STUDENT HANDBOOK

JABATAN
TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

Second Edition

STUDENT HANDBOOK

INFORMATION TECHNOLOGY & COMMUNICATION DEPARTMENT

Second Edition, June 2017

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Pauh Putra, 02600 Arau,
Perlis

EDITORIAL COMMITTEES

FROM THE DIRECTOR

On behalf of Politeknik Tuanku Syed Sirajuddin, Perlis, I would like to welcome all new students with the hope that this would be the beginning of a wonderful journey towards fulfilling your dream.

As part of our mission to create a conducive learning environment, we take pride in providing and exposing students to various innovative teaching approaches. Guided by competent educators, you are embracing a cutting edge technology based education which empowers our future graduates with all the right ingredients to become a productive employee to any given organization.

The coming years of study would be crucial for all the students as you will be adapting yourselves to the higher learning education system, as well as new circle of social life. These challenges might be beyond your comfort zone, but eventually would help develop a wholesome being.

I urge all of you to grab the opportunities to develop your mind and self here. Expand your horizon by actively taking parts in various clubs, students' organizations, a wide spectrum of extracurricular activities, and also entrepreneurial opportunities. We would create as many platforms as possible for you to display your talents and creativity as a way to contribute to the polytechnic.

In this comprehensive handbook you will find PTSS policies and regulations regarding all the courses offered, grading system and other services available. Look through it thoroughly so that you will be well prepared to embark into a new chapter of your life. Lastly, I wish you great happiness and success in everything you do.

Thank you.

Sincerely,

DR. HAJI MOHD ZAHARI BIN ISMAIL
Director
Politeknik Tuanku Syed Sirajuddin

1.0 INTRODUCTION

Politeknik Tuanku Syed Sirajuddin is a comprehensive, learner centered higher education institution that serves its local and regional learners and their communities through high-quality and flexible education and training. It is aimed to develop student's employability skills to meet the needs of a more dynamic economy, which values innovation and productivity. Programmes include a global perspective that will enable graduates to make a valuable contribution to the wider society as it changes in response to regional and international competition and demand.

PTSS programmes include a variety of Outcome-Based Education teaching approaches, adding value to PTSS teaching and learning which cater to students seeking a quality polytechnic education and training.

The PTSS Student Handbook provides students with information on many facets of college life such as policies, procedures and services. It is written for every student enrolled in one or more courses at PTSS.

This Handbook is aimed to guide students through the various procedural steps that lead to a Diploma study. It also provides graduate program descriptions, the requirements needed to obtain a graduate Diploma, and a clear outline of the procedural steps that students need to follow. Students are also provided with information on matters related to general administration such as student services and facilities, campus disciplinary measures, student organizations and other relevant matters.

This book serves as a preliminary guide and does not purport to completely address every policy, procedure and regulation. In addition no claim is made that this document covers all the rules and regulations in effect now at PTSS. Students must refer to the relevant PTSS Department programmes and services publications and other Departments and Units Policies for further information.

2.0 VISION & MISSION

DEPARTMENT OF POLYTECHNIC EDUCATION

VISION

To become the premier TVET institutions by industries lead

MISSION

Providing access to quality of TVET Programme and recognized

TUANKU SYED SIRAJUDDIN POLYTECHNIC

VISION

To become a superior TVET institutions by 2025

MISSION

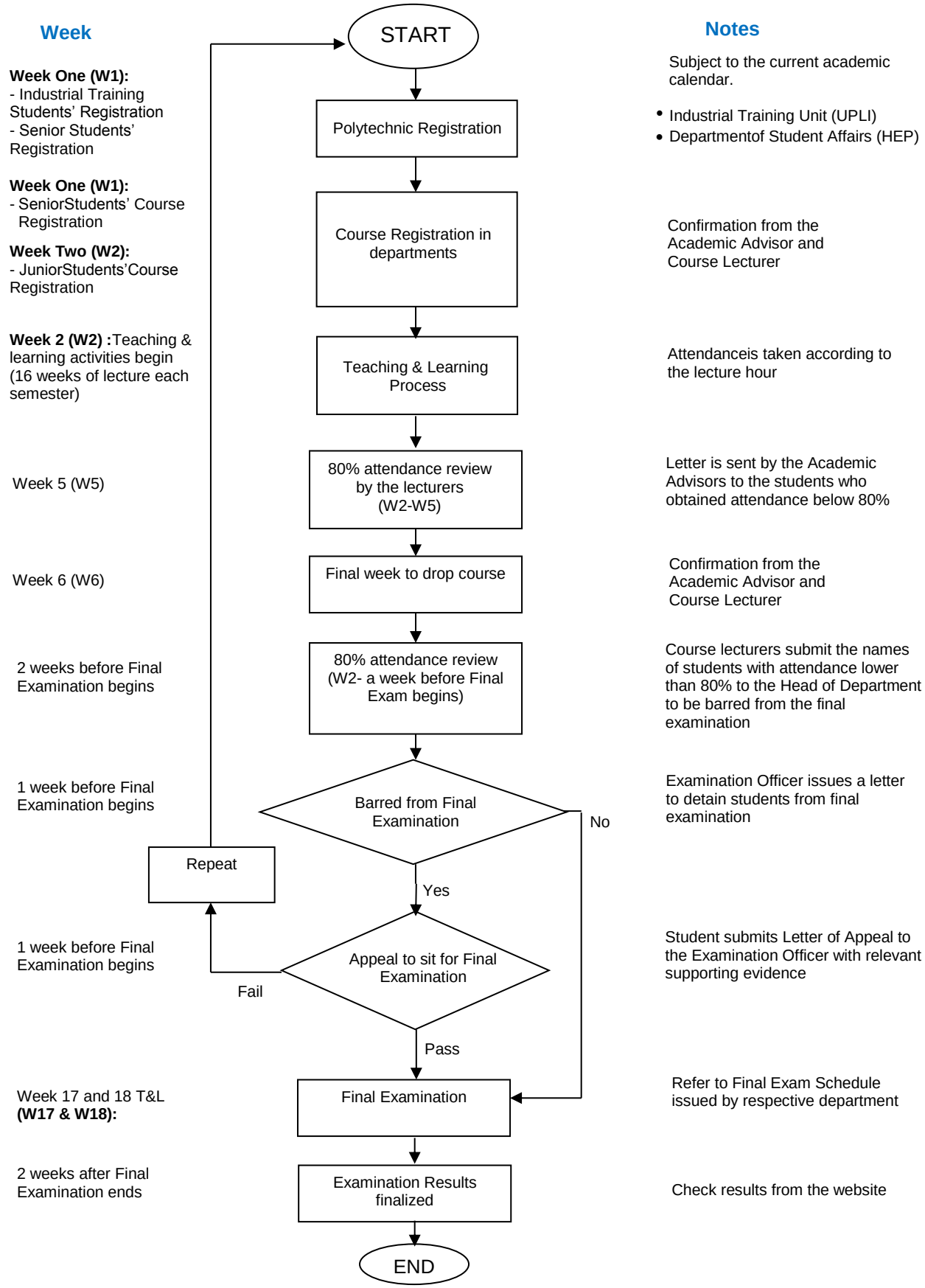
To implement the quality of TVET programme and recognized

