficial	5.00	6.22	6.13	4.75	5.26	4.57	5.89	5.79	5.17	4.67
29	3 Minute Thesis (3MT) competition is beneficial	4.50	6.00	6.00	4.92	5.57	3.71	5.33	5.71	5.00	3.50
30	National Conference for Postgraduate Research (NCON- PGR) is beneficial	5.00	6.33	5.75	5.17	5.61	4.14	5.89	5.75	5.00	4.33
31	Registration process is efficiently done	5.00	6.22	6.13	5.50	5.70	5.29	5.67	5.83	4.67	5.67
32	Student activities are handled well by IPS	4.50	6.33	6.38	4.67	5.43	3.86	5.67	5.33	5.17	4.33
33	Admission requirement is flexible	4.50	6.11	6.38	5.08	5.61	4.43	5.78	5.67	5.33	5.67
34	Requirements of medical report during registration should be upheld in any circumstances	3.50	5.67	6.13	5.08	5.48	4.86	5.44	5.46	5.00	5.67
35	Admission Unit: Admission inquiry, application, entry requirements, offer letter, compulsory courses.	6.00	5.86	5.38	4.58	5.30	4.71	5.67	5.48	5.00	5.40
36	Academic Unit: Course registration, add & drop, defer and withdraw process, progress report, graduation, transcript & scroll.	6.00	6.38	5.50	4.33	5.19	5.00	5.75	5.50	4.83	5.40
37	Viva Voce Unit: Thesis submission for viva voce, viva voce date confirmation, thesis format checking, thesis correction, final thesis submission.	5.00	6.29	5.57	4.00	5.17	5.00	5.29	5.33	5.00	6.00
38	Administration Unit: DSS/GRS/DRS/MRS inquiry, application/ requirement and extension.	4.50	6.29	5.75	4.20	4.82	4.83	5.63	5.36	5.17	5.67
39	Overall quality of services offered by IPS:	5.50	6.38	5.75	4.17	5.22	4.71	6.00	5.50	5.00	5.67

Table 3.8 shows the sub-items for each faculty on IPS Counter Services. It shows that most of the faculties are satisfied with the services provided. Furthermore, most of the students agreed that the IPS staffs at the service counter are neatly dressed and this sub-item have the highest mean from the Faculty of Civil Engineering & Earth Resources (FKASA) with mean value of 6.50, Faculty of Industrial Science Technology (FIST) with mean value of 6.17, Faculty of Chemical Engineering & Natural Resources (FKKSA) with mean value of 6.17 and Faculty of Computer System and Software Engineering (FSKKP) with mean value of 6.50. In terms of faculty, Faculty of Engineering Technology (FTEK) is the most satisfied with most of the IPS counter services given where by, the highest mean value is 6.56 which are for the sub-items “*the staff at the counter service shows professionalism in dealing with issues*”, “*The staff at the service counter understands the needs of the students*”, “*The staff at the service counter has a pleasant attitude*”, and “*The staff at the service counter responds to questions raised in a timely manner*”.

Table 3.8 Mean of IPS Counter Service

	COUNTER SERVICE OF IPS	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	The staff at the service counter shows a sincere interest in dealing with my issue	6.00	6.33	6.13	4.83	5.74	4.57	6.44	6.04	5.50	6.17
2	The staff at the service counter is knowledgeable	5.50	6.33	6.00	4.83	5.57	4.71	6.11	6.00	5.33	6.00
3	The staff at the service counter is neatly dressed	6.50	6.44	6.13	5.50	6.17	5.00	6.22	6.17	5.83	6.50
4	The staff at the service counter shows professionalism in dealing with my issue	5.50	6.56	6.13	5.25	5.57	4.71	6.11	5.96	5.50	6.17
5	The staff at the service counter understands the needs of the students	5.50	6.56	6.13	5.00	5.57	4.71	5.89	5.92	5.33	5.83
6	The staff at the service counter has a pleasant attitude	6.00	6.56	6.38	5.00	5.70	4.57	6.33	6.13	5.50	6.33
7	The staff at the service counter responds to questions raised in a timely manner	6.00	6.56	5.75	5.17	5.57	4.71	5.89	5.92	5.50	6.17

Table 3.9 shows the mean value of intellectual climate and infrastructure. Most of the students are satisfied and agree with the intellectual climate and infrastructure given with the mean values above 5.0. However, some of the students from the Faculty of Civil Engineering & Earth Resources (FKASA) is not really satisfied with facilities given whereby for the sub-item “*There is adequate provision of computing resources and facilities*” with mean value 3.50 and they do not prefer distance learning for the sub-item “*I prefer distance learning*” with mean value 3.50.

Table 3.9 Mean of Intellectual Climate & Infrastructure

	INTELLECTUAL CLIMATE & INFRASTRUCTURE	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	There is appropriate financial support for research activities.	4.50	4.67	5.00	4.42	4.65	4.43	5.33	4.46	4.17	5.00
2	The research ambience in my department or faculty stimulates my work.	4.50	5.67	6.13	5.17	5.00	4.71	5.78	5.50	4.67	5.17
3	My experience so far has improved my analytical skills.	5.00	5.67	6.00	5.42	5.65	5.29	5.89	5.75	5.17	5.83
4	I understand the standard of work expected.	5.00	6.22	6.25	5.42	5.87	5.43	6.11	6.04	5.67	6.17
5	There is adequate provision of computing resources and facilities.	3.50	5.56	6.00	5.33	5.48	5.14	5.56	5.79	4.83	5.67
6	I understand the requirements and deadlines for formal monitoring of my progress.	5.50	6.22	6.25	5.50	5.65	5.57	6.22	6.13	5.17	6.17
7	I understand the requirements of thesis examination.	5.50	5.89	6.25	5.17	5.91	5.29	6.33	6.13	5.17	6.00
8	My experience so far has helped me to develop a range of communication skills.	5.50	6.00	5.88	5.83	5.96	5.14	6.00	5.96	5.50	6.17
9	There is adequate provision of library facilities.	5.00	5.67	6.13	5.58	5.74	5.43	6.22	5.79	5.00	6.17
10	I am encouraged to reflect on my career development needs.	5.00	6.11	6.50	5.17	5.83	5.14	6.11	5.88	5.33	5.33
11	As a result of my experience so far I have improved my ability to learn independently.	5.50	6.33	6.13	5.75	6.04	5.43	6.33	6.04	6.00	6.17
12	My supervisor is available when I need them.	4.50	6.33	6.38	5.83	6.13	5.71	6.67	6.21	6.33	6.00
13	I have the technical support I need.	4.50	6.44	6.00	5.25	5.96	5.43	6.11	5.63	4.67	5.83
14	I feel integrated into my department’s community.	5.00	5.78	6.25	5.33	5.65	5.43	5.89	5.71	5.33	5.67
15	My department provides a	4.50	5.56	5.50	5.25	5.52	5.29	6.11	5.54	5.00	5.67

	good seminar programme for postgraduate students.											
16	I am aware of my institution's responsibilities towards me as a research degree student.	5.00	6.33	6.38	5.25	5.74	5.43	6.00	5.79	5.17	5.83	
17	I prefer face-to-face learning.	5.00	5.56	6.00	5.50	5.70	5.14	6.00	6.04	5.67	5.33	
18	I prefer distance learning.	3.50	4.78	4.75	4.50	4.74	3.57	4.22	3.71	4.67	5.50	

Table 3.10 shows mean of teaching opportunities. Most of the student from all faculties are satisfied with the teaching opportunity that was given. The highest mean value is from the Faculty of Computer System and Software Engineering (FSKKP), whereby they are satisfied with the adequate guidance for their teaching with mean value 5.83. The lowest mean value is from Faculty of Civil Engineering & Earth Resources (FKASA), with mean value only 4.0 for the same sub-item for teaching opportunities.

Table 3.10 Mean of Teaching Opportunities

	TEACHING OPPORTUNITIES	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	I have had adequate opportunity to gain experience of teaching (e.g., lectures, seminars or workshops) whilst doing my postgraduate programme.	5.00	5.44	5.38	5.00	5.04	5.14	5.33	4.88	5.17	5.33
2	I have been given adequate support and guidance for my teaching.	4.00	5.22	5.50	4.83	5.22	4.57	5.33	4.71	4.83	5.83
3	I think the experience that I have gained through teaching has been a worthwhile aspect of my postgraduate programme.	5.00	5.22	5.50	5.08	5.26	4.71	5.44	4.83	5.00	5.50

In terms of support systems as shown in Table 3.11, most of the students from all faculties are satisfied with the support from their friends and family, their spouse or partners, from their employer and also from their personal finances. The Faculty of Centre for Modern Language & Human Science (PBMSK) has the highest mean for all sub-items as compared to other the faculties.

Table 3. 11 Mean of Support System

	SUPPORT SYSTEMS	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	My friends and family are emotionally supportive of my studies.	6.00	6.67	6.63	6.25	6.43	5.57	6.33	6.58	6.50	6.33
2	My spouse/partner is supportive of my studies.	6.00	5.78	6.75	5.83	6.17	5.57	5.56	6.08	5.33	6.17
3	My employer is supportive of my studies.	5.50	4.67	6.50	5.50	5.09	5.00	4.22	4.92	4.50	6.00
4	My personal finances are supportive of my studies.	5.50	5.22	6.38	5.33	5.26	4.71	5.00	4.92	4.83	5.50

Table 3.12 shows the mean values of meeting expectation for the facilities and also non-academic services that were provided. From the results, almost all the services and facilities met the student's expectation. However, the students are not really satisfied with only a few sub-items. For example in terms of hostel, some of the student from Faculty of Civil Engineering & Earth Resources (FKASA) with mean value 3.00 and Faculty of Mechanical Engineering (FKM) with mean value 3.33 are not satisfied with the hostel facilities and also they feel that the charges for the hostels are not reasonable whereby for the Faculty of Civil Engineering & Earth Resources (FKASA) the mean value is 3.50, Faculty of Engineering Technology (FTEK) the mean value is 3.56 and Faculty of Electrical Engineering (FKEE) the mean value is 3.86. As for cafeteria, some of the students from the Faculty of Manufacturing Engineering (FKP) with mean value 3.92, Faculty of Electrical Engineering (FKEE) with mean value 3.86 and Faculty of Mechanical Engineering (FKM) with mean value 3.83, still felt that the food selections did not meet their expectation. For International Office services, some of the students also from Faculty of Electrical Engineering (FKEE) felt the issues of Visa and immigration are not managed well with mean value of 3.86 and there is still no clear guideline and processes from International Office with mean value of 3.86. As for the issue of tuition fees, almost all the students are not quite satisfied by giving low mean values where by, the mean values given are 5.0 and below except for the Faculty of Centre for Modern Language & Human Science (PBMSK) with mean value 5.75. The lowest mean value for the sub-item is from Faculty of Civil Engineering & Earth Resources (FKASA) and Faculty of Mechanical Engineering (FKM) with the mean values of 3.00 and 3.33 respectively.

Table 3. 12 Mean of Meeting Expectation

	MEETING EXPECTATIONS	FKASA	FTEK	PBMSK	FKP	FIST	FKEE	FIM	FKKSA	FKM	FSKKP
1	Supervisory support and guidance.	5.00	6.44	6.38	6.42	6.30	5.43	6.56	6.17	6.00	5.67
2	Opportunities to develop a range of research skills.	5.00	6.00	6.00	5.75	6.17	5.43	6.22	6.13	5.50	6.17
3	Opportunities to develop a range of soft skills.	5.00	5.78	6.00	5.67	6.00	5.29	5.89	5.92	5.83	6.00
4	Access to appropriate facilities.	5.00	6.00	6.00	5.33	5.70	5.29	6.11	5.75	5.17	6.00
5	The research environment.	4.00	5.89	6.13	6.08	5.57	5.29	6.11	6.04	5.50	6.00
6	Provision of guidance of institutional standards and expectations for your postgraduate programme.	4.50	6.00	6.00	5.08	5.74	5.14	6.00	5.92	5.67	6.33
7	Library is well equipped.	5.50	6.33	6.25	5.42	5.96	5.29	6.00	6.04	5.33	6.33
8	Training provided by library is beneficial.	4.50	5.78	5.88	5.25	5.96	5.29	5.33	6.25	5.50	5.50
9	Hostel is well equipped with facilities.	3.00	5.11	5.88	4.25	4.96	4.57	5.33	5.54	3.33	5.67
10	Hostel is safe to stay in.	4.50	5.89	5.88	4.50	5.48	4.71	5.89	5.96	3.83	5.83
11	Hostel charges is reasonable.	3.50	3.56	5.50	3.25	3.57	3.86	4.33	4.71	2.17	5.67
12	Cafeteria offers a wide variety of selection of food.	4.50	4.78	5.25	3.92	4.48	3.86	4.78	5.00	3.83	5.33
13	Visa and immigration issues is well managed.	4.50	5.67	6.00	4.67	5.17	3.86	5.44	5.50	5.17	5.17
14	Clear guidelines and processes are provide by International Office.	3.50	5.89	6.13	4.75	5.52	3.86	5.89	5.58	5.17	4.83
15	Laboratory and equipment services is well managed.	5.00	5.89	5.75	5.08	5.22	4.71	5.56	5.58	4.67	5.17
16	Tuition fees is reasonable.	3.00	4.56	5.75	4.17	4.39	4.29	4.44	4.46	3.33	4.67
17	Method of payment of tuition fees is reasonable.	4.50	5.56	6.00	5.08	5.30	5.00	5.11	5.92	4.00	5.67
18	Internet services is easily accessible.	5.00	6.11	6.13	4.83	5.74	5.43	5.89	5.88	4.83	6.00
19	Internet services is stable	4.50	5.78	6.00	4.58	4.96	5.29	5.22	5.54	4.50	6.00
20	E-COMM is friendly to user.	5.00	6.11	6.00	5.00	5.52	5.14	5.89	5.79	5.17	5.00

3.3 Alumni Survey / egraduan survey

Alumni survey or *egraduan* survey is given to students who have graduated. Students who have confirmed will be coming for convocation, were provided a link where they are required to fill up the survey. Alumni survey asks students to rate their satisfaction towards 9 factors which are: (i) Curricular, (ii) Evaluation system, (iii) Career, (iv) Instructor (lecturer/supervisor/facilitator), (v) Infrastructure facility, (vi)

Skill/knowledge gained from your study, (vii) Study, (viii) How education in educational institution influence their life and (ix) Their perception toward the institution. Respondents are required to answer the questions on a Likert scale from 1 to 5 Likert whereby (1) represents strongly disagree/least satisfied and (5) represents strongly agree/satisfied.

3.3.1 Demographic Analysis

A total of 177 postgraduate students participated in the study. Table 3.13 shows the demographic profile of the students. It can be seen that there are 22 PhD students and 155 Masters students whom participated in this study in which 88% are local students and 12% are international students.

Table 3. 13 Demographic profile of the respondents

Demographic	Category	Frequency	Percent
Gender	Male	64	36%
	Female	92	52%
	No data	21	12%
	Total	177	100%
Age	21 - 30 Years Old	94	53%
	31 - 40 Years Old	51	29%
	41 - 50 Years Old	10	6%
	51 - 60 Years Old	1	1%
	No data	21	12%
	Total	177	100%
Programme Level	PhD	22	12%
	Master	155	88%
	Total	177	100%
Category	Local	156	88%
	International	21	12%
	Total	177	100%

3.3.2 Descriptive Analysis

Descriptive statistics of the 9 factors are as shown in Table 3.14. Using a scale 1-5, acceptable mean should be 4 and anything below 4 is considered not satisfactory. It can be seen that the highest ranking factors with average 4.40 are the study factor, evaluation

system, Instructor (Lecturer / Supervisor / Facilitator), Skill/Knowledge Gained From Your Study and How Education In Educational Institution Influence Your Life.

Table 3. 14 Descriptive Analysis of the factors

Factors	Department In Charge	Min	Max	Avg	Rank
1 Study	Faculty	1.00	5.00	4.40	1
2 Curricular	Faculty	1.00	5.00	4.37	3
3 Evaluation System	Faculty	1.00	5.00	4.40	1
4 Career	JHEPA	1.00	5.00	4.37	3
5 Instructor (Lecturer / Supervisor / Facilitator)	Faculty	1.62	5.00	4.40	1
6 Infrastructure Facility	JHEPA, Library, PTMK, Faculty	1.40	5.00	4.32	4
7 Skill/Knowledge Gained From Your Study	Faculty	1.62	5.00	4.40	1
8 How Education In Educational Institution Influence Your Life?	Faculty	1.58	5.00	4.40	1
9 Your Perception Toward The Institution	General	1.00	5.00	4.39	2

Table 3.15 showed the overall mean for each factor. It can be seen that most of the postgraduate students are satisfied with all 9 factors as the mean are all above 4. However, the least satisfied with all of the factors are the students from the Faculty of Manufacturing Engineering (FKP) with mean all below 4.

Table 3.15 Overall mean for each factor

FACTOR	FSKPP	FKM	FKKSA	FIM	FKEE	FIST	FKP	PBMSK	FTEK	FKASA
1. Curricular	4.44	4.36	4.35	4.49	4.39	4.43	3.94	4.67	4.45	4.50
2. Evaluation System	4.50	4.35	4.38	4.51	4.36	4.38	3.97	4.44	4.56	4.67
3. Career	4.44	4.36	4.35	4.49	4.39	4.43	3.94	4.67	4.45	4.50
4. Instructor(Lecturer / Supervisor / Facilitator)	4.43	4.46	4.38	4.51	4.45	4.52	3.98	4.72	4.51	4.73
5. Infrastructure Facility	4.33	4.36	4.28	4.44	4.41	4.51	3.98	4.70	4.52	4.50
6. Skill/Knowledge Gained From Your Study	4.43	4.46	4.38	4.51	4.45	4.52	3.98	4.72	4.51	4.73
7. Study	4.45	4.38	4.38	4.52	4.39	4.39	3.98	4.58	4.46	4.63
8. How Education In Educational Institution Influence Your Life?	4.44	4.45	4.37	4.51	4.46	4.48	3.97	4.69	4.50	4.71
9. Your Perception Toward The Institution	4.43	4.40	4.36	4.52	4.41	4.48	3.96	4.60	4.47	4.50

Table 3.16 shows the mean for the curricular factors. Overall its shows that most of the student are satisfied with the curricular activities and also the content of activities prepared by the university. However, there are only a few issues that the students do not agree. For example, the Faculty of Manufacturing Engineering (FKP) has a lower mean value on Appropriateness of Content (3.80), University/Institution Compulsory Subjects (3.90), Diversity of Co-curriculum Subjects Offered (3.90) and the process of Preparing Student for Employment (3.90).