Producing well balanced and competitive graduates

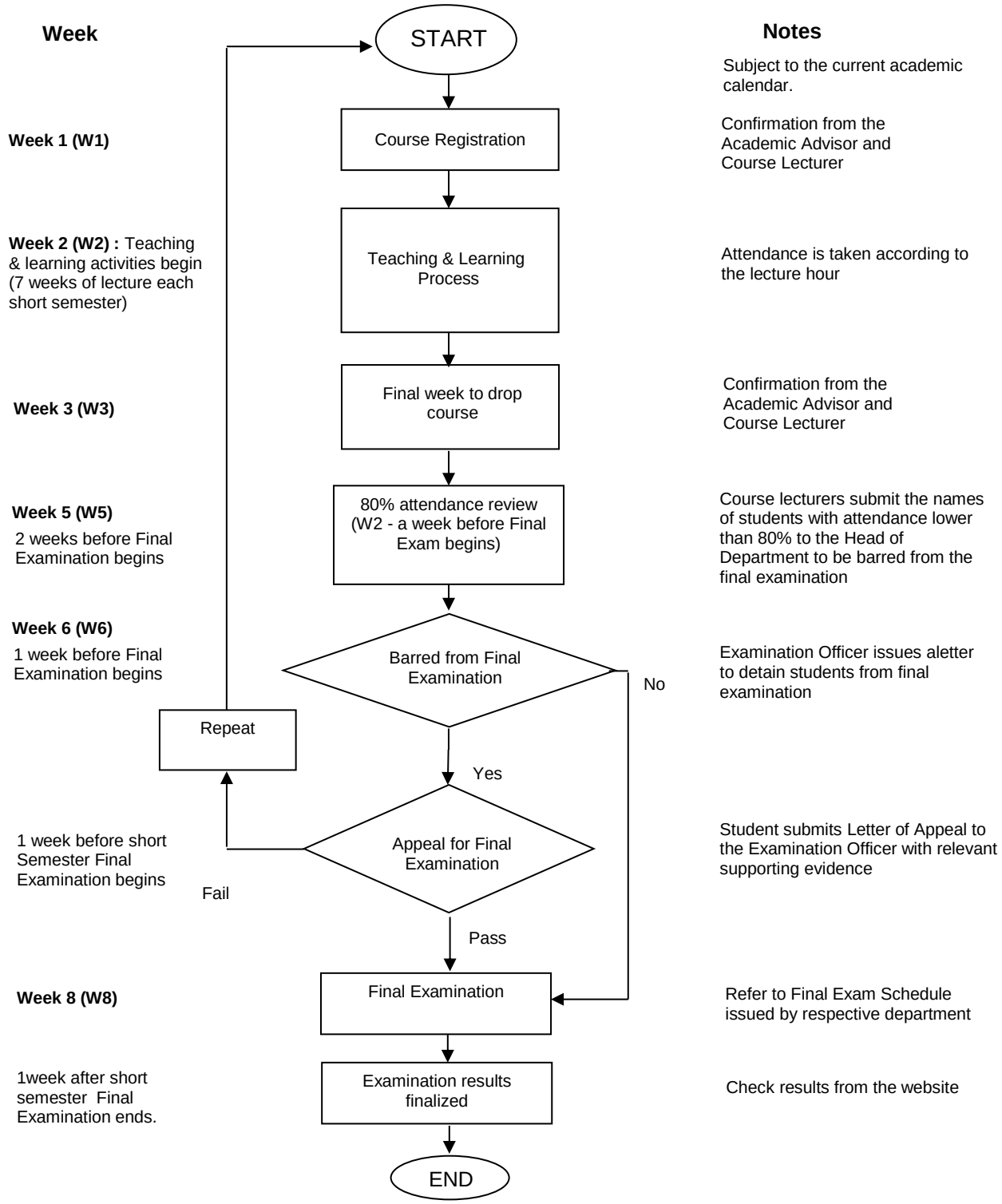
MOTTO

Knowledge drive Development

3.0 ACADEMIC FLOW CHART



3.1 ACADEMIC FLOW CHART FOR SHORT SEMESTER

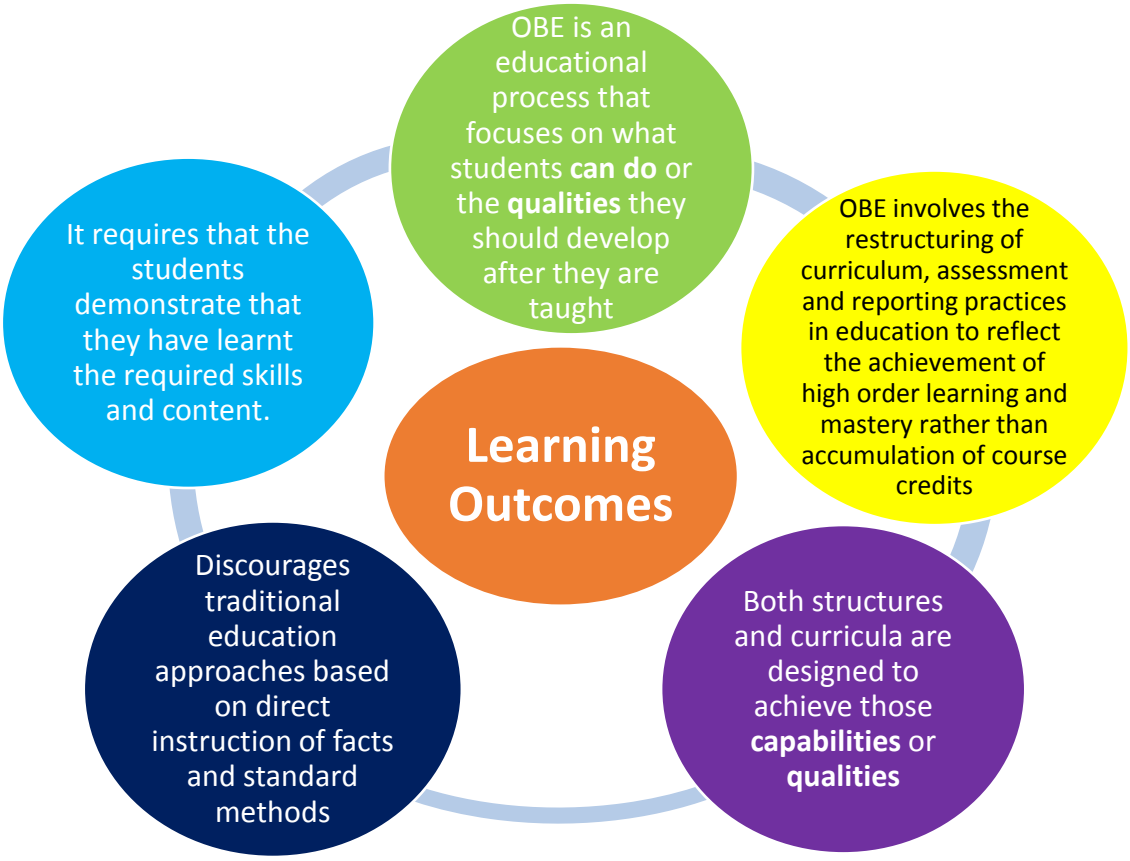


4.0 OUTCOME-BASED EDUCATION (OBE)

Outcome-based education (OBE) is an educational model for students to demonstrate their knowledge and able to perform according to the required outcomes. A student-centred approach focuses on students' learning. It starts with a clear picture of what students should know, what they should be able to do, and what desirable attitudes and values needed to organize the curriculum, instruction, and assessment to ensure an ultimate learning (Spady, 1994:1). Thus, OBE involves the restructuring of curriculum and assessment that reflects achievement of high learning order and mastery learning.

OBE helps students to be aware of what they should learn, aware of what they are learning and the control over their own learning. It leads to successful student learning and encourages lecturers to be well prepared. It also provides students with *appropriate, purposeful* learning experiences and opportunities for students to develop originality, self-motivation and independence while acquiring useful knowledge and skills.

4.1 WHAT IS OUTCOME-BASED EDUCATION (OBE)

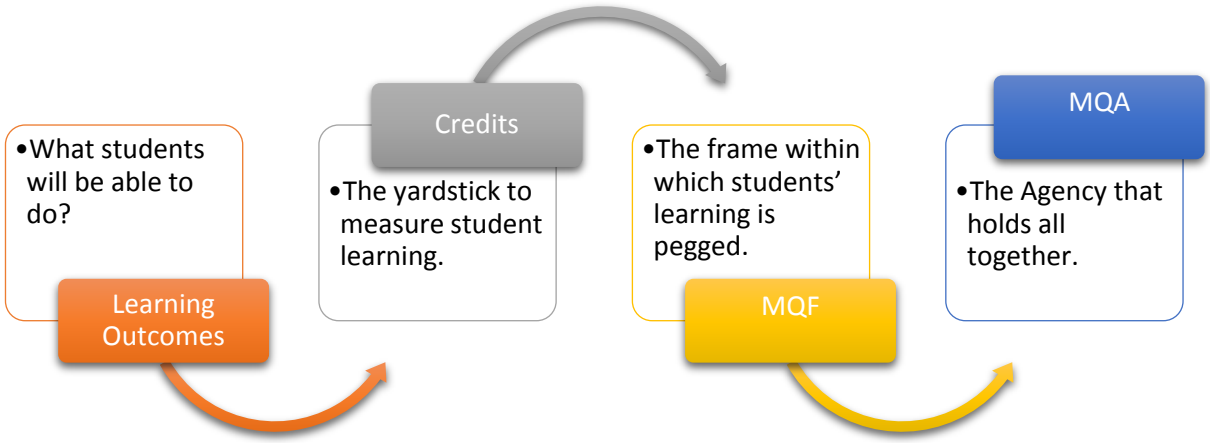


4.2 ACREDITATION PROCESS

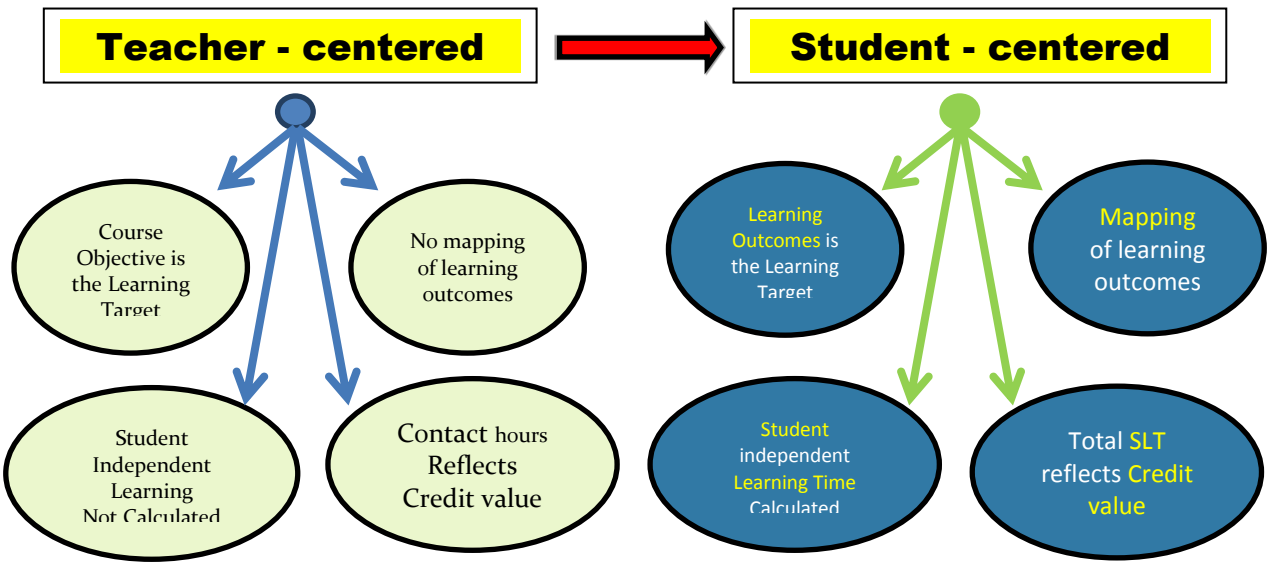
Reference Number : MQA/FA3315
Certificate Number : 09614
Name of Qualification : Diploma in Information Technology (Networking)

Reference Number : MQA/FA3316
Certificate Number : 09615
Name of Qualification : Diploma in Information Technology (Programming)

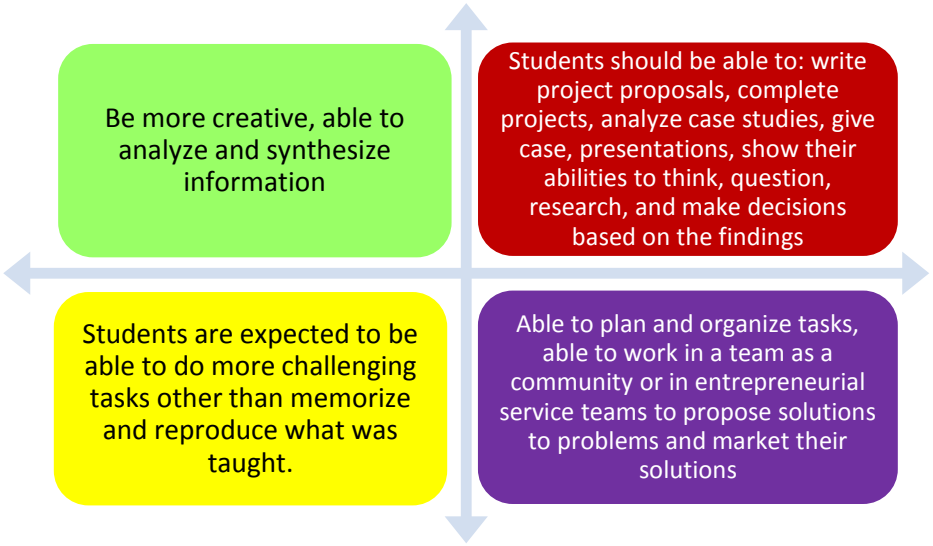
Reference Number : MQA/FA3317
Certificate Number : 09616
Name of Qualification : Diploma in Digital Technology



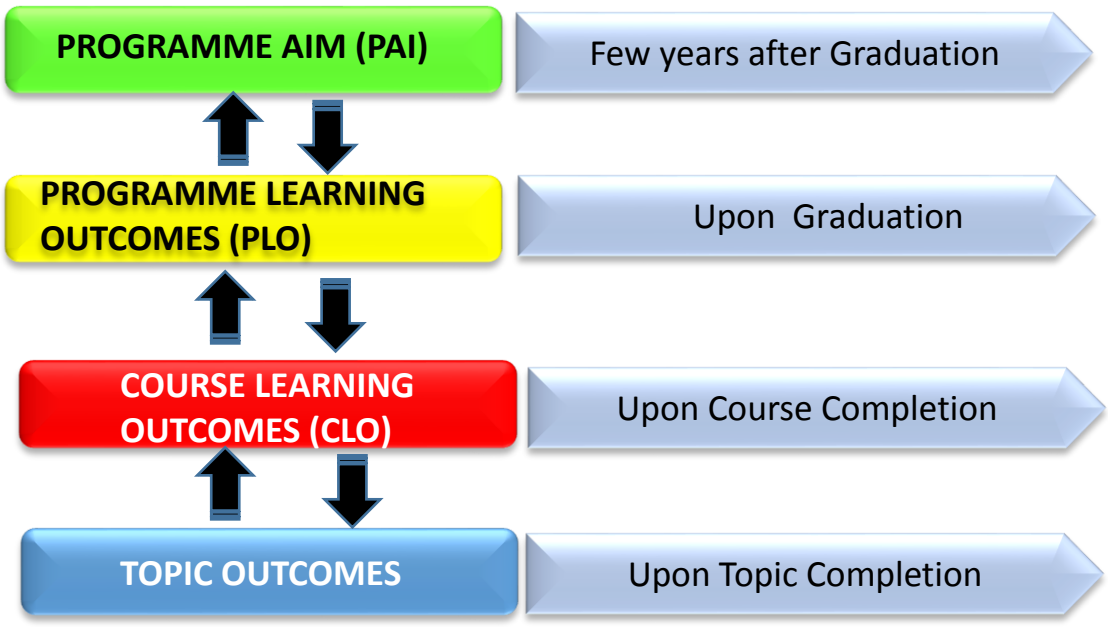
4.3 HOW DOES OBE AFFECT TEACHING-LEARNING?