Table 3.16 Mean of Curricular

CURRICULAR	FKM	FKKSA	FIM	FKEE	FIST	PBMSK	TEK	FKASA	FKP	FSKKP
1. Appropriateness of Content Balance Between Theory	4.25	4.31	4.50	4.36	4.29	4.33	4.50	5.00	3.80	4.50
2. And Practice / Applications / Clinical Components	4.46	4.42	4.56	4.36	4.57	4.67	4.67	4.50	4.10	4.57
3. Industrial Training Programme / Practicum (If Applicable)	4.33	4.43	4.47	4.36	4.29	4.33	4.50	4.50	4.00	4.43
4. Compulsory Co-Curriculum Subjects	4.50	4.38	4.53	4.50	4.43	5.00	4.17	4.50	4.00	4.29
5. University / Institution Compulsory Subjects	4.45	4.29	4.56	4.50	4.83	4.67	4.50	4.00	3.90	4.38
6. Diversity of Co-Curriculum Subjects Offered	4.22	4.28	4.41	4.38	4.20	4.67	4.33	4.50	3.90	4.40
7. Preparing Student For Employment	4.32	4.33	4.41	4.31	4.43	5.00	4.50	4.50	3.90	4.50

Table 3.17 shows the mean for evaluation system. Most of the students are satisfied with the stability (transparent, fair and easy to understand) of the evaluation system, the coursework marking (assignment/test/practical, etc.) as well as the examination scoring with the most of the mean values are above 4.0.

Table 3.17 Mean of Evaluation System

EVALUATION SYSTEM		FKM	FKKSA	FIM	FKEE	FIST	PBMSK	FTEK	FKASA	FKP	FSKKP
1	Stable (Transparent, Fair And Easy To Understand)	4.25	4.31	4.50	4.36	4.29	4.33	4.50	5.00	3.80	4.50
2	Coursework Marking (Assignment / Test / Practical, Etc.)	4.46	4.42	4.56	4.36	4.57	4.67	4.67	4.50	4.10	4.57
3	Examination Scoring	4.33	4.43	4.47	4.36	4.29	4.33	4.50	4.50	4.00	4.43

Table 3.18 shows the mean for career. Based on the results, only Faculty of Manufacturing Engineering (FKP) are not satisfied with the sub-item information on jobs & career opportunities (3.80), information in continuing education (3.90), on-campus employment opportunities (3.90) and on-campus recruitment process by employer (3.90).

Table 3.18 Mean of Career

CARRER		FKM	FKKSA	FIM	FKEE	FIST	PBMSK	FTEK	FKASA	FKP	FSKKP
1.	Information On Jobs & Career Opportunities	4.25	4.31	4.50	4.36	4.29	4.33	4.50	5.00	3.80	4.50
2.	Assistance In Interview Skills	4.46	4.42	4.56	4.36	4.57	4.67	4.67	4.50	4.10	4.57
3.	Assistance In Preparation For Job Application (Resume, Letter Of Application, Etc.)	4.33	4.43	4.47	4.36	4.29	4.33	4.50	4.50	4.00	4.43
4.	Assistance In Job Search	4.50	4.38	4.53	4.50	4.43	5.00	4.17	4.50	4.00	4.29
5.	Information In Continuing Education	4.45	4.29	4.56	4.50	4.83	4.67	4.50	4.00	3.90	4.38
6.	On-Campus Employment Opportunities	4.22	4.28	4.41	4.38	4.20	4.67	4.33	4.50	3.90	4.40
7.	On-Campus Recruitment Process By Employer	4.32	4.33	4.41	4.31	4.43	5.00	4.50	4.50	3.90	4.50

Table 3.19 shows the mean value of instructor (lecturer/ supervisor/facilitator). It can be seen that majority of the students are satisfied with the supervision given. The highest mean is from the Faculty of Civil Engineering & Earth Resources (FKASA) whereby the mean value for sub-item Balance Between Theory And Practical Skills is 5.0. However, Faculty of Manufacturing Engineering (FKP) is not satisfied with the same sub-item whereby the mean value is 3.80. FKP is also not satisfied with other sub-items which are Exposure For The Student In The Field Of

Study (3.90), Lecture Presentation And Teaching Quality (3.90), Online Interaction (3.90) and Quality Of Academic Advising System (3.80).

Table 3.19 Mean of Instructor (Lecturer/ Supervisor/ Facilitator)

INSTRUCTOR (LECTURER / SUPERVISOR / FACILITATOR)	FKM	FKKSA	FIM	FKEE	FIST	PBMSK	FTEK	FKASA	FKP	FSKPP
1. Balance Between Theory And Practical Skills	4.25	4.31	4.50	4.36	4.29	4.33	4.50	5.00	3.80	4.50
2. Interaction With Student	4.46	4.42	4.56	4.36	4.57	4.67	4.67	4.50	4.10	4.57
3. Creative And Innovative In Teaching/Supervising	4.33	4.43	4.47	4.36	4.29	4.33	4.50	4.50	4.00	4.43
4. Ability To Relate Teaching/Supervising With The Latest Industrial Practices	4.50	4.38	4.53	4.50	4.43	5.00	4.17	4.50	4.00	4.29
5. Latest Knowledge Exposure For The Student In The Field Of Study	4.45	4.29	4.56	4.50	4.83	4.67	4.50	4.00	3.90	4.38
6. Lecture Presentation And Teaching Quality	4.22	4.28	4.41	4.38	4.20	4.67	4.33	4.50	3.90	4.40
7. Online Interaction	4.32	4.33	4.41	4.31	4.43	5.00	4.50	4.50	3.90	4.50
8. Qualification	4.62	4.44	4.65	4.57	4.57	5.00	4.80	5.00	4.10	4.38
9. Bahasa Melayu Communication Skill	4.59	4.40	4.50	4.57	4.50	4.67	4.50	5.00	4.00	4.48
10. English Communication Skill	4.60	4.41	4.56	4.50	4.57	4.67	4.50	5.00	4.00	4.42
11. Quality Of Academic Advising System	4.51	4.42	4.47	4.57	4.57	4.67	4.50	5.00	3.80	4.54
12. Instructor Easy Access To After Lectures / Formal Time	4.56	4.31	4.56	4.50	4.57	4.67	4.50	5.00	4.11	4.43
13. Academic Advisor (Helpful,Care, Easy To Discuss)	4.58	4.47	4.47	4.38	5.00	5.00	4.67	5.00	4.11	4.32

Table 3.20 shows the mean value of infrastructure facility. It can be seen that majority of the students are satisfied with the infrastructure facility provided with mean value 4.0 and above. However, Faculty of Manufacturing Engineering (FKP) are not satisfied with certain sub-items whereby the mean value is 4.0 and below and they are Overall Library Facility And Services, Services Of Library Staff, Online Library Resources, Online Library Services (Borrowing/Returning Books), Cafeteria And Canteen Facility, Campus Book Store Facility and Conducive Study Of Service Space.

Table 3.20 Mean of Infrastructure Facility

INFRASTRUCTURE FACILITY	FKM	FKKSA	FIM	FKEE	FIST	PBMSK	FTEK	FKASA	FKP	FSKKP
1. Overall Library Facility And Services	4.25	4.31	4.50	4.36	4.29	4.33	4.50	5.00	3.80	4.50
2. Comfortable And Conducive Study Environment	4.46	4.42	4.56	4.36	4.57	4.67	4.67	4.50	4.10	4.57
3. Total Resources / Materials (Reference Books, Etc)	4.33	4.43	4.47	4.36	4.29	4.33	4.50	4.50	4.00	4.43
4. Library Operating Hours	4.50	4.38	4.53	4.50	4.43	5.00	4.17	4.50	4.00	4.29
5. Services Of Library Staff	4.45	4.29	4.56	4.50	4.83	4.67	4.50	4.00	3.90	4.38
6. Online Library Resources	4.22	4.28	4.41	4.38	4.20	4.67	4.33	4.50	3.90	4.40
7. Online Library Services (Borrowing/Returning Books)	4.32	4.33	4.41	4.31	4.43	5.00	4.50	4.50	3.90	4.50
8. Laboratory (Computer/Sciences), Studio, Kitchen, Workshop, Etc)	4.62	4.44	4.65	4.57	4.57	5.00	4.80	5.00	4.10	4.38
9. Lecture/Tutorial Room Facility	4.59	4.40	4.50	4.57	4.50	4.67	4.50	5.00	4.00	4.48
10. Sports/Recreational Facility	4.60	4.41	4.56	4.50	4.57	4.67	4.50	5.00	4.00	4.42
11. Cafeteria And Canteen Facility	4.51	4.42	4.47	4.57	4.57	4.67	4.50	5.00	3.80	4.54
12. Hostel Accommodation	4.56	4.31	4.56	4.50	4.57	4.67	4.50	5.00	4.11	4.43
13. Transportation Facility	4.58	4.47	4.47	4.38	5.00	5.00	4.67	5.00	4.11	4.32
14. Medical Centre/Clinic	4.22	4.30	4.31	4.54	4.29	4.67	4.60	4.00	4.00	4.32
15. Parking Space	4.03	3.78	4.44	4.14	4.33	4.67	4.20	4.00	4.22	3.77
16. Campus Safety	4.10	4.03	4.31	4.21	4.71	4.67	4.60	4.00	4.10	4.22
17. Online Integrated Learning	4.23	4.17	4.23	4.36	4.43	4.67	4.60	4.00	4.00	4.30
18. Campus Book Store Facility	4.05	4.00	4.07	4.14	4.43	4.67	4.60	4.00	3.70	3.91
19. Comfortable And Conducive Study Of Service Space	4.18	4.25	4.38	4.36	4.43	4.67	4.60	4.00	3.90	4.09
20. On Campus ICT Facility	4.41	4.28	4.38	4.57	4.71	4.67	4.60	4.50	4.00	4.35

Table 3.21 shows the mean value of skill/knowledge gained from the study. It can be seen that majority of the students are satisfied with the skill/knowledge gained from the study provided by the university with mean value 4.0 and above. However, Faculty of

Manufacturing Engineering (FKP) are not satisfied with certain sub-items whereby the mean value is 4.0 and below and they are General ICT Skill, Interpersonal Communication Skills, Critical And Creative Thinking Skills, Problem Solving Skills and General Knowledge And Current Issues.

Table 3.21 Mean of Skill / Knowledge Gained from Study

<i>SKILL/KNOWL E-DGE GAINED FROM YOUR STUDY</i>		FKM	FKKSA	FIM	FKEE	FIST	PBMSK	FTEK	FKP	FSKPP
1.	Programing Skills	4.56	4.31	4.56	4.50	4.57	4.67	4.50	4.11	4.43
2.	Innovation And Creativity Skills	4.58	4.47	4.47	4.38	5.00	5.00	4.67	4.11	4.32
3.	General ICT Skill	4.25	4.31	4.50	4.36	4.29	4.33	4.50	3.80	4.50
4.	Bahasa Melayu	4.46	4.42	4.56	4.36	4.57	4.67	4.67	4.10	4.57
5.	English	4.33	4.43	4.47	4.36	4.29	4.33	4.17	4.00	4.43
6.	Third Language	4.50	4.38	4.53	4.50	4.43	5.00	4.50	4.00	4.29
7.	Interpersonal Communication Skills	4.45	4.29	4.56	4.50	4.83	4.67	4.33	3.90	4.38
8.	Critical And Creative Thinking Skills	4.22	4.28	4.41	4.38	4.20	4.67	4.50	3.90	4.40
9.	Problem Solving Skills	4.32	4.33	4.41	4.31	4.43	5.00	4.80	3.90	4.50
10.	Analytical/Analyzing Skills	4.62	4.44	4.65	4.57	4.57	5.00	4.50	4.10	4.38
11.	Team Work	4.59	4.40	4.50	4.57	4.50	4.67	4.50	4.00	4.48
12.	Inculcation Of Good Values	4.60	4.41	4.56	4.50	4.57	4.67	4.50	4.00	4.42
13.	Exposure To General Knowledge And Current Issues	4.51	4.42	4.47	4.57	4.57	4.67	4.50	3.80	4.54

Table 3.22 shows the mean value of study. It can be seen that majority of the students are satisfied with the study provided by the university with mean value 4.0 and above. However, Faculty of Manufacturing Engineering (FKP) are not satisfied with one sub-item which is Infrastructure Facility with mean value 3.80.

Table 3.22 Mean of Study

STUDY	FKM	FKKSA	FIM	FKEE	FIST	PBMSK	TEK	FKP	FSKKP
1. Infrastructure Facility Knowledge	4.25	4.31	4.50	4.36	4.29	4.33	4.67	3.80	4.50
2. Instructor (Lecturer/Supervisor / Facilitator)	4.46	4.42	4.56	4.36	4.57	4.67	4.50	4.10	4.57
3. Soft Skill Applied During The Study Communication	4.33	4.43	4.47	4.36	4.29	4.33	4.17	4.00	4.43
4. Skills Applied During The Study	4.50	4.38	4.53	4.50	4.43	5.00	4.50	4.00	4.29

Table 3.23 shows the mean value of educational institution will influence life. It can be seen that majority of the students are satisfied with mean value 4.0 and above. However, Faculty of Manufacturing Engineering (FKP) are not satisfied with certain sub-item which are Building Self Confidence with mean value 3.80, Increase The Level Of Interest To Pursue Study with mean value 3.90, More Sensitive On Current Issue/Development with mean value 3.90, Be Independent with mean value 3.90 and Able To Work In A Team with mean value 3.80.



Table 3.23 Mean of Educational Institution will Influence Life

<i>HOW EDUCATION IN EDUCATIONAL INSTITUTION INFLUENCE YOUR LIFE?</i>		FKM	FKKSA	FIM	FKEE	FIST	PBMSK	TEK	FKASA	FKP	FSKPP
1.	Building Self Confidence	4.25	4.31	4.50	4.36	4.29	4.33	4.67	5.00	3.80	4.50
2.	Increase Self Maturity	4.46	4.42	4.56	4.36	4.57	4.67	4.50	4.50	4.10	4.57
3.	Development Of Self Esteem	4.33	4.43	4.47	4.36	4.29	4.33	4.17	4.50	4.00	4.43
4.	Becoming More Knowledgeable	4.50	4.38	4.53	4.50	4.43	4.67	4.50	4.50	4.00	4.29
5.	Increase The Level Of Interest To Pursue Study	4.45	4.29	4.56	4.50	4.83	4.67	4.33	4.00	3.90	4.38
6.	More Sensitive On Current Issue/Development	4.22	4.28	4.41	4.38	4.20	5.00	4.50	4.50	3.90	4.40
7.	Be Independent Ability To Think	4.32	4.33	4.41	4.31	4.43	5.00	4.80	4.50	3.90	4.50
8.	Critically And Creatively	4.62	4.44	4.65	4.57	4.57	4.67	4.50	5.00	4.10	4.38
9.	More Prepared For Employment And The Real World	4.59	4.40	4.50	4.57	4.50	4.67	4.50	5.00	4.00	4.48
10.	Problem Solving And Decision Making Ability	4.60	4.41	4.56	4.50	4.57	4.67	4.50	5.00	4.00	4.42
11.	Able To Work In A Team	4.51	4.42	4.47	4.57	4.57	4.67	4.50	5.00	3.80	4.54
12.	Able To Communicate Effectively	4.56	4.31	4.56	4.50	4.57	4.33	4.50	5.00	4.11	4.43

Table 3.24 shows the mean value of perception towards institution. It can be seen that majority of the students are satisfied with mean value 4.0 and above. However, Faculty of Manufacturing Engineering (FKP) are not satisfied with certain sub-items which are Institution's Reputation For Research with mean value 3.80 and General Perception with mean value 3.90.

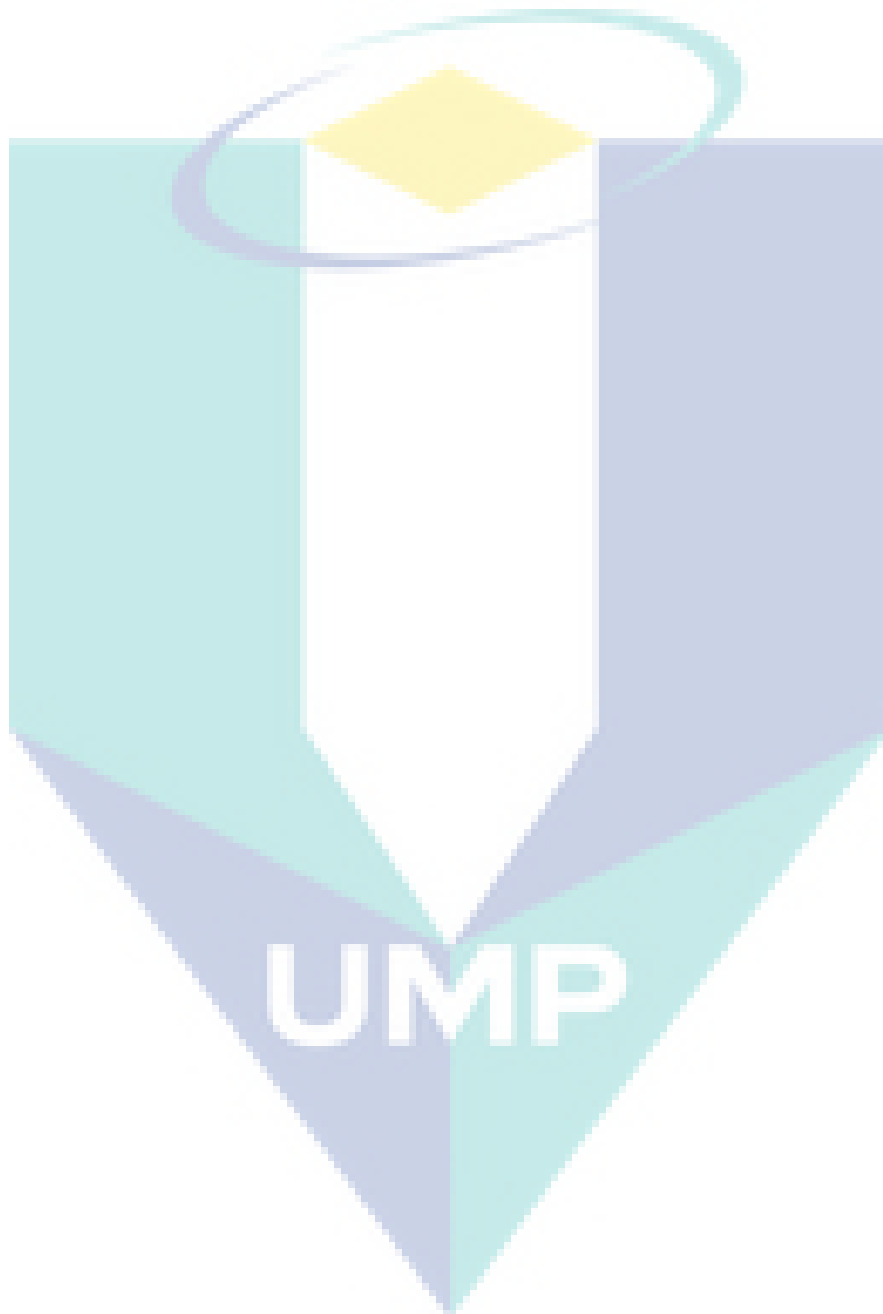
Table 3.24 Mean of Perception Towards Institution

YOUR PERCEPTION TOWARD THE INSTITUTION		FACULTY										
		FKM	FKKSA	FIM	FKEE	FIST	PBMSK	TEK	FKASA	FKP	FSKKP	
1.	Institution's Reputation For Research	4.25	4.31	4.50	4.36	4.29	4.33	4.50	5.00	3.80	4.50	
2.	Institution's Reputation As A Quality Educational Provider	4.46	4.42	4.56	4.36	4.57	4.67	4.67	4.50	4.10	4.57	
3.	Institution's Reputation As Excellent Academic Institution	4.33	4.43	4.47	4.36	4.29	4.33	4.50	4.50	4.00	4.43	
4.	Your Field Of Study Reputation	4.50	4.38	4.53	4.50	4.43	5.00	4.17	4.50	4.00	4.29	
5.	General Perception	4.45	4.29	4.56	4.50	4.83	4.67	4.50	4.00	3.90	4.38	

3.4 Summary

This chapter discusses the findings of EPAT survey and alumni survey. Overall, results show that the postgraduate students are satisfied with the services provided and the supervision and skills given to them. However, in terms of supervision improvements can be made by supervisors, in terms of time allocated for their supervisees and supervisors should encourage their supervisees to raise concerns that they are facing with respect to their research. Improvements can also be made in terms of teaching opportunities to the postgraduate students.