4.4 EXPECTATIONS ON STUDENTS



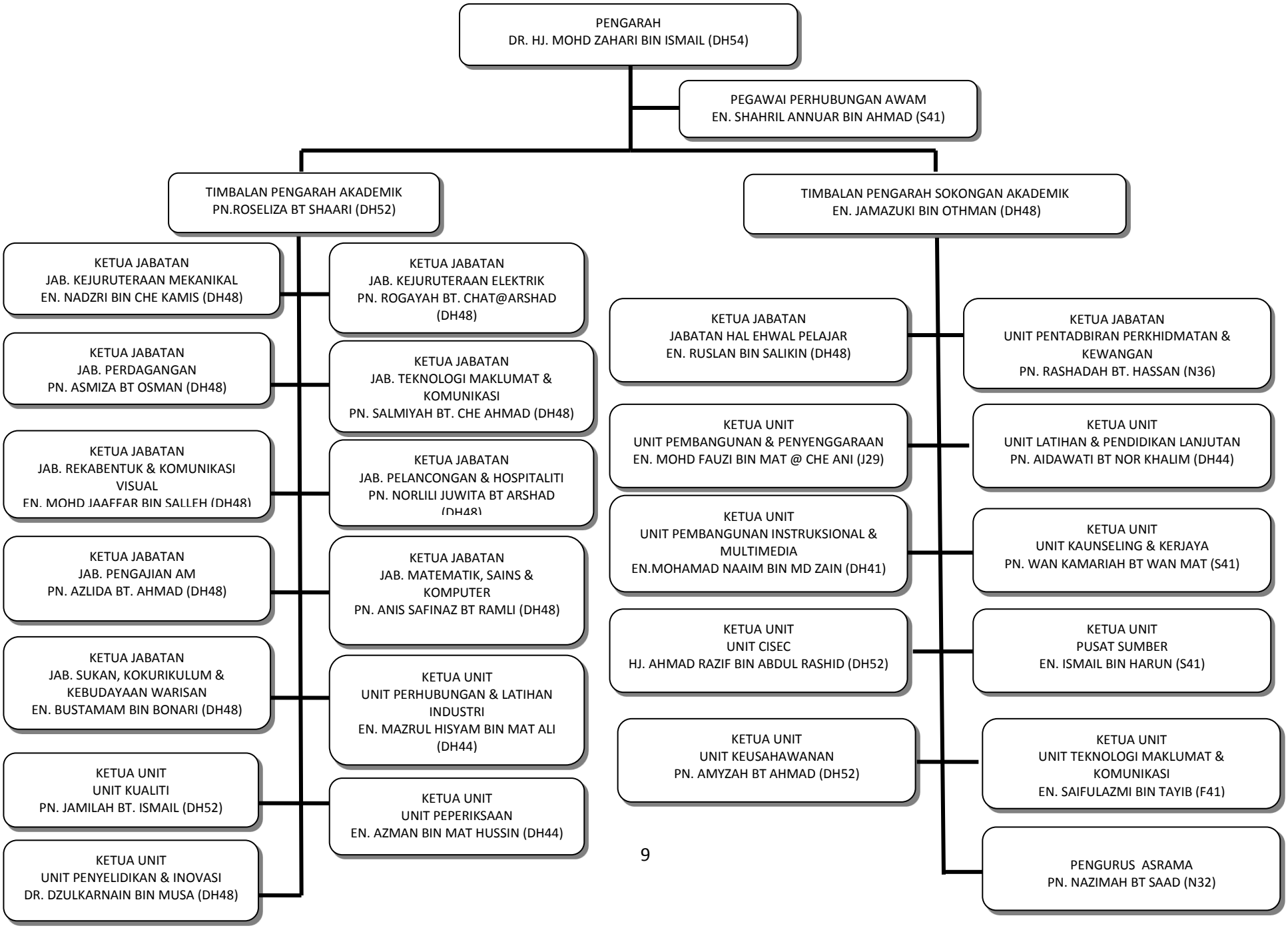
4.5 DIFFERENT LEVELS OF OBE



4.7 LEARNING DOMAIN (LD)

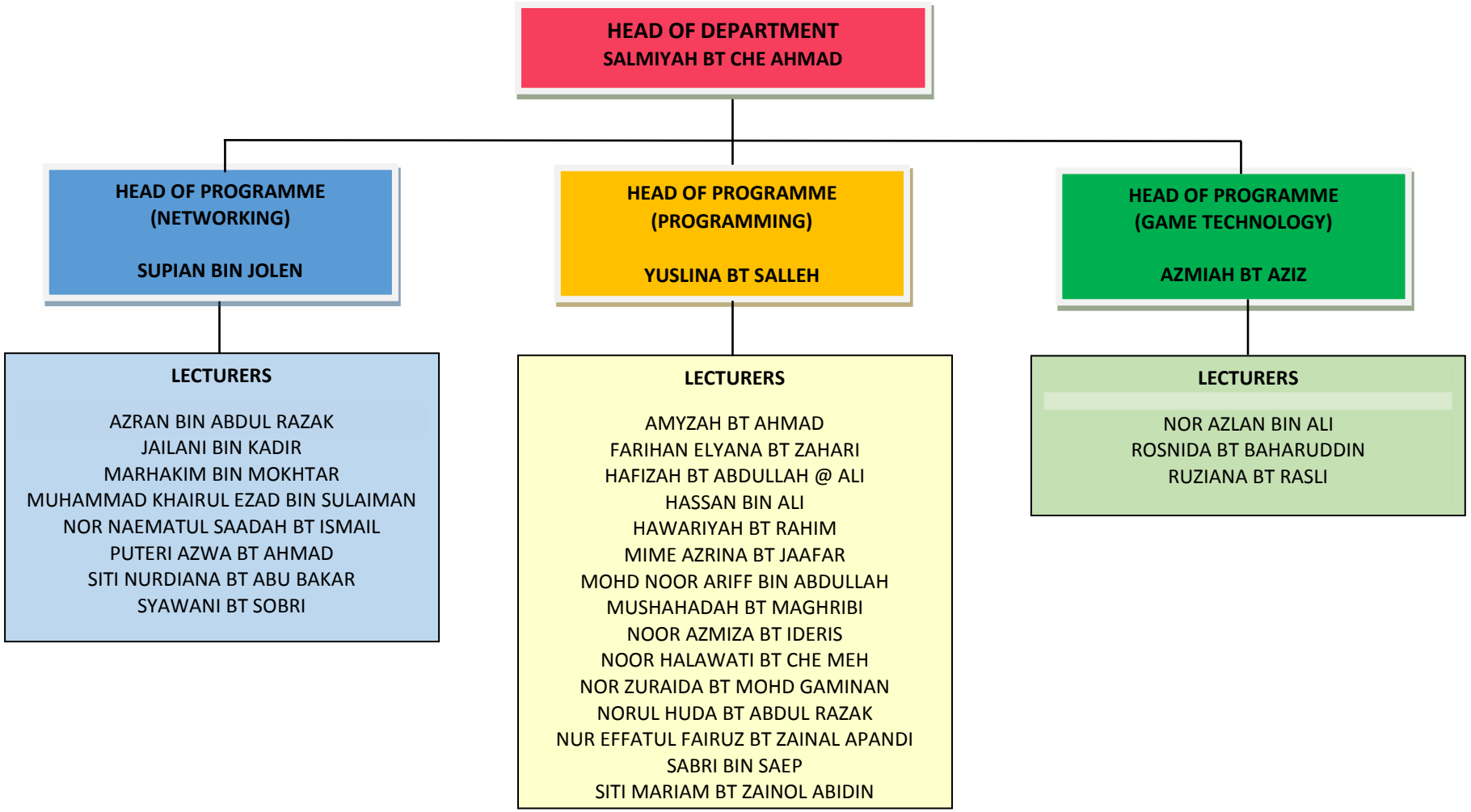
Learning Domain (LD)
LD 1 Knowledge
LD 2 Practical Skills
LD 3 Communication Skills
LD 4 Critical Thinking and Problem Solving Skills
LD 5 Social Skills and Responsibilities
LD 6 Continuous Learning and Information Management Skills
LD 7 Management and Entrepreneurial Skills
LD 8 Professionalism, Ethics and Moral
LD 9 Leadership and Teamwork Skills

5.0 MANAGEMENT ORGANISATION CHART

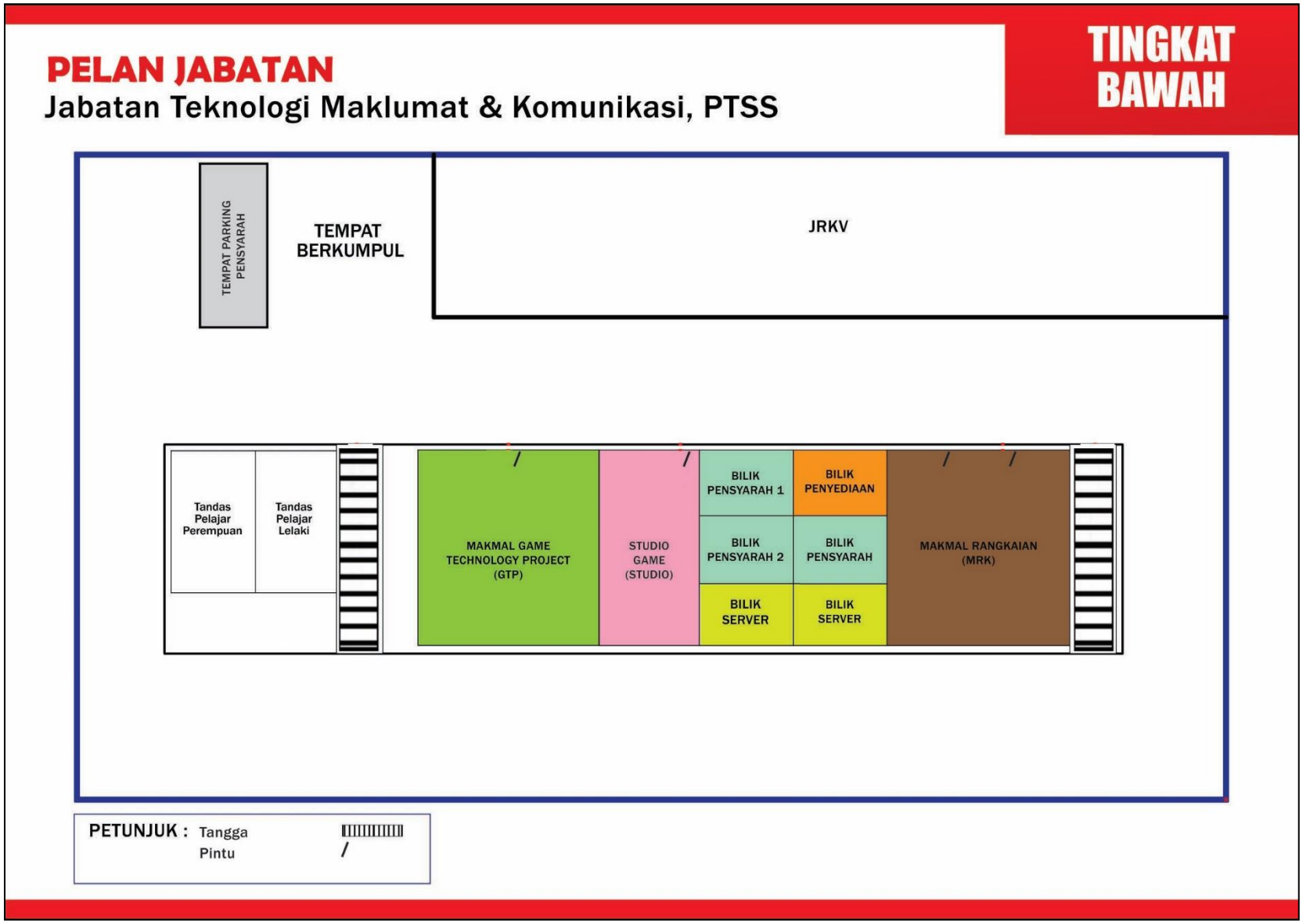


6.0 INFORMATION TECHNOLOGY & COMMUNICATION DEPARTMENT

6.1 DEPARTMENT ORGANISATION CHART



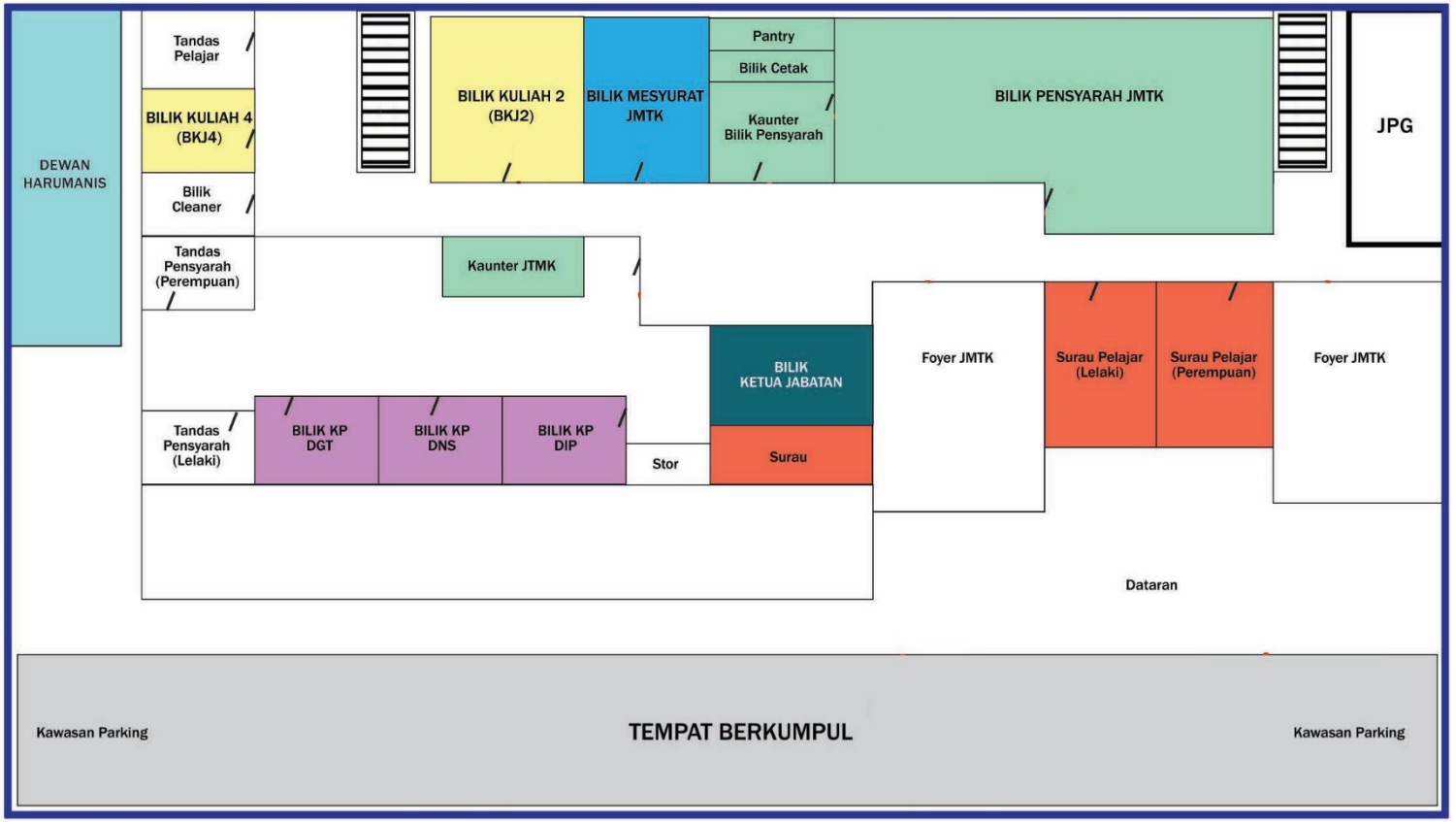
6.2 INFORMATION TECHNOLOGY AND COMMUNICATION DEPARTMENT SITE MAP



PELAN JABATAN

Jabatan Teknologi Maklumat & Komunikasi, PTSS

TINGKAT 1

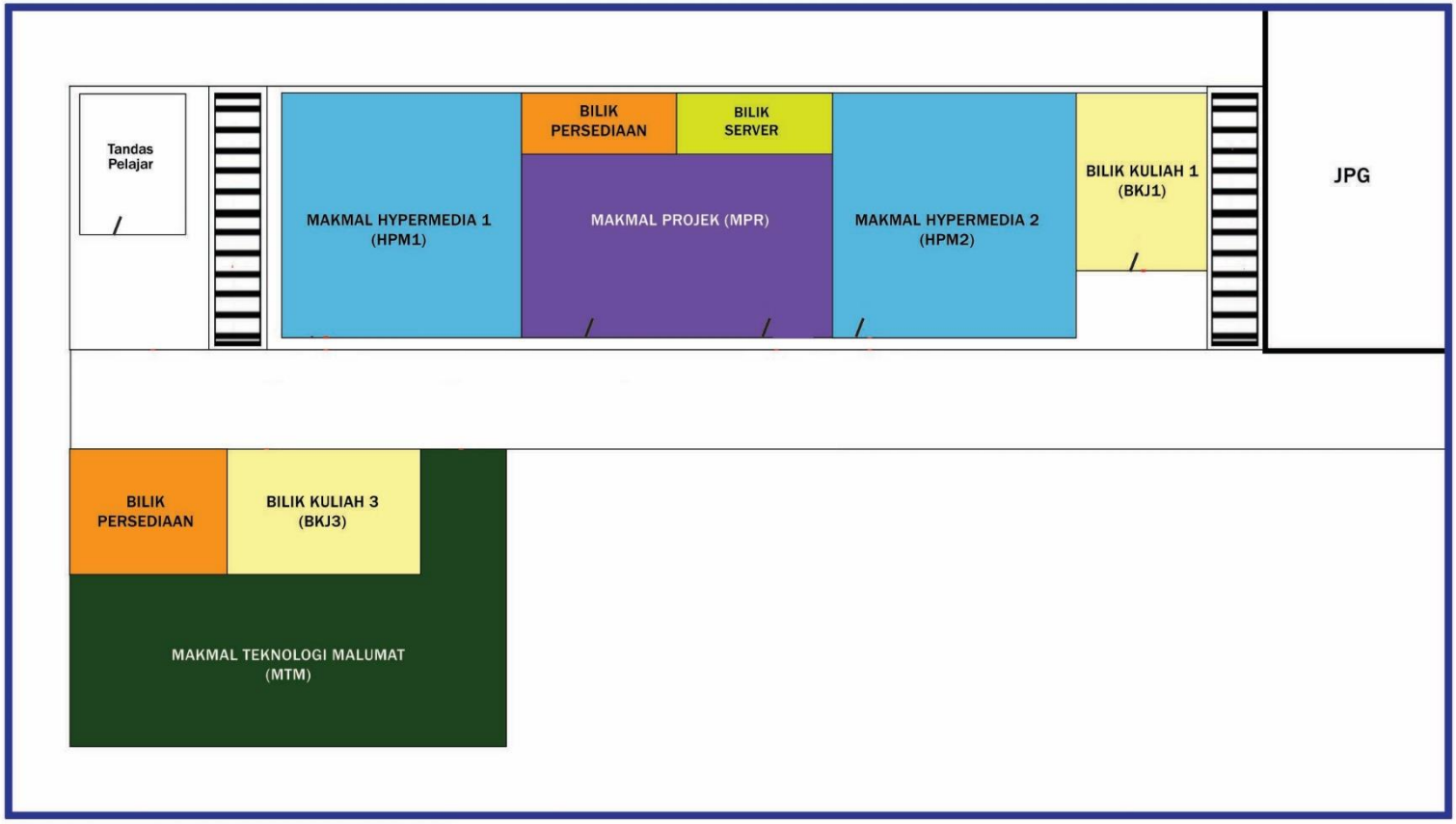


PETUNJUK : Tangga
Pintu

PELAN JABATAN

Jabatan Teknologi Maklumat & Komunikasi, PTSS

TINGKAT 2



6.2 INFORMATION TECHNOLOGY AND COMMUNICATION DEPARTMENT LECTURERS

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12	Norul Huda Binti Abdul Razak	Lecturer	6049886200 (6295)	yuyun_am2002@yahoo.com
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21	Nor Naematul Saadah Binti Ismail	Lecturer	6049886200 (6295)	naematul@jtmk.ptss.edu.my
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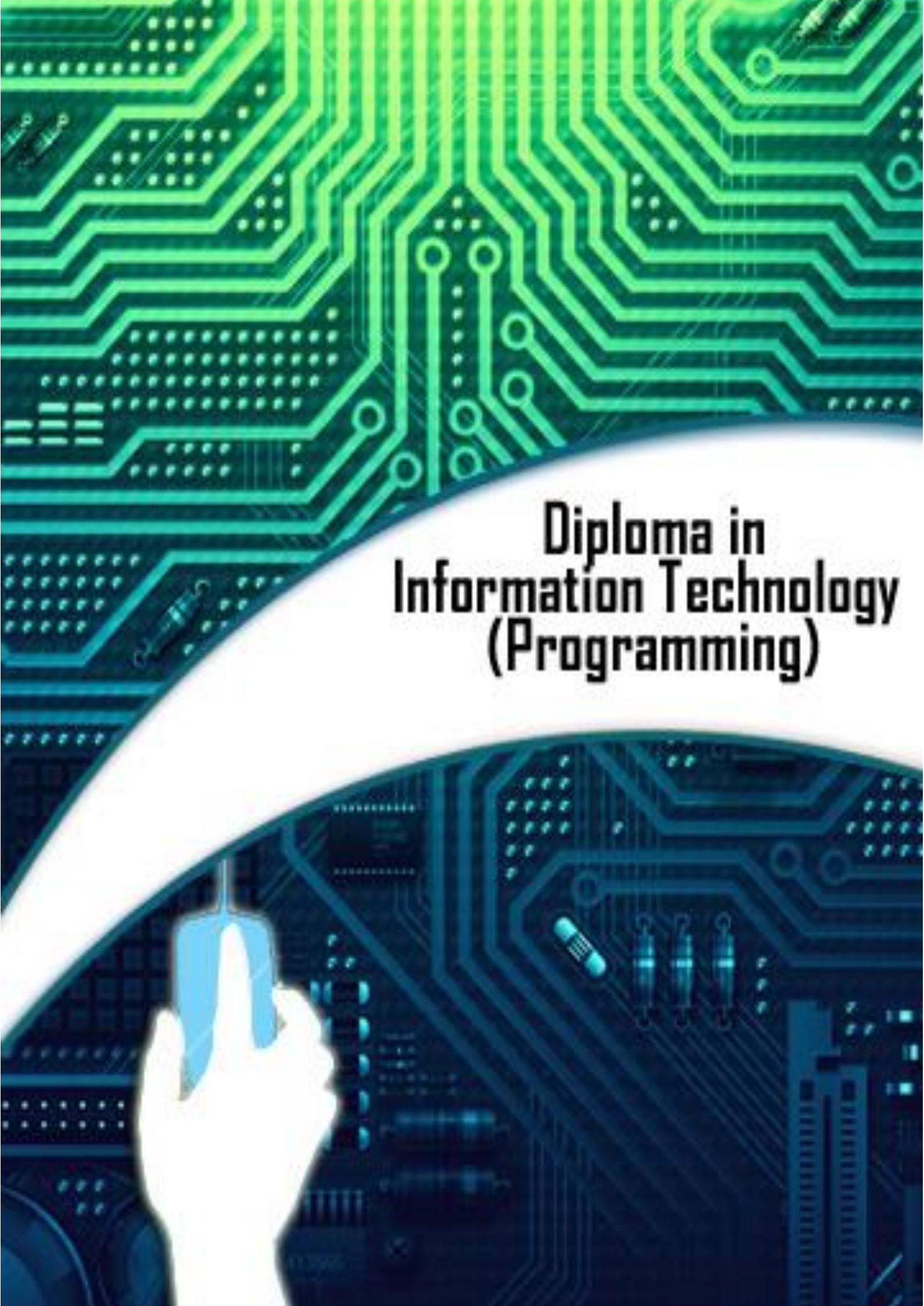
Diploma in Information Technology (Programming)



6.4 DIPLOMA IN INFORMATION TECHNOLOGY (PROGRAMMING)

6.4.1 PROGRAMME OVERVIEW

SYNOPSIS

This programme provides education and training in computing with a specific emphasis on computer programming. Among the courses offered in this programme are Problem Solving & Program Design, Programming Fundamentals, Object-Oriented Programming, System Analysis and Design, Computer Organisation, Algorithm and Data Structure, Web Development and Integrative Programming & Technologies. The knowledge and skills in Computer Systems, Operating Systems, Database System, Information System Security, Computer Network and Project provide opportunities for students to get into a broad range of careers in a variety of technology sectors. This programme also provides the students with transferable skills and multiskilling which enable them to adapt and adopt to new technologies. In addition to the technical courses, students are also taught Communicative English 1, 2 & 3, Mathematics for Computing, Discrete Mathematics, Sains, Teknologi dan Kejuruteraan dalam Islam or Nilai Masyarakat Malaysia, Komunikasi dan Penyiaran Islam, Co-Curriculum, and Professionalism & Ethics in IT to enhance their competencies in soft skills. As the programme emphasizes self-initiated learning and hands-on competencies, graduates of this programme will be ready to take the challenges in the world of computing technologies.