Other suggestions by students include to improve the campus books store facility and cafeteria and canteen facility. IPS have given the results of the findings that need improvements to the related parties of the university.



CHAPTER 4

IPS RESEARCH METHODOLOGY COURSE

4.1 Introduction

IPS has offered the Research Methodology course to assist the postgraduate research students in conducting their research ever since 2004. Over the years, improvements have been made to the course beginning from attending a few days for the training until the requirement for the postgraduate research students to take it over one semester.

In 2016, IPS together with lecturers from various faculties collaborated to write a module for the Research Methodology course. In 2017, the Research Methodology course was offered via Massive Online Open Courses (MOOCS). In 2018, the Research Methodology course was offered by combining both online and face to face interaction.

Figure 1.1 shows the journey of development of the Research Methodology Course.

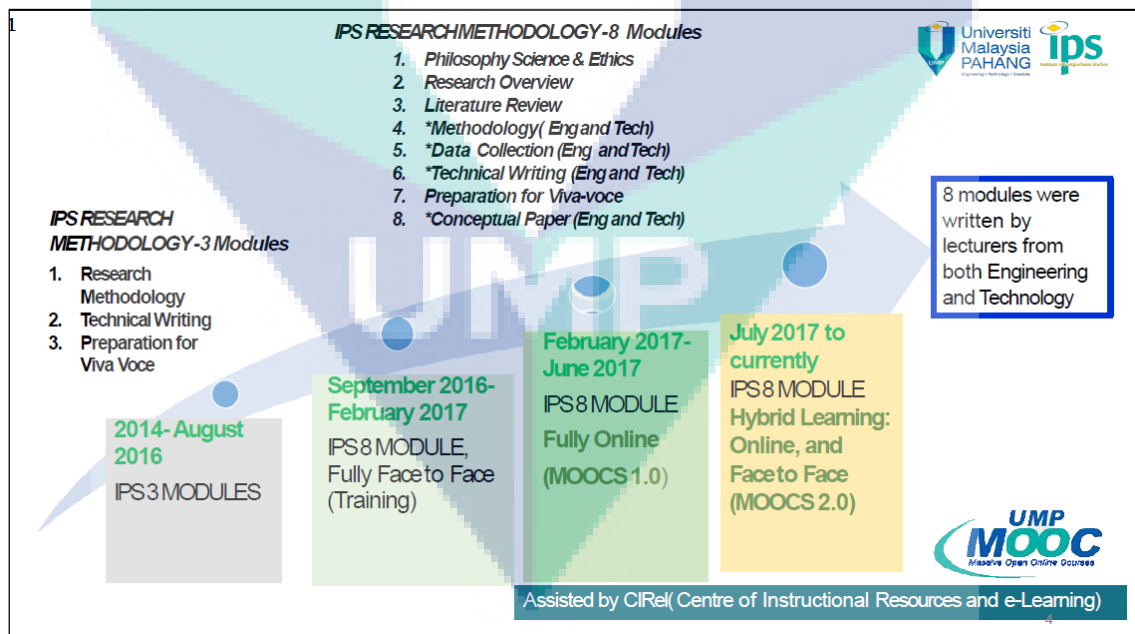


Figure 4.1 Journey of development of the Research Methodology Course

Explanation of the current Research Methodology Course will be explained in the next section.

4.2 Postgraduate Research Methodology Course

Postgraduate Research Methodology course is specially designed and developed by Institute of Postgraduate Study UMP to assist all Master's and PhD students in order to achieve excellence in postgraduate study. There are two modes of learning of the Research Methodology course, which are self-learning material, and face to face interaction. For the self-learning material, the student is required to watch videos related to the module, go through the slides and module books so that the student is able to answer the quiz given. While for face to face interaction, students are compulsory to attend the 2 hours class as in schedule.

The evaluation progress schedule are as below:

- Week 1-14 : Students will access Online Video, Slides and Quiz
- Week 10-14 : Online Face to Face Interaction with the instructor
- Week 19 : Students can review their overall progress in the IPS Online System

The Research Methodology course comprise of 8 modules. The 8 Modules is one of the Institute of Postgraduate Studies (IPS) initiatives in helping students to understand ways and means to carry out research at Master and PhD level. The students must complete their courses before their proposal defense. There are 2 sets of 8 modules provided by IPS in accordance with the technology and engineering cluster. These 8 modules are intended to help students in conducting systematic research owing to its utmost importance in determining the effectiveness and efficiency of the research process. The 8 modules will help students to understand the research problem and identify the areas of research. The modules also assist students on how to write a literature review in order to understand how other researchers' approach, define or manage the problem in order to keep students to understand the methods of collecting data in an organized and controlled way to make conclusions. Therefore, IPS hopes that the modules will be able to provide some insight and benefits students in conducting research at Master and PhD level.

4.3 8 Modules

The rebranding of 8 modules has been approved by the UMP Senate in February 2016. The 8 modules are shown in Table 4.1

Table 4.1 Types of Modules

Technology	Engineering
Philosophy of Science and Ethics in Research	Philosophy of Science and Ethics in Research
Research Overview	Research Overview
Literature Review	Literature Review
Methodology (Technology)	Methodology (Engineering)
Data Collection and Analysis (Technology)	Data Collection and Analysis (Engineering)
Scientific Writing (Technology)	Scientific Writing (Engineering)
Preparation for Viva-Voce	Preparation for Viva-Voce
Conceptual Paper (Technology)	Conceptual Paper (Engineering)

The modules and the name of the module authors are as shown in Figure 1.1







Figure 4.2 Topic of 8 modules and the authors of the modules

4.4 Description for Each Module

4.4.1 Philosophy of Science and Ethics in Research

This module provides an overview concerning philosophy of science and how it relates with the purpose of knowledge development process through education. It introduces the concept of philosophy and its underlying questions. It is crucial to understand this concept because knowledge development through R&D occurs intensively at higher education level. Therefore, this module will discuss the reality of existence, epistemology of knowledge, ethics and aesthetic and the inter-connection between the topics. Knowledge or science development process that is not properly guided or fails to consider ethical issues will result in making it worthless. Therefore, this module also integrates lessons in understanding ethics in quantitative and qualitative research. This module is developed for postgraduate students in higher education institutions, in particular UMP to produce scientists who are able to contribute their findings in science and technology significantly and ethically to the society as well as the civilization process of this country.

4.4.2 Research Overview

The objective of this course is to provide a guide to postgraduate students as they embark on their research journey. In this introduction, the module will point out some features of learning about research overview and discuss how to use this report in research. As postgraduate students of UMP, students will be familiar with the idea of research being a multi-paradigm discipline whereby, research does not have a single paradigm of interlinked theory and method. Presently there have been concerns on the philosophical basis of research and the choice of appropriate research methods. Research can be carried out in two main methods and they are qualitative and quantitative research strategy, thus we will be considering quantitative and qualitative approaches separately. However as far as the practice of research is concerned, it is also mandatory to know that the choice of strategy is based on the research question and what type of answers are available to be pursued in the research.

4.4.3 Literature Review

This module presents a step-by-step guidance for conducting a literature review for postgraduate research at both Master and PhD level. After introducing what literature review is, it starts from selecting a review concept, searching literature, analyzing/synthesizing literature, to writing a literature as well as listing the references. The module ends with evaluating good literature review and some ethical issues.

The logo of UMP (Universiti Malaysia Perlis) is a large, stylized letter 'V' shape. The left side of the 'V' is light blue, the right side is light green, and the bottom point is a darker blue. The letters 'UMP' are written in white, bold, sans-serif font across the center of the 'V'.

4.4.4 Methodology

4.4.4.1 Technology Cluster

This module is developed to assist students in the Research Methodology section for the Social Sciences. This module would mainly cover the research methodology section, although some basic areas such as the problem statement, research question, and hypothesis would also be covered briefly. Students would be able to differentiate between a quantitative research and a qualitative research. Through this module, students would have a basic understanding of what goes into research methodology and its components. One of the features of this module is also research design, where students would be able to choose which design within quantitative or qualitative research methodology that would suit their research purpose. This module consists of theories, examples and student activities consisting of matching and scenarios laid out so that students are able to practice what they have learned.

4.4.4.2 Engineering Cluster

Research methodology is a very important aspect of research. This module provides an overview and general steps involved in research methodology. There are three chapters in this module:

- i. Research Problem (Chapter 1)
 - This chapter will explain the techniques of defining a research problem and the construction of hypothesis and objectives
- ii. Research Design (Chapter 2)
 - This chapter presents the details of research design including the types of research methodology, identification of variables, materials and instruments in the research process
- iii. Research Implementation (Chapter 3)
 - This chapter deals with the implementation of research. It provides the methods and types of data collection and the concept of validity and reliability.

At the end, this module will provide the researcher the way to systematically solve the research problem.

4.4.5 Data Collection and Analysis

4.4.5.1 Technology Cluster

This module is specially tailored to assist postgraduate students of science, engineering and technology in data collection and analysis. The content in this module is primarily focused on the applications of various statistical techniques for quantitative and categorical data. Through this course, students are able to learn and directly apply the statistical knowledge in the research or problems being studied. This module provides examples to show connections between theory and application in scientific research. The materials in this module also integrate well with computer software packages such as Statistical Package for Social Sciences (SPSS).

There are three chapters in this module. Chapter 1 covers the data collections which encompass the sampling techniques and the required sample sizes for research. It also covers the data collection methods for quantitative and qualitative approaches. It also discusses on the data quality, validity and reliability of the research instrument. Next, chapter 2 primarily focuses on the statistical software used throughout this module such as SPSS. The reader is introduced with the basics of SPSS before analyzing the data. Finally, chapter 3 is the data analysis section that begins with descriptive statistics. It continues with the inferential statistics which cover hypothesis testing, normality test, t-test, analysis of variance (ANOVA), techniques correlations, regressions and analysis of categorical data.

4.4.5.2 Engineering Cluster

This module is specially tailored to assist postgraduate students of science, engineering and technology in data collection and analysis. The content in this module are primarily focused on the application of various statistical techniques for quantitative and categorical data. Throughout this course, students are able to learn and directly apply the statistical knowledge in the research or problem being studied.

There are seven chapters in this module. Topic 1 covers statistical problem-solving methodology. Topic 2 discusses on summarizing quantitative and qualitative data using descriptive and graphical summary. Topic 3 presents the terms and procedure of hypothesis testing for one population parameter. The parameters involved are population mean, population variance, and population proportion. Topic 4 is on statistical analysis for two populations and parameters that are discussed in topic 3. Topic 5 covers some of the commonly used methods of experimental design that are a one-way and two-way analysis of variance which is covered extensively via computer software. Topic 6 discusses the concepts of the goodness of fit test and contingency table in dealing with categorical or frequency data. Finally, topic 7 covers linear regression and correlation, for both single and multiple cases.

4.4.6 Scientific Writing

4.4.6.1 Technology Cluster

This module discusses scientific writing covering what is scientific writing, and how to prepare, write and publish scientific papers. The module contains six topics namely:

- ◆ *Section 1: Importance of Scientific Writing* explains the needs and purpose of writing a scientific article in research and academic field;
- ◆ *Section 2: Types of Scientific Writing* discusses several common types of scientific papers;
- ◆ *Section 3: Structure of a Good Scientific Manuscript* outlines, the attributes and characteristics of a good scientific manuscript;
- ◆ *Section 4: Style of Language* explains the use of correct and appropriate English language expressions and structures in writing scientific papers;
- ◆ *Section 5: Ethics in scientific writing* that reflects the common ethical issues in writing scientific papers;
- ◆ *Section 6: Getting the scientific manuscript published* highlights by using the proper process of journal submission and publication.

4.4.6.2 Engineering Cluster

This module provides an overview on how to write a good scientific manuscript. There are 5 main sections outlined in this module which includes:

- ◆ *Section 1: Importance of Scientific Writing* which explains the needs and purpose of writing a scientific article in research and academic field;
- ◆ *Section 2: Types of Scientific Writing* which discusses the different types of writing and how to present them;
- ◆ *Section 3: Content of a Good Scientific Manuscript* which explains on the attributes of good content outlined and used in manuscripts;
- ◆ *Section 4: Style of Language* which emphasize on the usage of proper English language in terms of nouns and punctuation;
- ◆ *Section 5: Ethics in Scientific Writing* which reflects in details the common ethical issues in writing research articles

4.4.7 Preparation for Viva-Voce

This module delivers a stepwise preparation for the oral examination which is the viva voce of research candidates. It presents the need for such examination and guiding the users towards achieving it successfully. It is essential to understand the very need for viva voce at an earlier stage possible, in order to cater for the research activities towards satisfying its needs. There are many misconceptions about the viva voce for instance, the belief that it is a 'defence' which erroneously positions the students in a defensive manner throughout the oral session. With a defensive attitude, it is not possible for the students to discuss matters openly with the examiners. In such a situation, it is not possible to have a healthy academic engagement with the experts of the field which is the examiners. For this reason, this module directs the users to have a true understanding of viva voce and equips them with all the necessary skills to celebrate their enhanced knowledge.

4.4.8 Conceptual Paper

4.4.8.1 Technology Cluster

This module focuses on what is meant by a conceptual paper and attempts to explain and illustrate the components of a conceptual paper. Components include problem statement, literature review, theory, conceptual framework and hypotheses development. The module concludes with an illustration of a conceptual paper.

4.4.8.2 Engineering Cluster

This module focuses on what is meant by a conceptual paper and attempts to explain and illustrate the components of a conceptual paper. Components include abstract, introduction, problem statement and literature review.

4.5 IPS Research Methodology MOOC Assessment Guideline

Table 4.2 shows the assessment of Research Methodology course and Figure 4.3 summarizes the components of assessment.

Table 4.2 Component in Quiz and Face to Face Interaction

Quiz	Face to face Interaction
<ul style="list-style-type: none">➤ Online Assessment using I-Spring platform	<ul style="list-style-type: none">➤ 2 hours compulsory interactive online session
<ul style="list-style-type: none">➤ The student can take the assessment at anytime and anywhere.	<ul style="list-style-type: none">➤ The session is using ZOOM platform.
<ul style="list-style-type: none">➤ The students are given a maximum of 6 times to attempt the quiz	<ul style="list-style-type: none">➤ The session will be conducted between week 10 to week 14 every semester on Wednesday & Thursdays
<ul style="list-style-type: none">➤ Students are not able to meet the required passing mark after the maximum attempt given and are required to write a letter to appeal to the Dean of IPS through faculty dean.	<ul style="list-style-type: none">➤ Students are required to fill in the attendance form after the online interaction session
<ul style="list-style-type: none">➤ The assessment is divided into two (2) sections which are: Section A- True or False Question Section B- Multiple Choice	<ul style="list-style-type: none">➤ Those who are unable to attend the face to face interaction session on that particular semester, he/she is required to attend it on the next upcoming semester.

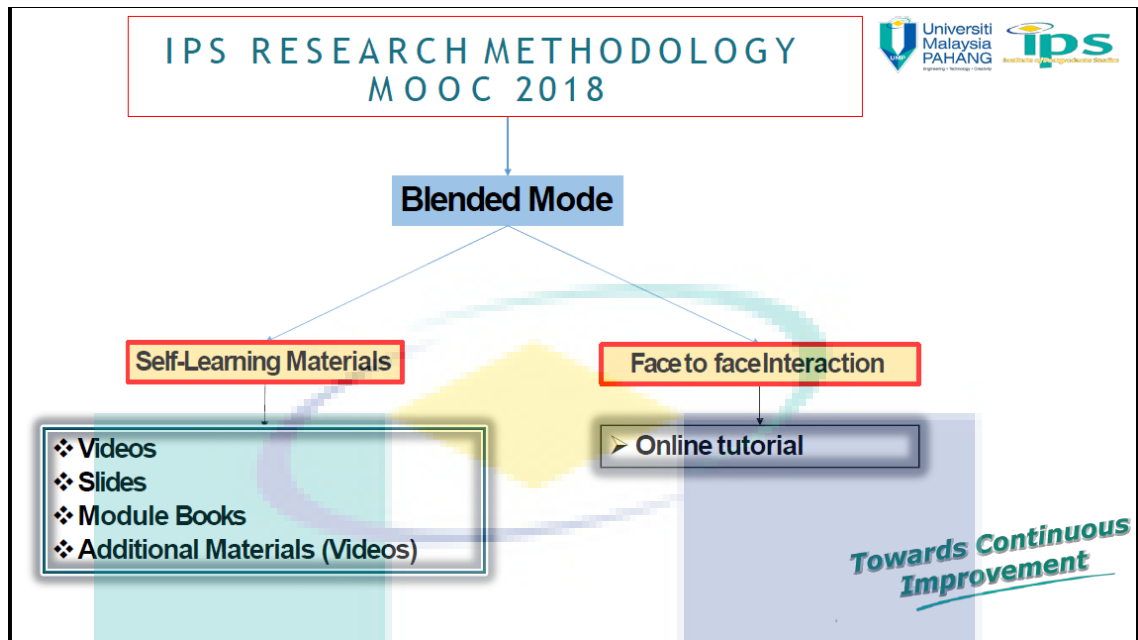
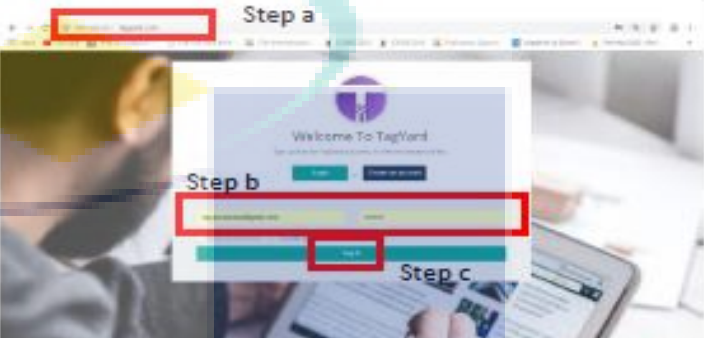
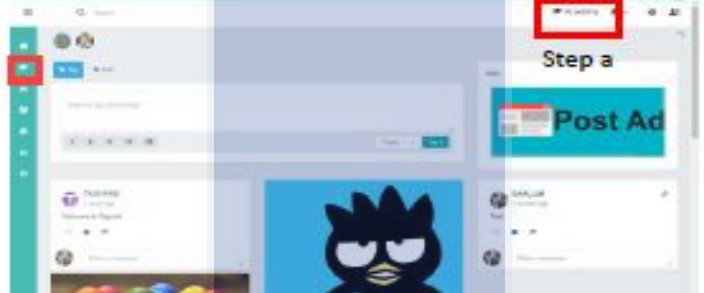



Figure 4.3 The components of assessment of Research Methodology Course

4.6 Process flow of Face to Face Interaction Class

Table 4.3 shows the procedure that the student has to go through in order to register and access the online learning material. Students are required to complete all 8 modules before their proposal defence.