6.4.2 JOB PROSPECTS

Programmers are employed in almost every industry, but the largest concentration is in the computer and data processing services industry, which includes firms that write and sell software. Large numbers of programmers can also be found working for firms that provide engineering and management services, telecommunications companies, manufacturers of computer and office equipment, financial institutions, insurance carriers, educational institutions, and government agencies.

This programme provides the knowledge and skills in computer software development fields with job designation such as:

- Computer Application Programmer
- Internet Programmer
- Web Programmer
- Database Programmer
- System Analysts Assistant
- Software Developer
- Database Administrator
- Software Tester
- System Support Personnel
- Systems Programmer
- Technical Helpdesk / Support

6.4.3 PROGRAMME AIMS (PAI)

The Diploma in Information Technology (Programming) graduates in Polytechnics, Ministry of Higher Education will have knowledge, technical skills and attitude to adapt themselves with new technological advancement and challenges in Programming fields.

The Diploma in Information Technology (Programming) programme shall produce semi professionals who are:

1. equipped with knowledge, skills and attitude of computer software development and programming to enable them to serve on related jobs;
2. instills life-long learning and enables them to adapt positively to the dynamic changes in the IT challenges and industrial requirements;
3. trained to focus on the application, deployment and configuration needs of managing organisation and people over a wide spectrum; and
4. demonstrate exemplary model in IT professionalism and ethics, leadership skills, entrepreneurial skills and effective communication.

6.4.4 PROGRAMME LEARNING OUTCOMES (PLO)

Upon completion of the programme, graduates should be able to:

1. apply fundamental principles of computing and mathematics to be competent and possess strong understanding in programming;
2. apply appropriate methodologies, models and techniques that provide a basis for analysis, design, development, testing and implementation, evaluation, maintenance and documentation of a Software system;
3. communicate effectively with IT Professionals, other professionals and community;
4. demonstrate strong analytical and critical thinking skills to troubleshoot and solve problems within realistic constraints by applying knowledge, principles and skills in Information Technology;
5. demonstrate an awareness of and consideration for society, health, safety, legal and cultural issues and their consequent responsibilities;
6. engage in life-long learning and professional development to enrich knowledge and competencies;
7. inculcate entrepreneurial skills in the related discipline that contributes towards national growth and be competitive in IT industries;
8. adhere to professional codes of ethics and enhance humanistic values to adapt to the real challenges in working environment; and
9. demonstrate effective leadership and teamwork skills.

6.4.5 LIST OF COURSES OFFERED FOR DIP PROGRAMME

No	Semester	Courses			Classifications	Credit(s)
1.	Semester 1	DUE	1012	Communicative English 1	Compulsory	2
2.		DUB	1012	Pengajian Malaysia	Compulsory	2
3.		DRB	1000	Asas Unit Beruniform	Compulsory	0
4.		DFC	1013	Introduction to Computer System	Common Core	3
5.		DFC	1023	Problem Solving & Program Design	Common Core	3
6.		DBM	1023	Mathematics for Computing	Common Core	3
7.		DFT	1113	Computer Organization	Specialization	3
8.		**TOTAL CREDIT HOURS FOR SEMESTER 1**				**16**
9.	Semester 2	DUA	2012	Sains, Teknogi dan Kejuruteraan Dalam Islam*	Compulsory	2
10.		DUB	2012	Nilai Masyarakat Malaysia**	Compulsory	2
11.		DRB	2001	Unit Beruniform 1	Compulsory	1
12.		DRS	2001	Sukan	Compulsory	1
13.		DFC	2013	Programming Fundamentals	Common Core	3
14.		DFC	2023	Algorithm and Data Structure	Common Core	3
15.		DFC	2033	Database System	Common Core	3
16.		DFC	2043	Operating System	Common Core	3
17.		DBM	2023	Discrete Mathematics	Common Core	3
18.		**TOTAL CREDIT HOURS FOR SEMESTER 2**				**18**
19.	Semester 3	DUE	3012	Communicative English	Compulsory	2
20.		DRB	3002	Unit Beruniform 2	Compulsory	2
21.		DRK	3002	Kelab/Persatuan	Compulsory	2
22.		DFC	3013	Object Oriented Programming	Common Core	3
23.		DFT	3112	Professionalism and Ethics in IT	Specialization	2
24.		DFT	3123	Human Computer interaction	Specialization	3
25.		DFT	3133	Computer Network	Specialization	3
26.		DFP	3143	Web Development	Specialization	3
27.		**TOTAL CREDIT HOURS FOR SEMESTER 3**				**18**
28.	Semester 4	DFC	4013	System Analysis and Design	Common Core	3
29.		DFP	4113	Multimedia Technology	Specialization	3
30.		DFP	4123	Integrative Programming & Technologies	Specialization	3
31.		DFP	4133	Information System Security	Specialization	3

No	Semester	Courses			Classifications	Credit(s)
32.	Semester 4	DUF	1002	Foreign Language	Elective	2
33.		DFN	3113	Open Source Operating System	Elective	3
34.		DFN	4133	Network Programming	Elective	3
35.		DFN	4113	Cyber law	Elective	3
36.		DBM	4213	Quantitative Statistics	Elective	3
37.		DEC	5052	Embedded System Applications	Elective	3
38.		DEJ	5153	Programmable Logic Controller (PLC) and Automation	Elective	3
39.		**TOTAL CREDIT HOURS FOR SEMESTER 4**				**17**
40.	Semester 5	DUE	5012	Communicative English 3	Complusory	2
41.		DUA	6022	Komunikasi dan Penyiaran Islam	Complusory	2
42.		DFC	6013	Cyberpreneurship	Common Core	3
43.		DFT	6124	Project	Specialization	4
44.		DFP	6213	Business Intelligence	Elective	3
45.		DFP	6223	Mobile Application Development	Elective	3
46.		DFP	6233	.Net Technology	Elective	3
47.		**TOTAL CREDIT HOURS FOR SEMESTER 5**				**14**
48.	Semester 6	DUT	4010	Industrial Training	Industrial training	10
49.		**TOTAL CREDIT HOURS FOR SEMESTER 6**				**10**

6.4.6 SYNOPSIS AND COURSE LEARNING OUTCOME

COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
1	**DFC1013 INTRODUCTION TO COMPUTER SYSTEM**	INTRODUCTION TO COMPUTER SYSTEM introduces students to the hardware, software and foundation in the basic Information Technology (IT) knowledge and skills necessary for ICT professionals. This course is the study of personal computer (PC) hardware including PC assembly and upgrading, and installing and connecting peripherals. Student will learn hardware troubleshooting techniques used to identify and rectify computer faults. Student are exposed to the principles and good practices in environmentally sustainable computing and the use of appropriate technologies, methodologies in managing IT environment and web page development. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
1	**DFC1023 PROBLEM SOLVING & PROGRAM DESIGN**	PROGRAMMING SOLVING & PROGRAM DESIGN introduces the techniques in problem solving and program design. A multiphase program development life cycle and two basic phases of problem solving and program design are emphasized. Problem analysis and the stepwise specification of the algorithms, pseudo code and flow chart are also defined. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
1	**DFT1113 COMPUTER ORGANIZATION**	COMPUTER ORGANISATION course is designed to introduce the basic concepts on which the stored program digital computer is formulated. These include the introduction of computer architecture and computer organisation, and the representation and manipulation of numbering system. This goal addresses the question on how does a computer work and how it is organized. The course also provides students with foundation knowledge of the Central Processing Unit and assembly language programming. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system. (P3, A2, PLO2, PLO6)
2	**DFC2013 PROGRAMMING FUNDAMENTALS**	PROGRAMMING FUNDAMENTALS course presents structured computer programming in the C++ language. It covers the basic concepts of C++ programs, fundamental control structures, array, structures, function and pointer in C++ language. **CREDIT (S) : 3** **PRE REQUISITE(S) :** **DFC1023 PROBLEM SOLVING AND PROGRAM DESIGN**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
2	**DFC2023 ALGORITHM AND DATA STRUCTURE**	ALGORITHM AND DATA STRUCTURE course is designed to focus on algorithms and the basic data structures. Among the specific data structures covered are linked list, stacks, queues, trees, sorting and searching. The emphasis is on choosing appropriate data structures and designing correct and efficient algorithms to operate on these data structures. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
2	**DFC2033 DATABASE SYSTEM**	DATABASE SYSTEM course introduces the fundamental concepts necessary for designing, using, and implementing database systems and applications. This course provides students with knowledge on fundamentals of database modelling and design, the languages and facilities provided by database management system (DBMS). **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
2	**DFC2043 OPERATING SYSTEM**	OPERATING SYSTEM course introduces the design and implementation of operating systems. This course will cover briefly the evolution of operating system, and also the major components of most operating system. Particular emphasis will be given to three major OS subsystems: process management (processes, threads, CPU scheduling, and deadlock), memory management (segmentation, paging, swapping), file systems, and operating system support for distributed systems. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

COURSE SYNOPSIS (DIP)			
SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	DFC3013 OBJECT ORIENTED PROGRAMMING	OBJECT ORIENTED PROGRAMMING course introduces students to the knowledge of object-oriented technology to equip students with the concept of object oriented programming using Java language. This course introduces students to write, compile and run Java programs, make effective use of some of the standard packages, write object-oriented code using classes and objects, inheritance and polymorphism. **CREDIT (S) : 3** **PRE REQUISITE(S) : FP201 PROGRAMMING FUNDAMENTALS**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
3	DFT3112 PROFESSIONALISM AND ETHICS IN IT	PROFESSIONALISM AND ETHICS IN IT course deals with some theories and code of ethics that computer professionals are likely to encounter in the ICT field. Students are exposed to several areas of ethical issues, privacy of personal information, piracy, sharing of information, accuracy and access to information. This course also exposes student the code of conduct for computing and information technology professional. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
3	DFT3123 HUMAN COMPUTER INTERACTION	HUMAN COMPUTER INTERACTION course aims to provide students with fundamental knowledge of HCI, including areas such as user and task analysis, human factors, ergonomics, accessibility standards and universal design. The course focuses on awareness in computer technology and how usability plays a major part in achieving effective implementation of designs and interactivity. This provides a new dimension that will enrich the lives of people who are ICT savvy. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