Table 4.3 Procedure of face to face interaction class

Step	Procedures	Reference
1	After your registration with IPS, you will be automatically enrolled to the IPS MOOC course (either Engineering or Technology approach)	
2	<p>Step a : Go to www.tagyard.com</p> <p>Step b : key in your user ID (registered email) and password (IC number or passport number)</p> <p>Step c : Click LOG IN</p>	
3	<p>Once you successfully sign in, you will reach to your social page.</p> <p>Step a : Click ACADEMY to access Academic dashboard</p>	
4	<p>In the academic dashboard page,</p> <p>Step a : update profile picture</p> <p>Step b : update cover picture</p> <p>Step c : update personal information</p> <p>Step d : Click Academic > My Academic</p>	

After click [step d], Click action [Step e] to access the IPS MOOC

Click the IPS MOOC name to access the content and assessment [step f]

Click course progress [step g] to check your progress

- ☰ (i) – course progress
- ☰ (ii) – progress detail
- ☰ (iii) – learning pattern
- ☰ (iv) – module progress

Click grade book [step h] to check your assessment result.
If you can't submit your result, please print screen and send to ming@ump.edu.my

Step f

Step g (i)

Step h

Step g (ii)

Step g (iii)

Step g (iv)

UMP

Click the title for each sub topic for detail view [step i].

Remember check in to gain your badges of progress [step j]

To begin the ASSESSMENT, click SUB TOPIK [Step k] and then click "start" [step l] to begin the evaluation

p.s. Please make sure you are ready and READ the instruction before click "start" button. Student has maximum 2 attempts and must score 50% and above to pass the self evaluation.

Once student click to begin the assessment, system will open the assessment question paper. Click "START QUIZ" [Step l] and then begin the assessment.

The collage illustrates the following steps:

- Step i:** A video player interface for 'RESEARCH OVERVIEW'. A red box highlights the 'SUB TOPIK' button.
- Step j:** A progress dashboard showing 'All Topics 11' and 'All Topics 12'. Red boxes highlight 'CHECK IN' buttons.
- Step k:** An 'Assessment' section with a list of sub-topics. Red boxes highlight 'SUB TOPIK' buttons.
- Step l:** An 'ASSESSMENT' page for 'Module 2 Assessment'. A red box highlights the 'START QUIZ' button.

A large 'UMP' logo is overlaid on the bottom half of the collage.

Make sure click SAVE button (change from blue into green)

At the end of assessment, Make sure CLICK SUBMIT button to send your answer to IPS MOOC

In your grade book view, **partial marks** will be recorded for T/F answer. The MCQ answer will be further update later. Make sure do regular check at gradebook for latest update

ONLINE INTERACTION
Click Online face to face sub topic [step m]

Remember to check with IPS on face-to-face time table before submit attendance. The schedule will update in the sub topic too

Click online interaction to reach www.zoom.us/join


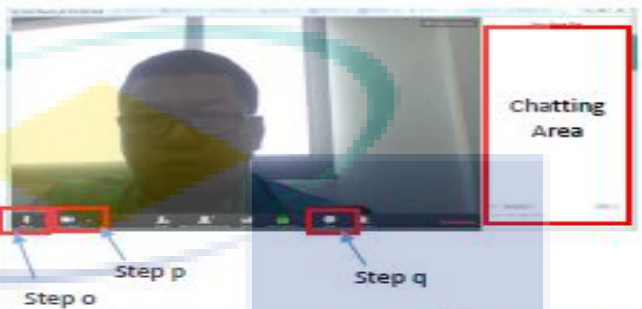


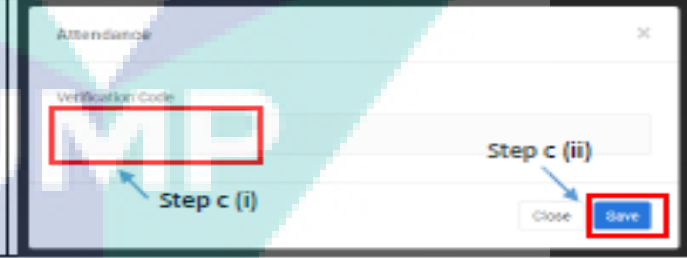
Key in the Meeting ID provide in the interaction description [Step n] and

The image displays three sequential screenshots from a learning management system interface. The top screenshot shows a 'SAVE' button highlighted in blue, with a red box around it and a blue arrow pointing down to a 'SAVE' button highlighted in green. The middle screenshot shows an 'End of Assessment' screen with a 'SUBMIT' button highlighted in blue, with a red box around it. The bottom screenshot shows a 'Grade Book view' table with a '0.00' mark highlighted in red. Below the table is a 'My Assessment Grade Book' section with a '0.00' mark highlighted in red. At the bottom, there is a 'Step m' screen with a 'CLICK ONLINE INTERACTION' button highlighted in red.

Question ID	Question Text	Answer Type	Score	Grade
1	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00
2	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00
3	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00
4	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00
5	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00

Question ID	Question Text	Answer Type	Score	Grade
1	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00
2	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00
3	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00
4	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00
5	Which of the following is NOT a characteristic of a good leader?	MCQ	0.00	0.00

UMP

	<p>update your user name (please use your own name) to begin the online face-to-face with lecturer.</p> <p>SOP for online face-to-face:</p> <ol style="list-style-type: none"> Always turn on video camera. [Step m] Always turn off microphone. [Step o] Only turn on microphone for question and answering period [Step p] Must actively chat with lecturer and student [Step q] (Marks is calculated) <p>Each Online interaction will be recorded as a proof of attendance. Please make sure student always active during the interaction period.</p>	 
<p>5.</p>	<p>Online Attendance</p> <p>In the online face to face, online attendances will be recorded for each session. Follow these steps to check in your attendance.</p> <ol style="list-style-type: none"> Click Attendance Select the correct attendance name by click the action button Key in the verification code and enter <p>p.s. verification will only be announce during the face to face session.</p> <p>Make sure you enter the correct online face to face session according to your timetable.</p>	 
		

4.7 Summary

This chapter has summarized the journey of development pf research methodology course at UMP, explain the 8 modules and procedures in registering for the course.

CHAPTER 5

POSTGRADUATE STUDENT ACADEMIC INTERVENTION SYSTEMS (SIAP)

5.1 Introduction

SIAP was first introduced in 2016 and was opened to all research students that have not done their proposal defense in the first semester for Masters students and second semester for PhD students. It was first initiated by the late Professor Dato' Ishak Ismail, the Director of JHKK (Jabatan Hal Ehwal Korporat dan Kualiti/ Unit of Quality of Corporate Affairs). It was attended by 53 PhD students and 17 Masters students. He was assisted by his JHKK Team and experts from USM.

SIAP programme was then offered in November 2018 and then in 2019 and it was extended to coursework students who do not meet a CPA of 3.0. In 2018 and 2019 around 20 students attended the SIAP program. The research students who attended the programme also included those who received results of TM (Tidak Memuaskan/ Unsatisfactory). TS Dr Muhamad bin Mat Noor has been assisting in the SIAP Programme in 2018 and 2019 together with the other Deputy Dean of Research from the faculties.

5.2 Objective of Programme

The main objective of the SIAP programme is to assist students to graduate on time (iGOT) which is 4 years for PhD and 2 years for Masters coursework and research mode students. It is also to reduce the attrition rates. iGOT will be able to evaluate the efficiency of the effectiveness of teaching and learning and it will also help to reduce the cost to the university if the teaching and learning process is done effectively. Achieving iGOT and decreasing attrition rate will assist UMP to attract more students to join UMP. Detail objective of iGOT can be found in the UNITP Silver Book entitled "Enhancing Academic Productivity and Cost Efficiency" published by Ministry of Higher Education on 24 October 2016. In simple terms, iGOT refers to full time intake students that are able to graduate within 2 years from Masters program and 4 years for PhD. Previously, Ministry of Higher Education introduced GOT (Graduate on Time) which looks at

students who can graduate within 2 years for Masters program and 4 years for PhD despite of their intake year. To achieve iGOT is more difficult than GOT as it associates with intake year of students. Attrition and iGOT have been discussed in Chapter 2 of this report.

Attrition rate is defined as a percentage of full-time students from certain intake groups whom withdraw, deceased, quit or is terminated during the specified period of study.

5.3 Outcome of Programme

Over the years that SIAP programme has been offered, it has been able to show positive results in terms of attrition rate and iGOT. Through surveys conducted and inputs given by lecturers and students on iGOT and attrition issues, the following are some of the inputs obtained. The reasons have been divided into academic and non-academic issues.

- i. Academic:
 - a. Poor academic performance and negative attitude.
 - b. Lack of planning to take the Research Methodology Module required by IPS (Requirement is to pass all modules before proposal defense)
 - c. The time it takes for an external examiner to evaluate a thesis is quite long
 - d. Supervisors and students are unclear about the concept of i-GOT.
 - e. Supervisors are quite occupied with other tasks and thus not able to have much interaction with the students
 - f. Problems with writing the thesis
 - g. Do not have the competency required to do research
 - h. Insufficient grants to attend conferences or recruit students as research assistant
- ii. Non-Academic:
 - a. Quit studies due to financial, family and work commitments
 - b. Insufficient designated space to do research work(eg workstation)
 - c. Limited access to “Instrumentalization” after work
 - d. Expensive equipment to purchase and thus not able to analyse data
 - e. Differing opinions between supervisors and students

- f. Not much use of technology in communication.
- g. Lack of motivation of students due to stress of living (financial constraints)
- h. Distance of laboratory from place of stay. Also, it is not friendly to pregnant ladies and students with disabilities
- i. Lack of management skills including time, stress, money and social life
- j. Low self-esteem
- k. Health problems.

5.3.2 Outcome for first SIAP programme conducted in 2016

For the first SIAP programme, faculties that are involved in this programme includes Faculty of Industrial Management (FIM), Faculty of Industrial Science Technology (FIST), Faculty of Electrical Engineering (FKEE), Faculty of Chemical Engineering & Natural Resources (FKKSA), Faculty of Manufacturing Engineering (FKP), Faculty of Computer System and Software Engineering (FSKKP), Faculty of Engineering Technology (FTEK) and Faculty of Centre for Modern Language & Human Science (PBMSK). Two faculties that are not involved are Faculty of Civil Engineering & Earth Resources (FKASA) and Faculty of Mechanical Engineering (FKM). All postgraduate students who participated, were in the research mode study for both full time and part time. Most of the students who are involved with this programme, are the students who do not go through the proposal defense within the stipulated period by the IPS with the status of 'MM' during the semester before the programme starts.

Table 5.1 shows the number of students whom participated in the SIAP Programme and the results shows that the SIAP programme delivers a positive impact for the students as shown in Table 5.2. On an average, PHD students shows a higher percentage of 76% as compared to Masters students that shows only 24% whom participated in the SIAP programme.

Table 5.1 Number of Student Participated in SIAP Programme

FACULTY	PHD	MASTER	Total
FIM	8	1	9
FIST	10	6	16
FKEE	6	1	7
FKKSA	9	-	9
FKP	3	4	7
FSKKP	4	1	5
FTECH	2	1	3
PBMSK	11	3	14
FKASA	-	-	0
FKM	-	-	0
TOTAL	53 (76%)	17 (24%)	70 (100%)

As shown in Table 5.2, PhD students from all faculties showed a positive impact whereby, students who have undergone SIAP programme have done their proposal defence. There are about 26% of students that have already done their proposal defence before attending the SIAP programme and an increase of 74% PhD students did their proposal defence after attending the SIAP programme. For master students, a positive impact can also be seen for the Faculty of Industrial Management (FIM) with an increase of masters students doing their proposal defence after attending SIAP programme. As for the rest of the faculties, most students did not manage to do their proposal defence even after joining the SIAP programme. These students did not do their proposal defence because they were finding the right and suitable date for their proposal defence and most of the students did not submit their applications for proposal defence to their respected faculties.

Table 5.2 Number of Student done with the Proposal Defense Before and After participating in SIAP Programme

Faculty	PHD		Total (PHD)	Master		Total (Master)
	Before	After		Before	After	
FIM	1	0	1	1	2	3
FIST	1	3	4	2	0	2
FKEE	0	4	4	1	0	1
FKKSA	1	1	2	0	0	0
FKP	2	1	3	4	0	4
FSKKP	0	2	2	0	1	1
FTECH	0	1	1	0	0	0
PBMSK	0	2	2	0	0	0
FKASA	-	-	-	-	-	0
FKM	-	-	-	-	-	0
TOTAL	5 (26%)	14 (74%)	19 (100%)	8 (73%)	3 (27%)	11 (100%)

According to Figure 5.1, the highest percentage of students that completed the proposal defence after the SIAP programme was 71.43% from the Faculty of Electrical Engineering (FKEE) followed by 60% from the Faculty of Computer System and Software Engineering (FSKKP) and 57.14% from the Faculty of Manufacturing Engineering (FKP). While for the other faculties, the percentage of students whom completed the proposal defence were less than 50% which are 37.5% from Faculty of Industrial Science Technology (FIST), 33.33% from the Faculty of Engineering Technology (FTEK), 22.22% from the Faculty of Industrial Management (FIM) and Faculty of Chemical Engineering & Natural Resources (FKKSA) and lastly 14.29% from the Faculty of Centre for Modern Language & Human Science (PBMSK). The faculty that has the completion of Pre-VIVA by student was only FIM with 11.11% value consist of PHD student. The percentage of Master students who have completed the proposal defence for all faculties are 35.29%, while for PHD students were about 35.85%. Only about 5.88% of Master students of all faculties that has completed the Pre-VIVA session. While almost 100% of PHD student still did not done the Pre-VIVA.

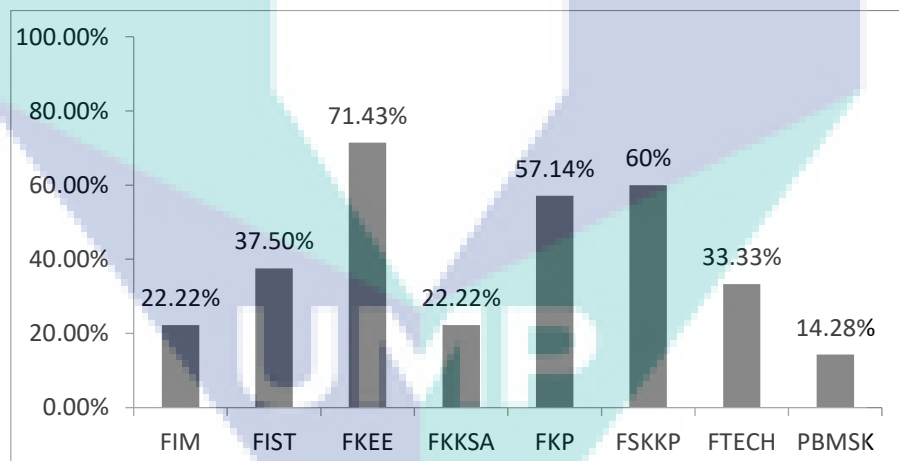


Figure 5.1: Percentage of proposal defence completed by students

For overall statistics as shown in Figure 5.2, about 36% of postgraduate students have already done their proposal defence and that leaves out 64% of them, that still have not completed their proposal defence

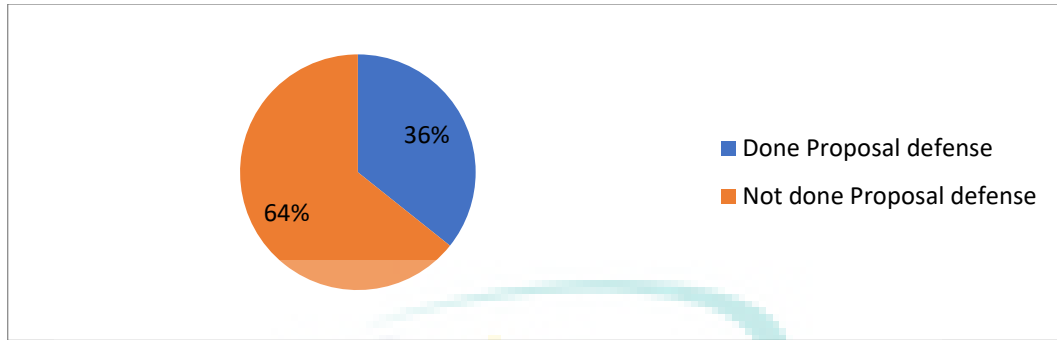


Figure 5.2: Percentage of proposal defense completion

As for Figure 5.3, there are about 99% of postgraduate students that still have not completed their Pre-VIVA sessions and only 1% of students who have completed their Pre-Viva. Therefore, from the 70 postgraduate students that participated in the SIAP programme (Table 5.1), most of them have shown a positive impact on their study. The percentage of students that completed their proposal defence after joining the programmed was about 57% (Table 5.2). It was then predicted that, 70% of the students will achieve graduation on time (GOT) which is around 49 students from the participants that have done their proposal defence within the stipulated time by Institute of Postgraduate Studies and managed to complete their Pre- VIVA before the end of maximum semester candidature.

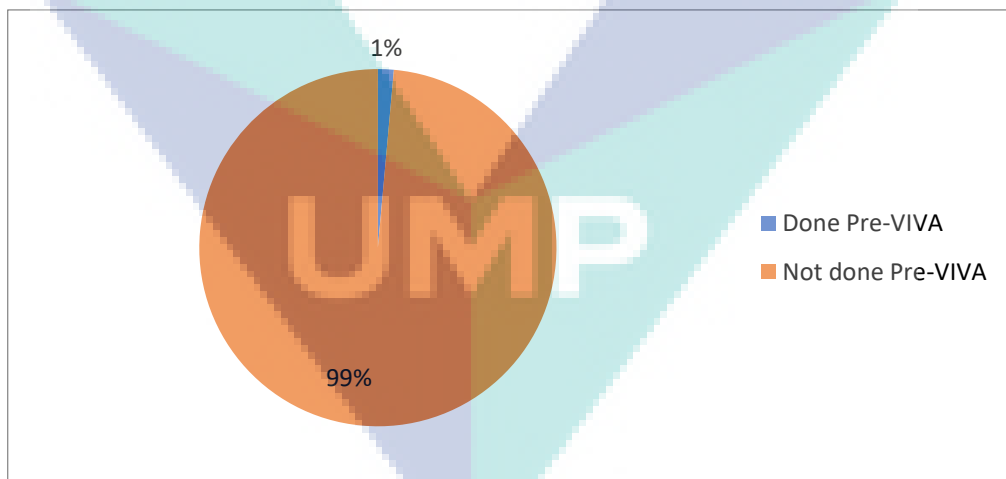


Figure 5.3: Percentage of Pre-VIVA completion

5.4 Initiatives taken by IPS

Based on the comments given and through a few series of workshops, IPS has taken initiatives to increase iGOT and decrease attrition rates. It can be summarised as follows:

- i. Issue iGOT certificate to both supervisors and students who have been able to achieve iGOT
- ii. Date of iGOT appears in the offer letter to students
- iii. SIAP programme
- iv. Research Methodology Module has been made online via MOOCS with 2-hour face to face interaction
- v. Improve system submission of thesis to external examiner to remind them of time that they need to submit the report
- vi. Improve process flow of viva-voce.
- vii. Supervisory course for supervisors
- viii. Introduce Thesis Template using Microsoft word to assist students in thesis writing
- ix. Having e-dashboard/ Power BI to have an up to date figure for iGOT an attrition rate for better monitoring.
- x. Increase number of financial assistance (MRS and DRS) given to Masters and PhD students
- xi. Improve management of workstation
- xii. Increase number of workstations
- xiii. Roadshows to increase awareness of importance of iGOT and attrition rate to students and faculty members
- xiv. To encourage faculty to make iGOT and attrition rate an agenda in their faculty council meeting

5.5 Summary

This chapter discusses the SIAP program that is meant to assist the postgraduate students to improve their academic performance. The program has been conducted for 3 years and it has shown positive impact on the performance of the students.

CHAPTER 6

UMP POSTGRADUATE ASSOCIATION



6.1 Introduction

New committee members for UMP Postgraduate Club (PostAc) was announced during Postgraduate Dinner that was organized by Institute of Postgraduate Studies (IPS) on 18th December 2015. During the first meet up with the new members and former members, it was found that PostAc had never been registered as an official association under the University. Upon meeting with the Dean of IPS, Prof. Dato' Dr Hasnah Haron and IPS Personnel Mdm. Kalpana Ramachandran, it is decided that PostAc will be officially reinstated and as one of the student's associations of University Malaysia Pahang under the brand-new name of UMP Postgraduate Association (PGA).

The request for the establishment of UMP Postgraduate Association (PGA) had been endorsed by the Vice Chancellor, Prof. Dato' Dr Daing Nasir Ibrahim and officially received by the PGA 2016 Committee on 17th March 2016. The core of the establishment is orientation of academic and leadership by pursuing higher degree of studies which requires great discipline, higher level of maturity, various skills, capabilities and knowledge beyond the intellectual intelligence. It is highly expected that the establishment of PGA will encourage the postgraduate students to excel well in both academic and leadership skills. Honing both aspects will be a priceless manifestation for developing future leaders. The establishment of PGA is seemed to be beneficial and bring greater advantage to UMP stakeholders especially postgraduate students who come from different countries, religions and nations.

6.2 Vision

To be a recognized postgraduate association at national, regional and international levels by contributing towards the development of academic, social and personal development of postgraduate students of Universiti Malaysia Pahang.

6.3 Missions

- i. Becoming the source of reference/information, providing assistance and bridging connection between postgraduate students and university administrations with diplomatic approach that is beneficial to all parties.
- ii. Creating close relationship with other postgraduate associations for sharing of ideas, new insights and resources available to assist postgraduate students.
- iii. Encouraging postgraduate students to be actively involved in co-curricular activities within campus and off-campus.

6.4 Objectives

- i. Act as a liaison between postgraduate students and university administration especially Institute of Postgraduate Studies (IPS).
- ii. To assist postgraduate students in organizing events and activities of various aspects including but not limited to academic, volunteerism, social work and entrepreneurship.
- iii. To enhance leadership skills among postgraduate students
- iv. To facilitate networking amongst the UMP Postgraduates, Faculty Members, Academia or Industrial Experts benefitting for:
 - Professional enhancement
 - Career development
 - Knowledge-experience sharing

6.5 PGA Committee Member

6.5.1 Postgraduate Association 2016

EXECUTIVE COMMITTEE



Vice President (Gambang)
Puranjan Mishra



President

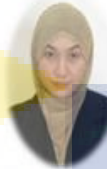
Nur Ain Zakiah Mohd Yusof



Vice President (Pekan)
Khor Ai Chia



Treasurer
Saravanan Jayakumar



Secretary
Asmawati Sajari

EXCO EVENT & ACTIVITY



Deputy Head
Basbeer Mohammed
Mohammed Albaini



Head Of Exco
Fadh Mohammed Omar Hujainah



Secretary
Marhalini
Binti Mohd Shukri



Nur Mazlee
Bin Norazmi



Madan Yarmma
A/L Suparmaniam



Richard
Hannis Anisah



Amina Yasin

EXCO MULTIMEDIA, PUBLICITY & DOCUMENTATION



Deputy Head
Tahnim Sultana



Head of Exco
Mohd Amir Izuddin
Bin Mohamad Ghazali



Nabillah Binti Mamar



Abdul Qahar
Sarwari



Daniel
Osezua Aikhele



Naqib Hakim Bin
Kamarudin

EXCO ALUMNI & PUBLIC AFFAIRS



Deputy Head
Nurhidayah Binti Mahazan



Head of Exco
Syeda Maria Zaidi



Secretary
Zafizal Zolkaffli



Ahmed Yousef
Adam Mohammed



Alvin
Tan Yeong Yu



Chris
Tung Foo Sheng



Ng Zore Phong



Yap Hiew Thong

EXCO WELFARE & ACADEMIC AFFAIRS



Deputy Head
Thirawan Rao A/L
Narasimma Naidu



Head of Exco
Zubayzwan Ahmad Khushairi



Mah Kah Hong



Ahmad Fahmy
Bin Jusoh



Mohammad Amirul
Bin Mohd Yusof



Dzulaika Nobaillah
Binti Noor



Nuri Adilah
Nashrutmillah



Nurul Suraya
Bi Azahari

6.5.2 Postgraduate Association 2017



6.5.3 Postgraduate Association 2018



PGA 2018 ORGANIZATION



PGA assists IPS in conducting its activities besides being the liaison between students, faculties and Management. They are instrumental to the success of IPS as they have assisted IPS in registration, 3MT, NCON conference and many other activities. Besides they also use social media to assist IPS to communicate announcements or request for assistance / information to the students.



3 MT – 3 Minute Thesis Competition

NCon- National Conference

Postgraduate Award and Appreciation dinner

6.6 Course Fees

Starting Semester 2 2017/2018 (February 2018), the Bursary Department has implemented cashless transactions to all local post-graduate fees & tuition fees. Thus, the payment can be made either via Debit/Credit card or Online Banking such as Maybank 2U prior or on the day of registration. For the international student, the payment can be made in cash or telegraphic transfer. The personal bond is a refundable deposit which will be returned (without interest) either in full or partial upon completion of the programme and subject to any claims that may arise from breach of University/Malaysia Laws & Regulations. The visa charge and rate will differ and charged accordingly to the new rates implemented by the Education Malaysia Global Services (EMGS). The university through International Office will notify the student through email in regards to the exact amount to be paid once the document of visa application form the student is received.

All applicants are responsible for their financial well-being and must ensure that they have enough financial resources to embark on their graduate studies successfully. The estimated total cost of studying in UMP (inclusive of tuition and living expenditure) for an 18-month masters degree candidature is RM35,000. The estimated total cost for a 36 months' doctoral candidature is about RM70,000. The bulk of this cost is living cost since the tuition fees charged for both Malaysian and international students are low. As such the actual total cost depends on candidates' living styles and preferences. Figure 6.1 the example of payment process for those students made the payment by using Maybank 2U (online banking).



Figure 6.1 Process Flow of Payment for using Maybank 2U (Online Banking)

6.7 Fees Structure

6.7.1 Fees by Research Programme

Table 6.1 Fee Structure for Master (Engineering & Technology)

Mode	Full-Time				Part-Time			
	Local		International		Local		International	
Item/Semester	1 st Semester	Subsequent Semester	1 st Semester	Subsequent Semester	1 st Semester	Subsequent Semester	1 st Semester	Subsequent Semester
Tuition	1,200	1,200	3,685	3,685	1,200	600	3,685	2,210
Non-Recurring	2,100	-	3,820	-	2,100	-	3,280	-
Personal Bond	-	-	575	575	-	-	575	575
Recurring Fees	500	500	1,500	-	500	500	1,500	-
Total	3,800	1,700	9,580	4,260	3,800	1,100	9,580	2,785

*Not inclusive of VISA and HOSTEL fees

Table 6.2 Fee Structure for PHD (Engineering & Technology)

Mode	Full-Time				Part-Time			
	Local		International		Local		International	
Item/Semester	1 st Semester	Subsequent Semester	1 st Semester	Subsequent Semester	1 st Semester	Subsequent Semester	1 st Semester	Subsequent Semester
Tuition	1,500	1,500	4,035	4,035	1,500	750	4,035	2,420
Non-Recurring	2,600	-	4,415	-	2,600	-	4,415	-
Personal Bond	-	-	575	575	-	-	575	575
Recurring Fees	500	500	1,500	-	500	500	1,500	-
Total	4,600	2,000	10,525	4,610	4,600	1,250	10,525	2,995

*Not inclusive of VISA and HOSTEL fees

6.7.2 Fees by Mixed-Mode Programme

Table 6.3 Fee Structure for Master of Science (Industrial Mathematics)

Mode	Local Student (RM 285 / Per credit hour (C/H))			International Student (RM 475 / Per credit hour (C/H))		
	1 st Semester	2 nd Semester	3 rd Semester	1 st Semester	2 nd Semester	3 rd Semester
Tuition	C/H x RM285	C/H x RM 285	C/H x RM 285	C/H x RM 475	C/H x RM 475	C/H x RM 475
Non-Recurring	RM 600	-	-	RM 2,030	N/A	N/A
Personal Bond	RM 825	RM 825	RM 825	RM 965	RM 965	RM 965
Recurring Fees	N/A	N/A	N/A	RM 1,500	-	-
Total	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H
Estimated Total (3 Semester @ 42 C/H) (MYR)*	RM 15,045*			RM 26,375*		

*Total: 42 Credit Hours

*Not inclusive of VISA and HOSTEL fees

***Full time** : Minimum 12 credit hours per semester

***Part time** : Minimum 6 credit hours per semester

6.7.3 Fees by Coursework Programme

Table 6.4 Fee Structure for Master of Science (Industrial Mathematics)

Mode	Local Student (RM 285 / Per credit hour (C/H))			International Student (RM 475 / Per credit hour (C/H))		
	1 st Semester	2 nd Semester	3 rd Semester	1 st Semester	2 nd Semester	3 rd Semester
Tuition	C/H x RM285	C/H x RM 285	C/H x RM 285	C/H x RM 475	C/H x RM 475	C/H x RM 475
Non-Recurring	RM 600	-	-	RM 2,030	N/A	N/A
Personal Bond	RM 825	RM 825	RM 825	RM 965	RM 965	RM 965
Recurring Fees	N/A	N/A	N/A	RM 1,500	-	-
Total	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H
Estimated Total (3 Semester @ 42 C/H) (MYR)*	RM 15,045*			RM 26,375*		

*Total: 42 Credit Hours

*Not inclusive of VISA and HOSTEL fees

***Full time** : Minimum 12 credit hours per semester

***Part time** : Minimum 6 credit hours per semester

Table 6.5 Fee Structure for Master of Mechanical Engineering

Fee Structure for Master of Industrial Engineering

Fee Structure for Master of Electrical Engineering (Sustainable Energy)

Mode	Local Student (RM 285 / Per credit hour (C/H))			International Student (RM 475 / Per credit hour (C/H))		
	1 st Semester	2 nd Semester	3 rd Semester	1 st Semester	2 nd Semester	3 rd Semester
Tuition	C/H x RM285	C/H x RM 285	C/H x RM 285	C/H x RM 475	C/H x RM 475	C/H x RM 475
Non-Recurring	RM 600	-	-	RM 2,030	N/A	N/A
Personal Bond	RM 825	RM 825	RM 825	RM 965	RM 965	RM 965
Recurring Fees	N/A	N/A	N/A	RM 1,500	-	-
Total	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H
Estimated Total (3 Semester @ 40 C/H) (MYR)*	RM 14,475*			RM 25,425*		

*Total: 40 Credit Hours

*Not inclusive of VISA and HOSTEL fees

***Full time** : Minimum 12 credit hours per semester

***Part time** : Minimum 6 credit hours per semester

Table 6.6 Fee Structure for Master of Information & Communication Technology

Fee Structure for Master of Computer Networking

Fee Structure for Master of Software Engineering

Mode	Local Student (RM 285 / Per credit hour (C/H))			International Student (RM 475 / Per credit hour (C/H))		
	1 st Semester	2 nd Semester	3 rd Semester	1 st Semester	2 nd Semester	3 rd Semester
Tuition	C/H x RM285	C/H x RM 285	C/H x RM 285	C/H x RM 475	C/H x RM 475	C/H x RM 475
Non-Recurring	RM 600	-	-	RM 2,030	N/A	N/A
Personal Bond	RM 825	RM 825	RM 825	RM 965	RM 965	RM 965
Recurring Fees	N/A	N/A	N/A	RM 1,500	-	-
Total	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H
Estimated Total (3 Semester @ 40 C/H) (MYR)*	RM 14,475*			RM 25,425*		

*Total: 40 Credit Hours

*Not inclusive of VISA and HOSTEL fees

***Full time** : Minimum 12 credit hours per semester

***Part time** : Minimum 6 credit hours per semester

Table 6.7 Fee Structure for Master of Science (Process Plant Operation)

Mode	Local Student (RM 640/ Per credit hour (C/H))			International Student (RM 935 / Per credit hour (C/H))		
	1 st Semester	2 nd Semester	3 rd Semester	1 st Semester	2 nd Semester	3 rd Semester
Tuition	C/H x RM640	C/H x RM640	C/H x RM640	C/H x RM 935	C/H x RM 935	C/H x RM 935
Non-Recurring	RM 600	-	-	RM 2,030	-	-
Personal Bond	RM 825	RM 825	RM 825	RM 965	USD 230	USD 230
Recurring Fees	N/A	N/A	N/A	RM 1,500	N/A	N/A
Total	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H
Estimated Total (3 Semester @ 40 C/H) (MYR)*	RM 28,675			RM 43,825		

*Total: 40 Credit Hours

*Not inclusive of VISA and HOSTEL fees

***Full time** : Minimum 12 credit hours per semester

***Part time** : Minimum 6 credit hours per semester

Table 6.8 Fee Structure for Master of Science in Mining with Mineral Technology

Mode	Local Student (RM 442/ Per credit hour (C/H))			International Student (RM 735 / Per credit hour (C/H))		
	1 st Semester	2 nd Semester	3 rd Semester	1 st Semester	2 nd Semester	3 rd Semester
Tuition	C/H x RM442	C/H x RM442	C/H x RM442	C/H x RM 735	C/H x RM 735	C/H x RM 735
Non-Recurring	RM 600	-	-	RM 2,030	-	-
Personal Bond	RM 825	RM 825	RM 825	RM 965	RM 965	RM 965
Recurring Fees	N/A	N/A	N/A	RM 1,500	N/A	N/A
Total	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H
Estimated Total (3 Semester @ 40 C/H) (MYR)*	RM 20,755			RM 35,825		

*Total: 40 Credit Hours

*Not inclusive of VISA and HOSTEL fees

Full time** : Minimum 12 credit hours per semesterPart time** : Minimum 6 credit hours per semester

Table 6.9 Fee Structure for Master of Science in Technology-Integrated Language Studies

Mode	Local Student (RM 200/ Per credit hour (C/H))			International Student (RM 335 / Per credit hour (C/H))		
	1 st Semester	2 nd Semester	3 rd Semester	1 st Semester	2 nd Semester	3 rd Semester
Tuition	C/H x RM200	C/H x RM200	C/H x RM200	C/H x RM 335	C/H x RM 335	C/H x RM 335
Non-Recurring	RM 600	-	-	RM 2,030	-	-
Personal Bond	RM 825	RM 825	RM 825	RM 965	RM 965	RM 965
Recurring Fees	N/A	N/A	N/A	RM 1,500	N/A	N/A
Total	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H
Estimated Total (3 Semester @ 40 C/H) (MYR)*	RM 11,075			RM 20,625		

*Total: 40 Credit Hours

*Not inclusive of VISA and HOSTEL fees

Full time** : Minimum 12 credit hours per semesterPart time** : Minimum 6 credit hours per semester

Table 6.10 Fee Structure for Master of Business Administration

Mode	Local Student (RM 375/ Per credit hour (C/H))			International Student (RM 625 / Per credit hour (C/H))		
	1 st Semester	2 nd Semester	3 rd Semester	1 st Semester	2 nd Semester	3 rd Semester
Tuition	C/H x RM375	C/H x RM375	C/H x RM375	C/H x RM 625	C/H x RM 625	C/H x RM 625
Non-Recurring	RM 600	-	-	RM 2,030	-	-
Personal Bond	RM 825	RM 825	RM 825	RM 965	RM 965	RM 965
Recurring Fees	N/A	N/A	N/A	RM 1,500	N/A	N/A
Total	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H	Amount according to C/H
Estimated Total (3 Semester @ 45 C/H) (MYR)*	RM 19,950			RM 34,550		

*Total: 45 Credit Hours

*Not inclusive of VISA and HOSTEL fees

***Full time** : Minimum 12 credit hours per semester

***Part time** : Minimum 6 credit hours per semester

6.8 Financial Assistance

Students that registered are advisable to apply for the financial assistance given by UMP. There is various type of financial assistance (scholarship & education loan) that can be applied by both local and international students. Financial assistance is given to assist full time research students of UMP (both Masters and PhD) to undertake meritorious research activities.

6.8.1 Local Students:

- i. World Bank Scholarship Programme
- ii. Maxis Scholarship
- iii. Perak State Government Education Loan 2017
- iv. Hadiah Latihan Persekutuan
- v. Hadiah Latihan Persekutuan (HLP) Cuti Belajar Bergaji Penuh (CBBP) Bagi Pegawai Pendidikan Pengajian Tinggi (Pensyarah) Sesi Pengajian 2019/2020
- vi. Hadiah Latihan Persekutuan (HLP) Separa Biasiswa (SB) Bagi Pegawai Pendidikan Pengajian Tinggi (Pensyarah) Sesi Pengajian 2018/2019

- vii. Hadiah Latihan Persekutuan (HLP) Bagi Staf Bukan Akademik IPTA Sesi Pengajian 2019/2020
- viii. Derma Siswa Bagi Melanjutkan Pelajaran Zakat Kedah
- ix. Pinjaman Pendidikan Negeri Pulau Pinang
- x. Pinjaman & Biasiswa Negeri Selangor
- xi. Pinjaman Yayasan Kelantan
- xii. Pinjaman Boleh Ubah Yayasan Bank Rakyat
- xiii. The PTPTN Education Loan
- xiv. MyBrain15
- xv. Permodalan Darul Ta'zim 2018
- xvi. Tabung Pendidikan Sarjana
- xvii. Tabung Pendidikan Kakitangan Kerajaan Kumpulan Pelaksana
- xviii. EPF Education Withdrawal Scheme
- xix. Khazanah Scholarship Programme
- xx. Ajinomoto Scholarship

6.8.2 International Students:

- i. Malaysia International Scholarship (MIS) 2017
- ii. World Bank Scholarship Programme

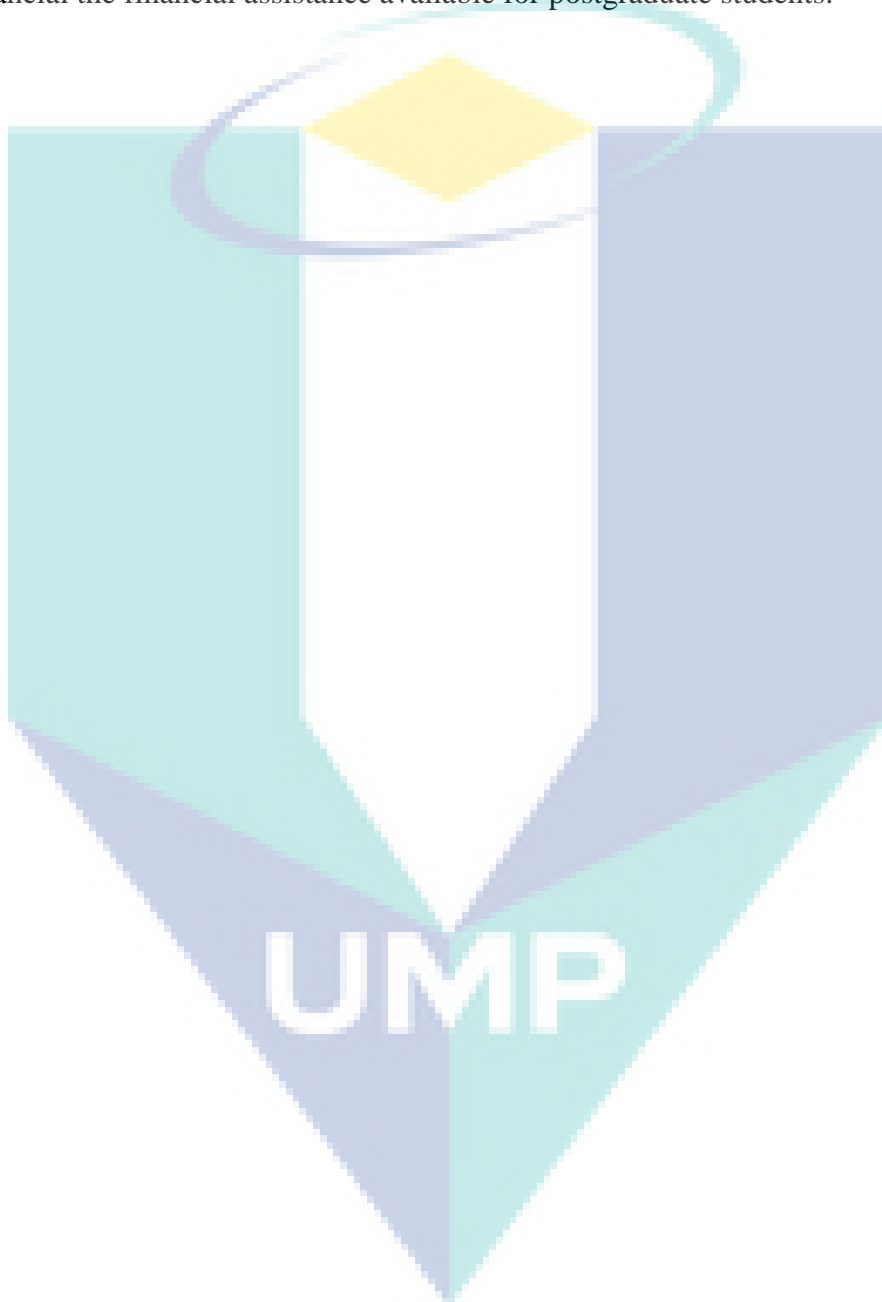
6.8.3 Financial Assistance given by UMP

Some of the financial assistance given by UMP are as follows:

- i. Student Working Scheme (SPB)
- ii. Graduate Research Assistance (SPPS)
- iii. Doctorate Research Scheme (DRS)
- iv. Master's Research Scheme (MRS)
- v. Postgraduate Research Scheme (PGRS)

6.9 Chapter Summary

This chapter discusses the establishment of the Postgraduate Association, its objectives also the functions that it plays in assisting IPS with its activities. It also provides a brief overview of the fees of the postgraduate programmes at UMP and some of financial the financial assistance available for postgraduate students.



CHAPTER 7

POSTGRADUATE WORKSTATION

7.1 Introduction

A survey has been undertaken by UMP Post Graduate Association (PGA) 2018 from 3rd August 2018 and ended on 14th September 2018. The objective of the survey is to get information regarding workstation and other relevant issues related to postgraduate studies in UMP. A total of 134 students have answered the questionnaire. Based on initial interview with postgraduate students and field observation and it was found that postgraduate students whom occupied those workstations did not fully utilized their workstations. Hence, the workstation at Cariff building, UMP Gambang is always empty or under-utilized.

7.2 Demographic of Respondents

The respondent's demographics are as shown in Table 7.1. It shows that the highest respondents come from the Faculty of Chemical Engineering & Natural Resources (FKKSA), which is 26.9% followed by Faculty of Industrial Sciences and Technology (FIST) which is 14.9% and Faculty of Science Computer & Software Engineering (FSKKP) which is 12.7%. As for the rest of the faculties, the respondents where less than 10%. Study show that that Natural Resources (FKKSA) has the highest active postgraduate students in UMP with 64 students (18%) while second highest according to the portal is Faculty of Mechanical Engineering (FKM) with 15.4 percent (55 students) and followed by Faculty of Industrial Management (FIM) 14 percent (50 students) Table 7.1. However, based on the latest finding, less postgraduate students from Faculty of Mechanical Engineering (FKM) and Faculty of Industrial Management (FIM) responded to this survey.

Table 7.1 Demographics Profile of Respondents

Demographics		N	(%)
Faculty	Faculty of Chemical Engineering & Natural Resources (FKKSA)	36	26.9
	Faculty of Industrial Management (FIM)	13	9.7
	Faculty of Industrial Sciences & Technology (FIST)	20	14.9
	Faculty of Civil Engineering & Earth Resource (FKASA)	5	3.7
	Faculty of Electric & Electronics Engineering (FKEE)	5	3.7
	Centre of Modern Language & Human Science (PBMSK)	5	3.7
	Faculty of Chemical Engineering (FKM)	10	7.5
	Faculty of Manufacturing Engineering (FKP)	12	9
	Faculty of Science Computer & Software Engineering (FSKKP)	17	12.7
	Faculty of Engineering Technology (FTK)	11	8.2
Nationality	Local	105	78.4
	International	29	21.6
Study Programme	Master	64	47.8
	Doctor of Philosophy (PhD)	70	52.2
Mode	Full-time	115	85.8
	Part-time	19	14.2
Accommodation	Inside UMP	54	40.3
	Outside UMP	80	59.7

Furthermore, most of respondents are local students with 78.4%, 52.2% are postgraduate students whom are pursuing PhD and 85.8% are full time students. However, 59.7% of postgraduate students were staying outside the UMP campus. Therefore, focusing on student welfare and improving infrastructures are recommended in order to help improve the research and learning environment in UMP, thus enable IPS and UMP to achieve better satisfaction, quality and performance.

Table 7.2 Workstation Satisfaction, Experience and Perception

Question for Workstation		Yes (N)	%	No (N)	%
WS1	I am aware that IPS provides two types of workstation for postgraduate student which are Dedicated Workstation (1st Floor Cariff) and Open Workstation (2nd Floor Cariff).	90	67%	44	33%
WS2	I have my own workstation (either in IPS Dedicated Workstation or in the faculty).	80	60%	54	40%
WS3	I am aware that I can apply for IPS Workstation through IPS counter at my 2nd semester (Master) & 3rd semester (PhD) if I do not have my own workstation in my faculty.	80	60%	54	40%
WS4	I am aware that there is a limited number of workstations available due to high demand.	99	74%	35	26%
WS5	I agree that each student should get workstation from IPS since the beginning of 1st semester.	118	88%	16	12%

WS6	I am aware that the Open Workstation (non-dedicated space) on the second floor of IPS workstation is available from 9 am to 5 pm.	77	58%	57	42%
WS7	I agree that the workstation should be made available for 24 hours.	125	93%	9	7%
WS8	I am more interested to get dedicated workstation than using the non-dedicated workstation to do my research.	119	89%	15	11%
WS9	I agree that pass entrance for the workstation should be renewed every semester for easy tracking by IPS.	74	55%	60	45%
WS10	IPS staffs are very helpful in managing my workstation application.	91	68%	43	32%

According to Table 7.2, it was found that as much as 89% of respondents prefer dedicated workstation to do their research. Moreover, 88% of postgraduate students suggested that IPS should provide them with dedicated workstation since the beginning of 1st semester. Herewith, this shows that postgraduate students prefer dedicated workstation more than the open workstation. Open workstation is not a preferred postgraduate students' choice to improve their studies. IPS could address this issue by converting open access workstation to dedicated workstation. Nevertheless, 74% of postgraduate students understood that dedicated workstation is limited due to high demand hence, the application might take some time.

Furthermore, 93% of postgraduate students suggested that IPS should make the workstation available for postgraduate students for 24 hours. This is because the nature of postgraduate studies is not the same as undergraduate. For example, during day time, most of the postgraduates have laboratory works or classes etc. thus, they usually stay up late at night to resume their writing process. Not only this also in line with postgraduate student's request and satisfaction but, this will also help to increase the usefulness of workstation and improve UMP research culture.

As suggested, dedicated 24 hours workstation should be implemented by IPS. Thus, IPS should increase the numbers of workstations offered. This will allow postgraduate students to contribute more time and effort in their studies and increase performance of students. Moreover, UMP campus life also will become more vibrant and positive as postgraduate students invest more in campus experience. As a result, any new policy or strategy by IPS and UMP will be more acceptable by postgraduate students as they are acclimatized by UMP research culture and campus life.

7.3 Other Related Issues Regarding Dedicated Workstation

7.3.1 Twenty-Four Hours Study Room

In terms of staying place or accommodation, the postgraduate students were asked either they are staying inside campus or offside campus. After that, the following question was asked for those staying inside campus: “In your opinion, what should UMP improve for the fees that you have paid for the hostel accommodation?”. From a total of 54 respondents staying inside the campus Table 7.1, 25 postgraduate students which is almost 50% responded that study room must be improved. This indicates that there is no proper study room available in the hostel. This has also been supported by the responses for the next question asked for those staying inside campus which is: “What kind of basic facilities that you think will be beneficial for you to stay in campus?”. A total of 24 respondents agreed that 24-hour study room in the library should be made available.

As for postgraduate students living outside campus which is 80 respondents (Table 7.1), there are many reasons provided by them to stay off-campus however, the most critical reason is the hostel fees. Similarly, same question was asked that is: “What kind of basic facilities would you think will be beneficial for staying inside the campus?”. It was found out that 49 respondents (61%) suggested that 24-hour study room in the library should be made available on campus. A 24-hour study room is suggested to be provided either in the hostels or in the library. Students mentioned that the lack of a 24-hour study room available for postgraduate students made it difficult for them to focus on their studies. Therefore, it is highly recommended that the management of the university address this matter. IPS and faculty particularly, should assist to ensure that a 24-hour study space is made available for the postgraduate students.

7.3.2 Safety Related Issues

In relation with the request for 24-hours study room or workstation space, postgraduate students had also raised their complaints and concerns related to safety issues especially when they have done their laboratory work or research until late at night.

Table 7.3 presented the findings for this matter. Based on a preliminary study, it was found that the parking area provided for postgraduate students is not easily accessible and for those who work late at night it poses a danger to them as they have to park their cars quite a distance away. With the abundance of parking lots at UMP in Gombang and Pekan, it is surprising that postgraduate students are complaining on parking related issues. Likewise, 74% of the respondents of this survey agreed that UMP should provide a dedicated postgraduate student's parking lots near the faculty and the laboratories.

It has also been requested by the respondents that different car stickers for the postgraduate students should be provided (75%) so as to give them some consideration to park their vehicles in the designated area. This applies to the postgraduate students who are required to teach or assist the faculty or laboratories during the daytime especially. For example, for the recipients of Master Research Scheme or Doctoral Research Scheme.

Postgraduate students are not given much option to use the laboratories facilities during office hours which needing them to work in laboratory until late night. This is another affirmation for the requirement of dedicated workstation by the postgraduate students in which they will be in safer area upon finishing their laboratory work late at night instead of going back. Thus, providing different stickers and designated parking area for postgraduate students are also necessary. Consequently, frequent checks by security officers at night around laboratory area are crucial, especially for postgraduate students working in laboratory and this was agreed by 76% of the postgraduates.

Students suggest that IPS and the Security Department of UMP should assist to provide parking spaces to students that are closer to workstation or laboratory parking area. If this issue is overcome, it will indirectly lead to a higher academic performance of the students.

7.4 Findings from Open-ended and Interviews

Apart from the "Yes" or "No" questions or prefix-answers questions, there are open-ended section and individual interviews with the postgraduate students that provides insight on further issues, ideas, criticism, comments and recommendations for better improvement of postgraduate life. Among the most glaring issue from the survey is the availability of dedicated workstation. This workstation issue is the main problem that postgraduate students are facing. Students requesting workstations are not sure when or

why their applications are not getting positive feedbacks from IPS. Furthermore, students do not know the policy or procedure to obtain a workstation as some students that apply have not received confirmation, but some latecomers received workstation. Thus, PGA 2018 has been tasked to facilitate this issue.

Interviews were conducted from several students with workstation and without workstation to understand this problem. From the findings, it was found that postgraduate students only know that if they reached semester 2 they could apply for the workstation but when will they get the confirmation is unknown. For new applicants, knowing that getting a dedicated workstation is difficult, they used the access card of current workstation holders to get inside and stay at empty workstation. When asked about the possibility of getting into trouble, postgraduate students said: “The workstation is always empty and rather than asking about that why don’t you (PGA 2018) talk to management (IPS) and tell them or take picture of this workstation? We need this workstation, but we cannot get because IPS answer is always the workstation is full”.

On the other hand, for existing workstation owner, they were baffled that they were told the workstations were full but when they are at the workstation, most of the time it is empty. In addition, postgraduate students said that most of workstation owners are doing data collection thus they are not going to use their workstation especially during daytime. Furthermore, they mentioned that for some workstations, they have never seen their owners. PGA 2018 had also made several visits to the dedicated workstation in Cariff and the situation is realistically true. Less than 20% workstations are occupied either during day or night. Moreover, another interviewee also mentioned that the usefulness of open access workstation is not meeting their study needs: “I can only use workstation upstairs (open access workstation) when they open. Sometimes, you want to do your research at a time when the workstation is closed. But we cannot do that because the workstation is locked. My friends work at their faculty’s workstation and it’s open 24 hours and sometimes at the lab you are working late and a long time. You should not make the workstation only open at office hour. Are they afraid of losing something? We only wanted to use the place and internet access to do our work. The workstation upstairs also sometimes the degree students can use. But we don’t complain because even if they use because nobody is using it. Why not give it to each students (postgraduate)?”.

In the same way, another respondent had commented about the open workstation in which he/she found out that the open workstation had not been opened or closed according to the stipulated time. They had arrived early, only to be waiting for the officer to unlock the door and this had causing lot of time wasted: “As a postgraduate student, time is worth than anything, rather than waiting. I do suggest that IPS can dedicate the key to PGA, so that there will no waiting game for the student working at the open workstation”.

Despite giving the responsibility for the open workstation key to PGA, PGA 2018 agrees that providing dedicated workstation for the postgraduate students are better option in which they can take care for their own workspace. Table 7.4 represents other original comments from postgraduate students in relation to workstation matters, therefore IPS and UMP should seriously consider providing more offers for dedicated workstation. Prior to that the updated policy, rules and regulations for workstation should be clearly stated and openly accessed by postgraduate students from the portal. Thus, everything will be handled accordingly.

Table 7.3 Comments and Recommendations from Postgraduate Students

No	Comments
1	To improve limitation and availability of workstation for postgraduate
2	The waiting time for workstation application is too long and therefore is quite difficult for students to have their own space to do the work.
3	Lack of management of study workstation, strictly not allow kids or others with non-study purpose entry.
4	I suggest that IPS should update the use of workstation (1st floor Cariff) as there are always empty workstation in that room. It has been long since my friends and I applied for a workstation as we are working around Cariff but we never get any response from IPS.
5	Hope all students can get their own workstation, so that students can have their own space to study if they didn't do any lab works especially for those lives off campus.

7.5 Additional Comments and Findings related to IPS Matters

Table 7.5 shows the percentage of “Yes” and “No” responses to several questions asked in the survey. About 92% of postgraduate students are aware of all the rules and guidelines for postgraduate students including requirements for graduation such as publication or modules, 72% of postgraduate students know that they have a student account matricnumber@std.ump.edu.my so that they can give response to e-PAT to evaluate my supervisor and other services provided by IPS and 39% of postgraduate

students found that all the eight modules with face to face approaches are effective in providing them with new knowledge.

Table 7.4 IPS Administration and Academic Affairs

Items	Yes		No	
	(N)	(%)	(N)	(%)
I am aware of all the rules and guidelines for postgraduate students including requirements for graduation such as publication or modules.	123	92%	11	8%
I know that I have a student account matricnumber@std.ump.edu.my so that I can give response to e-PAT to evaluate my supervisor and other services provided by IPS.	97	72%	37	28%
I found that all the eight modules with face to face approaches are effective in providing me with new knowledge. *	52	39%	22	16%

*Not applicable for senior student 62 (46%)

7.5.1 Rules and Guidelines

As much of 92 % (Table 7.5) of respondents agreed that they are aware of all the rules and guidelines for postgraduate students including requirements for graduation such as publication or modules. This indicates that the effort of IPS to record and publish all rules and guidelines in book form and make it available on IPS portal is fruitful. Nevertheless, some responded that initial orientations for new postgraduate students for better understanding of the procedures and SOPs should be conducted. Especially for a new registered research postgraduate student at UMP. They requested that the first week of registration should be dedicated to the new student only for orientation of the system and procedures.

7.5.2 Courses and Academic Workshops

From total respondents, 39% (Table 7.5) responded that all the eight modules with face to face approaches should be more effective in providing them with new knowledge. Similarly, PGA 2018 had also obtained a lot of request to conduct more academic classes by postgraduate students by research. Some commented that the compulsory class attended on first semester is not helpful.

7.5.3 IPS Sub-department in Pekan

On the other hand, lots of comments and requests are received from the postgraduate students in Pekan campus regarding the sub-department should be stationed daily in Pekan as shown in Table 7.6. The postgraduate student's safety in Pekan campus especially those who had to conduct laboratory works at night is also a concern.

Table 7.5 Request for IPS Sub-department in Pekan

No	Comments
1	Open Sub-department of IPS in UMP Pekan everyday (not twice a month)
2	Make the students of faculties in Pekan easier to deal with IPS. No need us to go to Gombang.
3	Pekan campus need an IPS office for administration purpose.

In addition to that, postgraduate students from Pekan should be encouraged to actively participate as PGA Committee. Some students requested that if the IPS is not able to open the sub-department in Pekan Campus, at least the PGA should be a good representative for IPS.

Most of the respondents had perceived good perception towards IPS efforts in assisting postgraduate students especially through the establishment of PGA. Among notable comments stated that: *“Thanks for IPS Leadership who gave attention and acknowledgment to PGA and through them to PG students. Please create more programmes not only related to academic parts but for more entertainment and engagement with community. Programmes that make the life at UMP more interesting and leave a great image of UMP”*. Thus, more representative of PGA from Pekan is needed.

Based on the overall survey, findings from interviews as well as field observations, it can be concluded that dedicated workstation that open 24-hours daily is essential for postgraduate students to improve their satisfaction, experience and perception towards postgraduate life in UMP. Therefore, IPS, UMP and PGA 2018 should focus on solving this issue of under-utilized and limited number of workstations for postgraduate students.

A follow up discussion and meeting with existing postgraduate students currently occupying workstation at Cariff is critical. By understanding the issue of not using the

workstation by current owner, this will ensure the same issue will not occur in the future. Furthermore, IPS can enact policy and strategy to maximize the use of workstation. One solution to solve this issue is to offer dedicated workstation to postgraduate students as requested since students have good justification and it offers satisfaction, performance and better perception benefits to IPS and UMP. The good research culture in UMP is possible if IPS and PGA 2018 can increase postgraduate satisfaction, experience and providing positive perception to postgraduate students.

7.6 Summary

This chapter discusses the survey conducted by Postgraduate association on workstation and its related issues. Findings suggested that the postgraduate students prefer a dedicated workstation which is accessible 24 hours rather than a common space. They would also like to have some parking space dedicated for them as sometimes they are also required to assist the faculty in conducting tutorials and assisting the faculty in its activities. Suggestions have also been made that IPS should monitor the students who are given the workstations to ensure they occupy them and that IPS should have a dedicated space in Pekan to assist students there on postgraduate matters.



UMP

CHAPTER 8

COMPETENCY COURSES

8.1 Competency Courses

Some of the problems of students to graduate on time are difficulty in writing thesis and analyzing data. This can be seen from the requests of the postgraduate students for IPS to conduct various training programs, which includes thesis writing using LATEX and UMP Thesis Template, and Statistical Modelling. With the competency courses, students will be able to gain hands on approach and coaching from lecturers who are experts in their related fields. With these courses, students should be able to graduate on time (iGOT).

Realizing that UMP play a critical role in providing the necessary competency and skills to the graduates of UMP, beginning Semester 1, 2019/2020, for a start 16 competency courses have been offered to assist students to obtain the necessary competency and skills required for them to graduate on time and thus would be able to meet the demands of the industry.

8.2 Objective of Competency Courses

- i. To meet UMP's vision, mission and objectives of producing outstanding graduates who have the competency and skills needed to provide the services to the industry be it in terms of research, consultancy or technical expertise
- ii. With the competency courses, students will gain hands on approach and coaching from lecturers who are experts in the related field of study.
- iii. Students would be able to raise issues of concern to the lecturers and thus would be able to complete a quality research/project and at the same time, will also gather some credits for the one semester subjects they have taken.
- iv. Indirectly will assist students to graduate on time(iGOT) and will increase graduate employability (GE).
- v. In future, the credits obtain from the courses taken might also be used for credit exemption in institutions which recognized the courses (subject to their verification).

- vi. Thus competency courses will enhance the students' skills and competency in research and consultancy, as they will be able to obtain hands on learning experience from lecturers who are experts in the field
- vii. Will be able to obtain credits for the courses they have taken which would add value to their existing program
- viii. Students will be able to obtain advise from lecturers from different disciplines, thus making them more holistic in knowledge.
- ix. Supervisors will be given the opportunity to assist their students in carrying out their research and consultancy work.
- x. Supervisors will have more time to work on their other job demands as part of their supervisory work will be assisted by experts in the area.
- xi. Supervisors will be able to contribute to CSR and also support the agenda of the University and the nation

8.3 Description of Competency Courses

Competency courses will be “Additional” or “Enrichment courses” to the Compulsory Research Methodology (8 Modules) that are offered online.

The 16 Competency Courses can be broadly classified as:

1. Engineering Mathematics
2. Statistics and Data Analysis
3. Research Methodology
4. English and Presentation Skills
5. Thesis Writing

The courses are 3 credit units and will be given a grade. They are offered every semester as an elective course. In future more Competency Courses will be offered.

8.3.2 Course Synopsis of the Competency Courses are as follows:

1. ENGINEERING MATHEMATICS (1)UIM113 Advanced Numerical Methods

This course covers the numerical solutions of linear systems, nonlinear systems, ordinary differential equations (ODEs) and stochastic differential equations (SDEs).

(2)UIM1123 Optimization Techniques

This course covers optimization techniques, in particular, linear programming, nonlinear optimisation and non-standard optimization techniques.

(3)UIM1133 Mathematical Modelling

This course discusses a variety of mathematical modelling that arise in engineering and industrial applications. It covers modelling with different kind of differential equations, namely ordinary, partial and delay

2. STATISTICS AND DATA ANALYSIS

(1)UIS1113 Descriptive Statistics

This course discusses on basic statistical problem-solving methodology, graphical and numerical data analysis and confidence interval.

(2)UIS1123 Inferential Statistics

This course discusses on inferential statistics including hypothesis testing; analysis of variance (ANOVA); regression and correlation including simple and multiple linear regressions; goodness-of-t test and contingency tables. Software used includes SPSS, R Language, S Plus, EViews and Minitab.

(3)UIM1133 Mathematical Modelling

This course discusses a variety of mathematical modelling that arise in engineering and industrial applications.

(4)UIS1143 Structural Equation Modelling

This course is primarily focused on the applications of multivariate statistics which is more advanced than linear regressions.

3. RESEARCH METHODOLOGY

(1)UIR1113 Research Methodology for Engineering, Science & Technology

This course presents the general steps involved in research methodology. The topics describe the elements required in research methodology such as literature review, research design, data analysis and scientific writing to prepare students in writing research proposal, thesis and scientific publications.

(2)UIR1123 Research Methodology for Social Science and Humanities

The principal aim of this course is to assist learners in the process of identifying research topics and problems, and to provide them with a logical framework in which to consider such problems, the associated methodologies and the results. Both quantitative and qualitative approaches will be emphasised in the course.

(3)UIR1133 Philosophy of Research

The philosophy of science is the consideration of the most basic concepts and principles at work in scientific inquest. Issues discussed include the principles that sciences have in common and how theories of different sciences are related. Two essential assumptions will be discussed, namely (1) scientific thinking is fundamentally rational; (2) scientific knowledge is fundamentally objective.

4. ENGLISH AND PRESENTATION SKILLS

(1)UIE1113 Preparatory English for Postgraduates

This course is designed to develop skills in using English language effectively. The language skills that will be focused on are reading, writing and speaking.

(2)UIE1123 Scientific English Communication

The course aims to further enhance students to become independent users of the English language. The course requires students to read and write various scientific discourse of specific topics by incorporating analytical and critical reading and writing skills.

(3)UIE1133 Presentation Skills

The course aims to develop students' presentation skills. Students will be required to undergo the processes of preparing and delivering presentations, learn how to construct a topic, gather supporting materials, organize the content, and deliver the presentations.

(4)UIE1143 Research Project Presentation Skills

The course will equip students with practical strategies to deliver their research projects effectively. The course will highlight topics on presentation anxiety, verbal, non-verbal and visual communication, and audience interaction through Q&A session.

5. THESIS WRITING

(1)UIT1113 Thesis Writing 1

The course is an overview of the writing and organisational skills necessary for the completion of a thesis. It is designed to help students master the writing of the thesis. It includes construction and writing a thesis—defining the topic, formulating the research question and hypothesis, theory and methodology, seeking out sources, building a bibliography, structuring the thesis.

(2)UIT1123 Thesis Writing 2

The main aim of this course is to provide students with a sound technical knowledge and skills necessary to interpret data that leads to conclusive findings and quality journal papers.

Currently, there are 5 categories offered but in future there is plan to reclassify the categories to include software for thesis writing as shown in Figure 8.1.

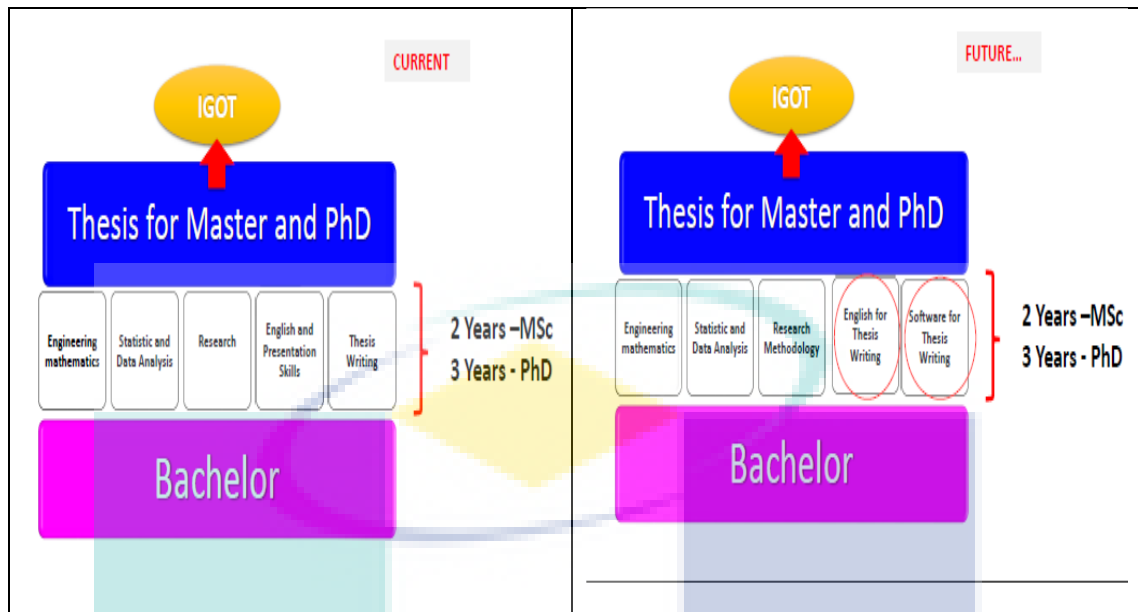


Figure 8.1 Categories of Competency Courses to be Offered in the Future

8.4 Funding Sources

Students can apply to Research & Innovation Department to seek for funding. However, it is subjected to the approval based on availability of fund and other requirements.

Sources of funding available are as follows:

1. Research & Innovation Department have offered some research funding to assist students to register for the competency courses such as:
2. PGRS (Postgraduate Research Scheme)- Compulsory for recipients to register for at least one competency course.
3. UMP RDU
4. UIC (University Industry Collaboration)
5. UMP FLAGSHIP
6. FGRS (Skim Geran Penyelidikan Fundamental)

Research and Innovation Department has been supportive of this initiatives. IPS have conducted roadshows with Research and Innovation Department to increase awareness of the competency courses, their benefits and also the sources of funding available to register for the course. Students are now allowed to be research assistants of

more than one grant, and it is now easier for students to allow to attend training courses conducted by UMP.

8.5 Competency Course Trust Fund

IPS upon consultation with Bursar, have created a Competency Course Trust Fund for supervisors who have used their grants to pay for their supervisees to attend the competency course. A portion of the amount contributed (after deduction of costs), will be placed in the Trust Fund. The supervisors have a right to use the grant for academic purposes.

8.6 Institute Postgraduate Studies Council / *Majlis Institute of Postgraduate Studies (MIPS)*

Marks will be endorsed by MIPS before bringing to *Majlis Pengajian Siswazah Universiti*. Passing mark for Competency course is B-. In future, postgraduate students who have taken the competency courses, might be given a transfer credit and would only need to take a few more courses to be awarded another degree. Figure 8.2 shows the vision of IPS in offering the competency courses in future.

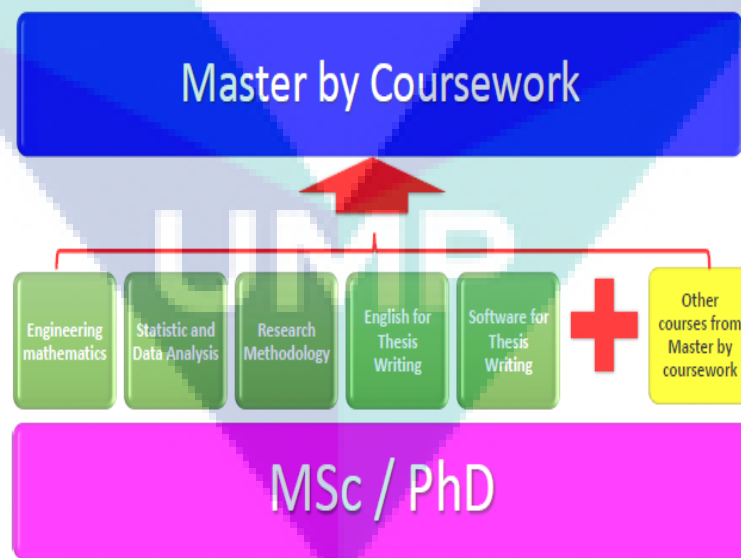
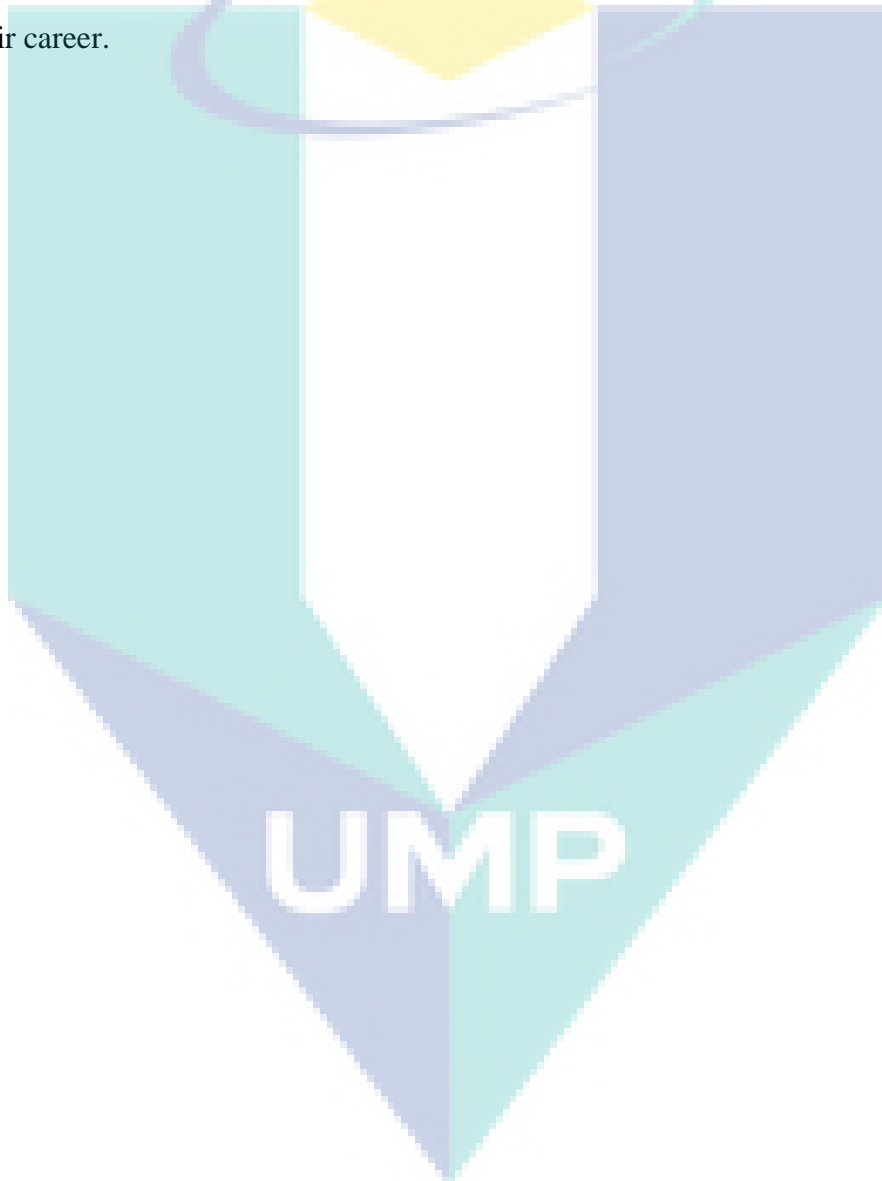


Figure 8.2 Vision of offering the Competency Courses

8.7 Summary

This chapter has explained the 16 competency courses by IPS which is intended to provide the necessary skills and knowledge to the postgraduate students to increase their competency in research. In so doing, IPS believes that it will help to increase iGOT and decrease attrition rate. The competency course will also provide a learning environment for postgraduate students where they can register for any courses that they think might be helpful for them to help them not only in research but for the development of their career.



CHAPTER 9

CONCLUSION

This report has discussed the journey of development of IPS from 2015 to 2019. It has also discussed some of the initiatives taken by IPS in ensuring it achieves its KPI, the main one being iGOT and attrition rate.

Some of the achievements of IPS includes establishing academic guidelines for coursework, mixed mode, masters and PhD by research, industry PhD, Thesis guideline, MRS/DRS guideline and Outcome Based Education Guideline.

IPS has also increase efficiency of its process, such as improving its IPS online system, viva voce process, its documentation, its portal, counter service and workstations.

It has also introduced Research Methodology via MOOCS, SIAP program and its last introduction is the 16 Competency Courses.

All of the initiatives have one common objective of increasing iGOT and decreasing attrition rate in addition to other objectives.

The report has also discussed some of the research findings of ePAT survey alumni survey and workstation survey. IPS through to its tagline of “Continuous Improvements” have taken the findings into considering while charting its future direction.

The report documents some of the initiatives taken which is hope that it can be used for future reference.

REFERENCES

- Hasnah Haron, Mimi Sakinah Abdul Munaim, Arman A.Rahim, Ramle Abid, Ishak Ismail, Fatmawati Latada, Shahrizai Sarif, Kalapana Ramachandran, Ahmad Zarif Ahmad Fauzi, Badariah Mustafa and Wan Azlee Wan Abdullah. 2016. Achieving Academic Excellence Through Increasing Productivity and Decreasing Cost: Report Series 1 (Postgraduate Students' Satisfaction Index), Penerbit UMP.
- MOHE (2016). Enhancing Academic Productivity and Cost Efficiency – University Transformation Program. Putrajaya, Malaysia: MOHE. Retrieved from <https://www.mohe.gov.my/muat-turun/awam/penerbitan-dan-jurnal/university-transformation-programme/188-the-unitp-silver-book/file>
- UMP Course fees (2018, February) retrieved from <https://ips.ump.edu.my/index.php/en/academics/245-course-fees-2>
- UMP IPS research methodology courses via mooc (2018) retrieved from <https://ips.ump.edu.my/index.php/en/ips-mooc>
- UMP Postgraduate association report (2016) retrieved from <https://ips.ump.edu.my/index.php/en/14-academic/49-postgraduate-association-club-postac>
- UMP Postgraduate association report (2017) retrieved from https://ips.ump.edu.my/images/PGA/Poster_PGA_2017.pdf
- UMP Postgraduate association report (2018) retrieved from <https://ips.ump.edu.my/images/lain-lain/pga%202018.jpg>

APPENDIX

STUDENTS

INSTITUTE OF POSTGRADUATE STUDIES

SECTION A

This section seeks information about you as a respondent of the questionnaire. Please tick (/) the appropriate response in the boxes provided.

1. Age

<input type="checkbox"/>	25 years old or younger
<input type="checkbox"/>	26 to 35 years old
<input type="checkbox"/>	36 to 45 years old
<input type="checkbox"/>	46 to 55 years old
<input type="checkbox"/>	56 to 65 years old
<input type="checkbox"/>	66 years and above

2. I am registered as doing a:

<input type="checkbox"/>	PhD by research
<input type="checkbox"/>	PhD by mix mode
<input type="checkbox"/>	DBA/ D. Eng
<input type="checkbox"/>	Masters in research
<input type="checkbox"/>	Masters by coursework
<input type="checkbox"/>	Masters by mix mode
<input type="checkbox"/>	Others (please specify) :

3. Gender

<input type="checkbox"/>	Male
<input type="checkbox"/>	Female

4. Ethnicity

<input type="checkbox"/>	Malay
<input type="checkbox"/>	Chinese
<input type="checkbox"/>	Indian
<input type="checkbox"/>	Middle Eastern
<input type="checkbox"/>	European
<input type="checkbox"/>	African
<input type="checkbox"/>	Others (please specify):

5. For fees purposes, is your normal place of residence registered as:

<input type="checkbox"/>	Malaysian
<input type="checkbox"/>	Non-Malaysia

6. I am (select all that apply):

<input type="checkbox"/>	Self-funded
<input type="checkbox"/>	Government funded
<input type="checkbox"/>	Institution funded
<input type="checkbox"/>	Industry funded
<input type="checkbox"/>	Funded overseas
<input type="checkbox"/>	Others (please specify):

7. I am currently registered as studying:

<input type="checkbox"/>	Full-time
<input type="checkbox"/>	Part-time

8. Category of students (*Kategori Pelajar*)

<input type="checkbox"/>	International (<i>Antarabangsa</i>)
<input type="checkbox"/>	Local (<i>Dalam Negeri</i>)

9. I am studying at (faculty): _____

10. My discipline is : _____

SECTIONS B AND C ARE FOR RESEARCH AND MIX-MODE POSTGRADUATE STUDIES. FOR COURSEWORK BASED POSTGRADUATE STUDIES, PLEASE PROCEED TO SECTION E.

SECTION B: SUPERVISION AND SKILLS DEVELOPMENT

Please rate the extent of your agreement to the following statements.

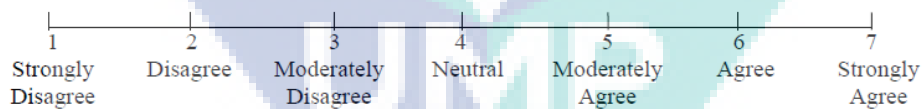
1 2 3 4 5 6 7
 Strongly Disagree Moderately Neutral Moderately Agree Strongly
 Disagree Disagree Agree Agree

	STATEMENTS	1	2	3	4	5	6	7
1.	My supervisor/s make a real effort to understand any difficulties I face							
2.	My supervisor provides me with appropriate guidance with refining topic selection and clarification							
3.	My supervisor provides me with appropriate guidance in planning my research, identifying important goals and meeting deadlines							
4.	My supervisor encourages me to do research in a self directed or independent manner							
5.	My supervisor provides an atmosphere in which I feel comfortable raising issues that concern me							
6.	My supervisor is available for discussions/consultations when needed							
7.	My supervisor sets aside an uninterrupted time for us to discuss my research progress							

8.	My supervisor provides an atmosphere in which I feel comfortable raising issues that concern me									
9.	My supervisor has made expectations of me clear									
10.	My supervisor encourages constructive discussions about my progress									
11.	My supervisor has sufficient expertise to guide me in my research									
12.	My supervisor encourages me to present my work at appropriate seminars and conference									
13.	My supervisor makes real effort to assist me in my research									
14.	My institution values and responds to feedback from research degree students									
15.	I am encouraged to think about the range of skills development that are available to me.									
16.	I understand the required standard for the thesis.									
17.	I have adequate access to the equipment necessary for my research.									
18.	I have been given good guidance in topic selection and refinement by my supervisor/s.									
19.	I have a suitable working space.									
20.	I am encouraged to reflect on my professional development needs.									
21.	My department provides opportunities for social contact with other research students.									
22.	My department provides opportunities for me to become involved in the broader research culture.									
23.	I know who to approach, or where to find information related to any element of my postgraduate programme.									
24.	There are adequate opportunities available for me to further develop my research skills.									
25.	I have received good guidance in my literature search from my supervisor/s.									
26.	I understand my responsibilities as a postgraduate student.									
27.	There are adequate opportunities available for me to further develop my soft skills (communication, presentation, teamwork).									
1.	As a result of my experience so far I feel confident about managing a research pro									

SECTION C AND D ARE FOR RESEARCH STUDENTS

SECTION C: WORKSTATION SERVICE OF IPS
 2. Rate the extent of your agreement to the following statements.



STATEMENTS	1	2	3	4	5	6	7
1. There is sufficient availability of workstation							
2. The accessibility of workstation (can access any time).							
3. The safety and security of workstations							

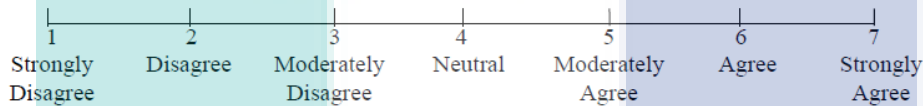
4.	Transfer of workstation ownership									
5.	Cleanliness of workstation									
6.	Research ambience of workstation									
7.	Sufficient facility in workstation									
8.	Information communicated regarding workstation									
9.	Documentation to be filled is easy to understand									
10.	Rules and Guidelines regarding workstation is easily understood									

SECTION D: THESIS EXAMINATION

1. Have you sat for your final viva examination?

<input type="checkbox"/>	No (If No, please go to Section E)
<input type="checkbox"/>	Yes (If Yes, please respond to the following statements):

Please rate the extent of your agreement to the following statements.

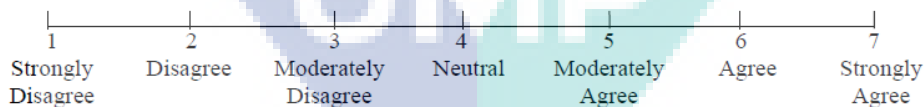


STATEMENTS	1	2	3	4	5	6	7
1. The thesis examination process was fair							
2. The examination of my thesis was completed in a reasonable time scale							
3. I was given adequate support and guidance in preparation for my viva voce							
4. I was given adequate support and guidance to make any changes to my thesis following my viva voce							
5. Process flow of viva voce is clear							
6. Clear assessments were provided by IPS							
7. Scheduling of viva voce was done well							

SECTIONS E-G ARE FOR COURSEWORK BASED AND MIX-MODE POSTGRADUATE STUDIES

SECTION E: COURSE DELIVERY (LEARNING OUTCOME AND SUBJECT MATTER)

Please rate the extent of your agreement to the following statements.

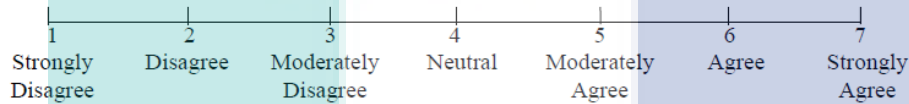


STATEMENTS	1	2	3	4	5	6	7

1.	The overall content of the course corresponds to the course description (fulfills the objectives)									
2.	The teaching methods (lecture/ tutorial) applied were appropriate.									
3.	The overall course was well structured to achieve learning outcomes(balance between lectures, tutorials and practical)									
4.	The overall course was well organized (eg: timely access to material, notification of changes)									
5.	The course workload(s) was manageable.									
6.	The coursework and continuous assessment correlated with the course									
7.	Lecture and exam schedules are not a burden and can be reviewed within the period prescribed									
8.	I was able to gain knowledge on theories, methods and application related to the field I was enrolled in									
9.	I am able to transfer learned theories into practice									
10.	The courses in my studies met my expectations									

SECTION F: TEACHING AIDS & LEARNING ACTIVITIES

Please rate the extent of your agreement to the following statements.



STATEMENTS	1	2	3	4	5	6	7
1. Course materials(notes, presentation files) and references (books, url) were relevant and useful							
2. The overall quality of learning activities and teaching in the programme was good.							
3. The lecturer(s) carried out their duties professionally							
4. The lecturer(s) responded to questions and comments clearly and concisely							
5. Teaching aids facilities in the hall / lecture room were conducive and adequate							
6. Lab facilities were conducive and adequate							
7. Wi-Fi / Hotspot facilities were good							
8. Resource centre facilities were adequate and appropriate							

SECTION G TO N : FOR ALL POSTGRADUATE STUDIES

SECTION G: INSTITUTE OF POSTGRADUATE STUDIES(IPS)

1. Please tick the services that you have sought from IPS and please rate the quality please tick which ones apply to you)

2. Average usage of Institute of Postgraduate Studies' services. Please tick (/).

<input type="checkbox"/>	1-5 times per month
<input type="checkbox"/>	6-10 times per month

More than 10 times per month

3. Service quality can be defined as:

The ability of IPS to provide a prompt response, ability to deliver promises, ability to listen and understand, ability to give accurate and consistent advice to the issue raise.

Please rate the extent of agreement with the following statements

1 2 3 4 5 6 7
 Strongly Disagree Moderately Neutral Moderately Agree Strongly
 Disagree Disagree Agree Agree

INSTITUTE OF POSTGRADUATE SERVICES		1	2	3	4	5	6	7
1	Institute of Postgraduate Studies is equipped with the latest facilities.							
2	Employees of the Institute of Postgraduate Studies shows professionalism in offering service .							
4	The procedures and requirements of Institute of Postgraduate Studies are clear.							
5.	Institute of Postgraduate Studies s provide various channels of communication.							
6.	Institute of Postgraduate Studies provide prompt response to request.							
7.	Institute of Postgraduate Studies is competent in performing their requested tasks							
8.	Institute of Postgraduate Studies delivers services within the expected time frame							
9.	Institute of Postgraduate Studies is committed to perform the task undertaken							
10.	Institute of Postgraduate Studies should have employees who are technically competent to perform the service							
11	Institute of Postgraduate Studies provides the necessary academic guidelines on postgraduate studies							
12	The progress reports of students is given on a timely basis							
13	Institute of Postgraduate Studies have their clients' best interest at heart.							
14	Institute of Postgraduate Studies take every complaints seriously however minor they are							
15	Academic Administration Management at the Institute of Postgraduate Studies (IPS) was effective and satisfactory							
16	Dissemination of information was effective							
17	IPS staff can be contacted easily							
18	All the necessary forms and information are accessible on IPS website							
19	Up to date information is available on the IPS website							
20	The student portal (IMS) helps in the management of students' information and studies							
21	Compulsory modules of IPS is beneficial to my research							
22	Method of assessment of compulsory modules is fair							

More than 10 times per month

3. Service quality can be defined as:

The ability of IPS to provide a prompt response, ability to deliver promises, ability to listen and understand, ability to give accurate and consistent advice to the issue raise.

Please rate the extent of agreement with the following statements

1 2 3 4 5 6 7
 Strongly Disagree Moderately Neutral Moderately Agree Strongly
 Disagree Disagree Agree Agree

INSTITUTE OF POSTGRADUATE SERVICES		1	2	3	4	5	6	7
1	Institute of Postgraduate Studies is equipped with the latest facilities.							
2	Employees of the Institute of Postgraduate Studies shows professionalism in offering service .							
4	The procedures and requirements of Institute of Postgraduate Studies are clear.							
5.	Institute of Postgraduate Studies s provide various channels of communication.							
6.	Institute of Postgraduate Studies provide prompt response to request.							
7.	Institute of Postgraduate Studies is competent in performing their requested tasks							
8.	Institute of Postgraduate Studies delivers services within the expected time frame							
9.	Institute of Postgraduate Studies is committed to perform the task undertaken							
10.	Institute of Postgraduate Studies should have employees who are technically competent to perform the service							
11	Institute of Postgraduate Studies provides the necessary academic guidelines on postgraduate studies							
12	The progress reports of students is given on a timely basis							
13	Institute of Postgraduate Studies have their clients' best interest at heart.							
14	Institute of Postgraduate Studies take every complaints seriously however minor they are							
15	Academic Administration Management at the Institute of Postgraduate Studies (IPS) was effective and satisfactory							
16	Dissemination of information was effective							
17	IPS staff can be contacted easily							
18	All the necessary forms and information are accessible on IPS website							
19	Up to date information is available on the IPS website							
20	The student portal (IMS) helps in the management of students' information and studies							
21	Compulsory modules of IPS is beneficial to my research							
22	Method of assessment of compulsory modules is fair							

23	Online method of learning of compulsory modules is helpful									
24	Face to face method of learning of compulsory modules is helpful									
25	Requirement to submit research plan by IPS is useful									
26	Requirement for graduation is clear									
27	Process flow of progress report is clear									
28	Information regarding availability of scholarship from UMP is clearly given									
29	IPS training programme helps me is beneficial									
30	3MT competition is beneficial									
31	NCON- PGR is beneficial									
32	Registration process is efficiently done									
33	Student activities is handled well by IPS									
34	Admission requirement is flexible									
35	Requirements of medical report during registration should be upheld in any circumstances									

6. Please rate the quality of services given by IPS based on the 7 Likert Scale below:

1	2	3	4	5	6	7
Very Poor	Poor	Fair	Good	Very Good	Excellent	Exceptional

Unit	Core Functions of Unit	1	2	3	4	5	6	7
Admission	Admission inquiry, application, entry requirements, offer letter, compulsory courses.							
Academic	Course registration, add & drop, defer and withdraw process, progress report, graduation, transcript & scroll.							
Viva Voce	Thesis submission for viva voce, viva voce date confirmation, thesis format checking, thesis correction, final thesis submission.							
Administration	DSS/GRS/DRS/MRS inquiry, application/ application requirement and extension.							
Overall Quality								

7. Overall, are you satisfied with the service quality given by Institute of Postgraduate Studies?

Yes No

SECTION H: COUNTER SERVICE OF IPS

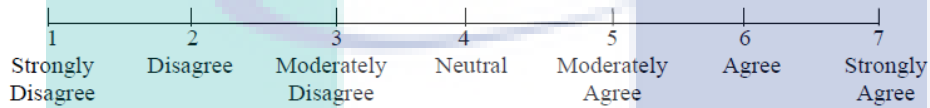
Please rate the extent of your agreement to the following statements.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Moderately Disagree	Neutral	Moderately Agree	Agree	Strongly Agree

	STATEMENTS	1	2	3	4	5	6	7
2.	The staff at the service counter shows a sincere interest in dealing with my issue							
3.	The staff at the service counter is knowledgeable							
4.	The staff at the service counter is neatly dressed							
5.	The staff at the service counter shows professionalism in dealing with my issue							
6.	The staff at the service counter understands the needs of the students							
7.	The staff at the service counter has a pleasant attitude							
8.	The staff at the service counter response to questions raised in a timely manner							

SECTION I: INTELLECTUAL CLIMATE & INFRASTRUCTURE

Please rate the extent of your agreement to the following statements.

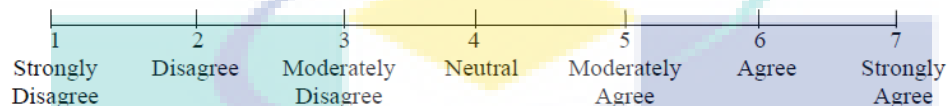


	STATEMENTS	1	2	3	4	5	6	7
1.	There is appropriate financial support for research activities.							
2.	The research ambience in my department or faculty stimulates my work.							
3.	My experience so far has improved my analytical skills.							
4.	I understand the standard of work expected.							
5.	There is adequate provision of computing resources and facilities.							
6.	I understand the requirements and deadlines for formal monitoring of my progress.							
7.	I understand the requirements of thesis examination.							
8.	My experience so far has helped me to develop a range of communication skills.							
9.	There is adequate provision of library facilities.							
10.	My supervisor/s provide helpful feedback on my progress.							
11.	I am encouraged to reflect on my career development needs.							
12.	As a result of my experience so far I have improved my ability to learn independently.							
13.	My supervisor/s are available when I need them							
14.	I have the technical support I need.							
15.	I feel integrated into my department's community.							

16	My department provides a good seminar programme for postgraduate students.								
17	I am aware of my institution's responsibilities towards me as a research degree student.								
18	I prefer face-to-face learning.								
19	I prefer distance learning.								

SECTION J: TEACHING OPPORTUNITIES

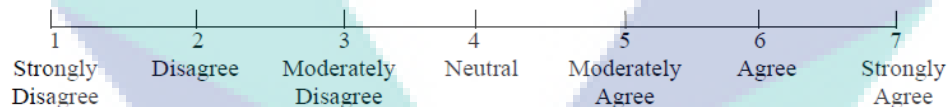
Please rate the extent of your agreement to the following statements.



	STATEMENTS	1	2	3	4	5	6	7
1	I have had adequate opportunity to gain experience of teaching (e.g., lectures, seminars or workshops) whilst doing my postgraduate programme.							
2	I have been given adequate support and guidance for my teaching.							
3	I think the experience that I have gained through teaching has been a worthwhile aspect of my postgraduate programme.							

SECTION K: SUPPORT SYSTEMS

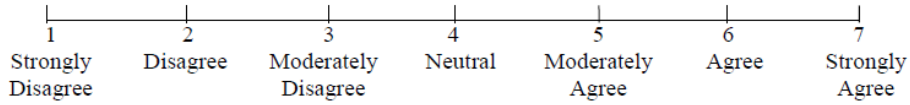
Please rate the extent of your agreement to the following statements.



	STATEMENTS	1	2	3	4	5	6	7
1	My friends and family are emotionally supportive of my studies.							
2	My spouse/partner is supportive of my studies.							
3	My friends and family are understanding of any demands placed upon me by my studies.							
4	My spouse/partner is understanding of any demands placed upon me by my studies.							
5	My employer is supportive of my studies.							
6	My personal finances are supportive of my studies.							

SECTION L: MEETING EXPECTATIONS

Please rate the extent of your agreement to the following statements.



	STATEMENTS	1	2	3	4	5	6	7
1	Supervisory support and guidance.							
2	Opportunities to develop a range of research skills.							
3	Opportunities to develop a range of soft skills.							
4	Access to appropriate facilities.							
5	The research environment.							
6	Provision of guidance of institutional standards and expectations for your postgraduate programme.							
7	Library is well equipped							
8	Training provided by library is beneficial							
9	Hostel is well equipped with facilities							
10	Hostel is safe to stay in							
11	Visa and immigration issues is well managed							
12	Clear guidelines and processes are provide by International Office							
13	Laboratory and equipment services is well managed							
14	Tuition fees is reasonable							
15	Method of payment of tuition fees is easonable							

SECTION M: GOAL

1. I have completed the progress of my postgraduate studies within the planned timescale(based on my research plan/Gantt Chart)?

<input type="checkbox"/>	No
<input type="checkbox"/>	Yes

SECTION N : AREAS FOR IMPROVEMENT:

Please provide further information about your experience of your postgraduate studies. What would you like to recommend to improve your experience?

***** END OF QUESTIONNAIRE *****