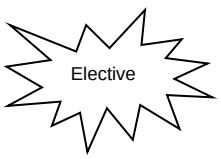
COURSE SYNOPSIS (DIP)			
SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	DFT3133 COMPUTER NETWORK	COMPUTER NETWORK course introduces students to the concepts and principles of data transmission and computer networks. This course enables students tob correctly use standard terminology in describing the main Local Area Network (LAN) topologies, and hardware components used in networking. This course provides students with the knowledge and skills to build a network infrastructure using copper cable, fiber optic cable, and wireless devices. Students also learn to troubleshoot network and secure the network. **CREDIT (S) :3** **PRE REQUISITE(S) :** **DFC1013 INTRODUCTION TO COMPUTER SYSTEM**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
3	DFP3143 WEB DEVELOPMENT	WEB DEVELOPMENT course is designed to introduce students to program a web based application. Students will be exposed to the software and technologies involved in developing web based application. Throughout the course, students will learn proper techniques to develop web based applications starting from designing interfaces to publishing application to a production server. **CREDIT (S) : 3** **PRE REQUISITE(S) :** **DFC2033 DATABASE SYSTEM**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
4	DFC4013 SYSTEM ANALYSIS AND DESIGN	SYSTEM ANALYSIS AND DESIGN course is an introduction to the concept and the development of information system. The course is designed to acquire the knowledge of system development life cycle. It covers all activities in planning, analysing, designing and developing information systems including techniques used in software maintenance. **CREDIT (S) : 3** **PRE REQUISITE(S): NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

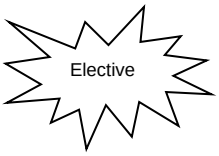
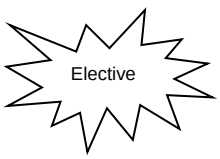
COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
4	**DFP4113 MULTIMEDIA TECHNOLOGY**	MULTIMEDIA TECHNOLOGY course is designed to introduce students to multimedia technology. Students will explore the use of multimedia tools in designing and authoring of interactive digital media. Students will be able to insert, create and edit digital images, text, sounds, video and animation to develop multimedia application. **CREDIT (S) : 3** **PRE REQUISITE(S): NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
4	**DFP4123 INTEGRATIVE PROGRAMMING & TECHNOLOGIES**	INTEGRATIVE PROGRAMMIONG & TECHNOLOGIES course introduces students to the knowledge of GUI programming in Java. This course addresses on the creation of GUIs through stand-alone front-end applications and web-based application. This course also focuses primarily on the Swing library, Abstract Window Toolkit (AWT) and also equips students with knowledge in the development of database applications and web-based solutions. **CREDIT (S) : 3** **PRE REQUISITE(S) :** **DFC2033 DATABASE SYSTEM** **DFC3013 OBJECT ORIENTED ROGRAMMING**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
4	**DFP4133 INFORMATION SYSTEM SECURITY**	INFORMATION SYSTEM SECURITY course is designed to focus on the overall security processes based on security policy emphasizing on hands-on skills in the areas of a secure perimeter, secure connectivity, identity services and intrusion detection. The knowledge delivered shall enable students to identify some of the security approaches to design a defensive strategy in a network environment. Discussion on the security features of Microsoft Windows Server and Open Source Software network operating systems are also included. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
4	**DFN3113 OPEN SOURCE OPERATING SYSTEM**	OPEN SOURCE OPERATING SYSTEM course is an introductory course in Open Source Software. Installation, configuration and management of Linux operating systems are explored. Focus on directory and file management, user account management, and certain device management will be discussed. The course also addresses shell scripting, basic networking and troubleshooting of Linux systems. Elective **CREDIT (S) : 3** **PRE REQUISITE(S) :** **DFC2043 OPERATING SYSTEM**	1. explain the concepts of open source software effective. (C2, PLO1) 2. 3. use efficiently the open source commands to perform specific given task to manage computer system. (P3, C3, PLO2, PLO1) 4. 5. propose suitable open source distribution to meet specific given requirement in open source system environment. (A3, C3, PLO6, PLO1)

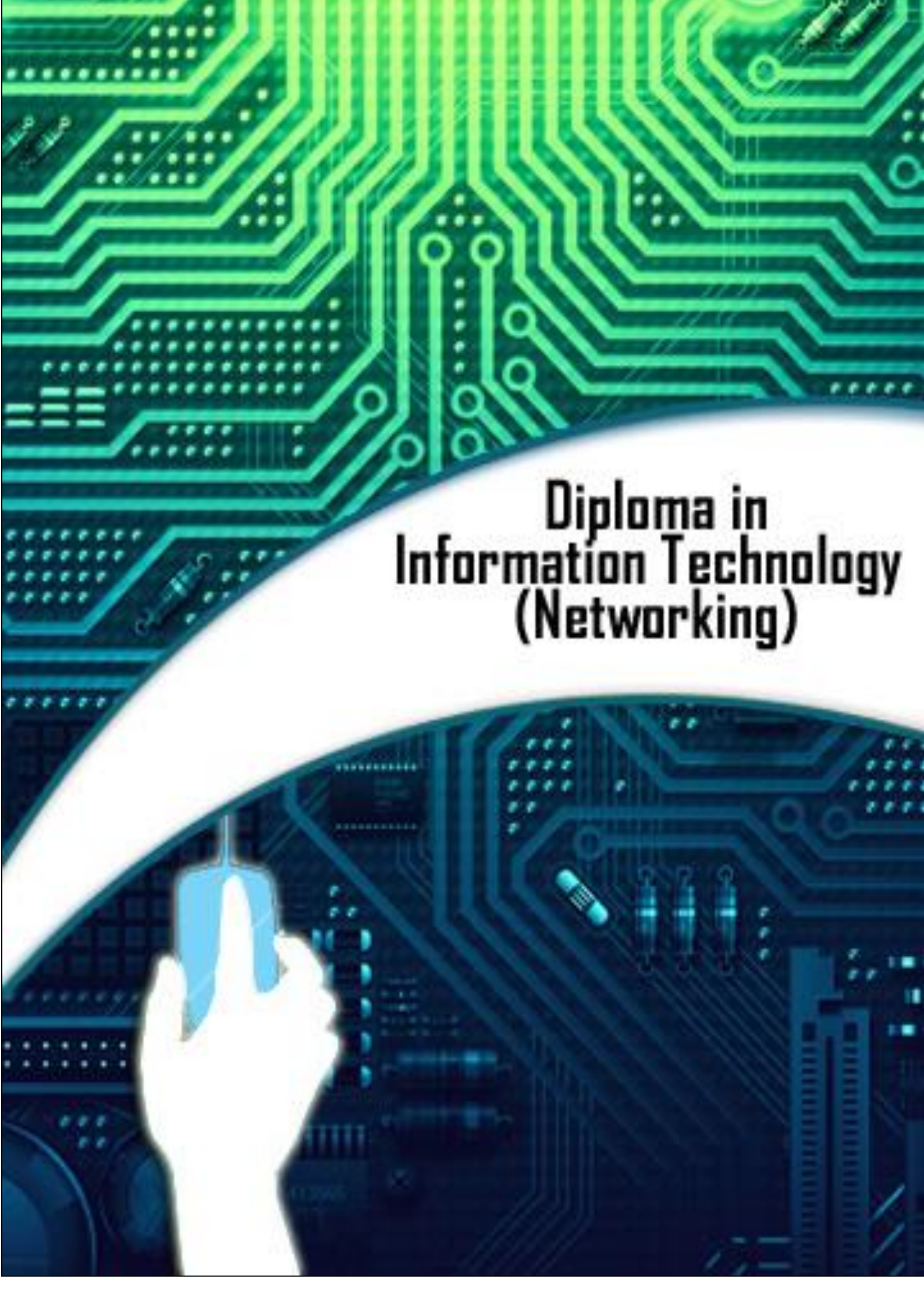
COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
4	**DFN4133 NETWORK PROGRAMMING**	NETWORK PROGRAMMING course focuses on the concept of sockets as means of using Internet Protocol (IP) to communicate between machines and using Java programming language to establish the network communication. The course introduces elements of network programming and concepts involved in creating network applications using sockets. This opens up a whole new class of applications to programmers. Elective **CREDIT (S) : 3** **PRE REQUISITE(S) :** **DFC3013 OBJECT ORIENTED PROGRAMMING**	1. explain the concepts of open source software effective. (C2, PLO1) 2. use efficiently the open source commands to perform specific given task to manage computer system. (P3, C3, PLO2, PLO1) 3. propose suitable open source distribution to meet specific given requirement in open source system environment. (A3, C3, PLO6, PLO1)
4	**DFN4113 CYBER LAW**	CYBER LAW course deals with some of the major legal aspects of computing which are related to the various aspects of law. Some leading topics include cybercrimes, electronic and digital signatures, intellectual property, data protection and privacy and crimes in Information communication and technology. Students are exposed to the cyber laws in Malaysia which governs the process and dissemination of information digitally. This course also teaches students the importance of adhering to cyber laws and regulation in order to regulate and protect the ICT industry from misuse and illegal activities. Elective **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. determine the various cyber laws, theoretically and practically, and importance of knowledge of the current cyber laws. (C3, PLO1) 2. response constructively to various issues pertaining to cyber law implementation. (C3, A2, PLO1, PLO3) 3. adhere to cyber law rules and regulation in handling security issues. (C4, A3, PLO1, PLO8)

COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
5	**DUA6022 KOMUNIKASI DAN PENYIARAN ISLAM**	KOMUNIKASI DAN PENYIARAN ISLAM memfokuskan kepada penguasaan konsep, kemahiran komunikasi dan penyiaran Islam bagi meningkatkan kefahaman pelajar secara holistik terhadap kursus ini. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. Menjelaskan konsep komunikasi dan penyiaran dalam Islam. (C2 : LD1) 2. Menghubung kait isu-isu semasa dalam komunikasi Islam. (C3, A4 : LD1, LD5) 3. Menunjukkan kemahiran pengurusan dakwah dalam bidang penyiaran Islam. (C3, A3 : LD1, LD6)
5	**DFC6013 CYBERPRENEURSHIP**	CYBERPRENEURSHIP course is designed to introduce cyberpreneurship concepts to students. The course will equip students with the knowledge of e-commerce business that would hopefully encourage them to become cyberpreneurs in the ecommerce industry. The information seeking, processing and decision making skills of a cyberpreneur has been given due recognition in the teaching of this course. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
5	**DFT6124 PROJECT**	PROJECT course will give students the practical and design experience of carrying out an independent application software or technical project from project requirements, implementation, testing to delivery and presentation of the project. The course requires students to learn new technologies and encourage student to develop their generic skills such as developing teamwork, project management, communication skills, problem solving skills and technical writing skills. This will inculcate independent and life-long learning. **CREDIT (S) : 4** **PRE REQUISITE(S) :** **DFC4013 SYSTEM ANALYSIS & DESIGN** **DFP3143 WEB DEVELOPMENT**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
5	**DFP6213 BUSINESS INTELLIGENCE**	BUSINESS INTELLIGENCE course is designed to emphasize the classification of specific technologies for collecting, storing, analyzing and giving the best option for enterprise users to make better decisions. Consist of the Data Warehousing, Decision Support System, OLAP and OLTP which are useful in helping human being to get the best decision for their business.  **CREDIT (S) : 3** **PRE REQUISITE(S) :** **DF2033 DATABASE SYSTEM**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
5	**DFP6223 MOBILE APPLICATION DEVELOPMENT**	MOBILE APPLICATION DEVELOPMENT introduces mobile application development for the Android platform. Android is a software stack for mobile devices that includes an operating system, middleware and key applications. The Android SDK provides the tools and APIs necessary to begin developing applications on the Android platform using the Java programming language. Students will learn skills for creating and deploying Android applications, with particular emphasis on software engineering topics including software architecture, software process, usability, and deployment. Topics will include Android Development Environment, user interfaces, audio, persistence, SQLite databases, location, sensors, and graphics. **CREDIT (S) : 3** **PRE REQUISITE(S) :** **DFC3013 OBJECT ORIENTED PROGRAMMING** 	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)
5	**DFP6233 .NET TECHNOLOGY**	.NET PROGRAMMING course provides students with the knowledge and skills needed to develop applications in Microsoft Visual Basic .NET for the Microsoft .NET platform. The course focuses on user interfaces, program structure, language syntax, and integration of .NET application development. **CREDIT (S) : 3** **PRE REQUISITE(S) :** **DFC3013 OBJECT ORIENTED PROGRAMMING** 	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. (C3, PLO1) 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. (P2, C3, PLO2, PLO1) 3. adhere to standard procedures and safety management in identifying the faults in the computer system (P3, A2, PLO2, PLO6)

COURSE SYNOPSIS (DIP)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
6	**DUT4010 INDUSTRIAL TRAINING**	INDUSTRIAL TRAINING exposes students to related workplace competencies demanded by industries. This course provides exposure to students in terms of technology literacy, effective communication, practice social skills and teamwork, policies, procedures and regulations, professional ethics and reporting. It also equips students with real work experience, thus helping students to perform as novice workers. **CREDIT (S) : 10** **PRE REQUISITE(S) : NONE**	1. apply related knowledge and skills at the workplace. (C3, P2) 2. communicate effectively with others. (A3) 3. practice teamwork. (A5) 1. professionally and ethically comply with policies, procedures and rules of the organization. (A5) 2. explain the tasks assigned (during the industrial training) according to the prescribed format. (P2, A4)


Diploma in
Information Technology
(Networking)

6.5 DIPLOMA IN INFORMATION TECHNOLOGY (NETWORKING)

6.5.1 PROGRAMME OVERVIEW

SYNOPSIS

In order to keep abreast with rapid technological advancement and evolving requirement in industries today, Department of Polytechnic Education (DPE) has worked collaboratively with the nation's key industry players in developing and reviewing the curriculum for Diploma in Information Technology (Networking) programme. This collaboration aims to equip students with up-to-date knowledge and relevant skills to meet the global challenges and the requirement of the ICT industries. This initiative move, namely blended learning, is a form of pedagogy that blends classroom instructions with structured simulated real-life working experience which prepares students for a competitive edge in today's workplace.

This is true especially in the ICT area where there is a rapidly growing demand for highly skilled and technically savvy workforce. The activities of many ICT industries require increasingly sophisticated ICT workforce. One of the most important factors gearing towards the growth of productivity is qualified manpower in this area, in order for the industry to develop and remain competitive in the world market. To address these issues, the Curriculum Development Division (CDD), DPE cooperated with the industries to develop the curriculum and introduces Diploma in Information Technology (Networking) programme. This curriculum integrate with the curriculum of professional certification such as CCENT, CCNA, CompTIA A+ and ENSA, so as to give the opportunity for the students to sit for professional certificate examinations. This will give the students an added value and ensure that the knowledge and skills acquired this programme are relevant with the needs of ICT industries specifically in networking.

6.5.2 JOB PROSPECTS

This programme provides the knowledge and skills in computer network technology, network management and information security, supporting server and interactive multimedia that can be applied to a broad range of careers in the ICT industrial world and businesses. The knowledge and skills that the students acquire from the programme will enable them to participate in the job market such as:

a) Maintenance Personnel
b) Network Support Personnel
c) Network Administrator

d) IT / Information Support Executive
e) Computer Technical Support
f) IT Supporting Engineer
g) Assistant Network Engineer
h) IT Developer
i) Technical Helpdesk
j) Computer Technical Support

6.5.3 PROGRAMME AIMS (PAI)

The Diploma in Information Technology (Networking) graduates in Polytechnics, Ministry of Higher Education will have knowledge, technical skills and attitude to adapt themselves with new technological advancement and challenges in Networking fields.

6.5.4 PROGRAMME LEARNING OUTCOMES (PLO)

Upon completion of the programme, graduates will be able to:

1. apply fundamental principles of computing, mathematics and soft skills to be competent and possess strong understanding in networking;
2. practice technical skills to design a sustainable and resilient network;
3. communicate effectively and function on multidisciplinary teams to meet job specification;
4. demonstrate analytical and critical thinking skills to troubleshoot and solve networking problems;
5. demonstrate an awareness of and consideration for society, health, safety, legal and cultural issues and their consequent responsibilities;
6. apply the most recent technologies for analysis, design and implementation of networking projects;
7. develop entrepreneurial skills in the related discipline that contributes towards national growth and be competitive in IT industries;
8. adhere to professional codes of ethics and enhance humanistic values to adapt to the real challenges in working environment; and
9. demonstrate effective leadership and teamwork skills.

6.5.5 LIST OF COURSES OFFERED FOR DNS PROGRAMME

No	Semester	Courses			Classifications	Credit(s)
1	Semester 1	DUE	1012	Communicative English 1	Compulsary	2
2.		DUB	1012	Pengajian Malaysia	Compulsary	2
3.		DRB	1000	Asas Unit Beruniform	Compulsary	0
4.		DFC	1013	Introduction To Computer System	Common Core	3
5.		DFC	1023	Problem Solving & Programme Design	Common Core	3
6.		DBM	1023	Mathematics For Computing	Common Core	3
7.		DFT	1113	Computer Organization	Specialization	3
8.		DFT	3112	Professionalism And Ethics in IT	Specialization	2
		TOTAL CREDIT HOURS FOR SEMESTER 1				**18**
9.	Semester 2	DUA	2012	Sains, Teknologi dan Kejuruteraan Dalam Islam*	Compulsory	2
10.		DUB	2012	Nilai Masyarakat Malaysia**	Compulsory	2
11.		DRB	2001	Unit Beruniform 1	Compulsory	1
12.		DRS	2001	Sukan	Compulsory	1
13.		DFC	2013	Programming Fundamentals	Common Core	3
14.		DFC	2023	Algorithm and Data Structure	Common Core	3
15.		DBM	2023	Discrete Mathematics	Common Core	3
16.		DFC	2043	Operating System	Common Core	3
17.		DFN	2113	Introduction To Network	Specialization	3
		TOTAL CREDIT HOURS FOR SEMESTER 2				**18**
18.	Semester 3	DUE	3012	Communicative English 2	Compulsory	2
19.		DRB	3002	Unit Beruniform 2	Compulsory	2
20.		DRK	3002	Kelab/ Persatuan	Compulsory	2
21.		DFC	2033	Database System	Common Core	3
22.		DFC	3013	Object Oriented Programming	Common Core	3
23.		DFN	3113	Open Source Operating System	Specialization	3
24.		DFN	3124	Switching and Routing Essentials	Specialization	4
25.		**TOTAL CREDIT HOURS FOR SEMESTER 3**				**17**
26.	Semester 4	DFC	4013	System Analysis and Design	Common Core	3
27.		DFN	4113	Open Source Server Administration	Specialization	3
28.		DFN	4124	Network Design	Specialization	4
29.		DUF	1002	Foreign Language	Elective	2
30.		DFT	3123	Human Computer Interaction	Elective	3

No	Semester	Courses			Classifications	Credit(s)
31.	Semester 4	DFN	4213	Advanced Switching and Routing	Elective	3
32.		DFP	3143	Web Development	Elective	3
33.		DFP	4113	Multimedia Technology	Elective	3
34.		DFN	4133	Network Programming	Elective	3
35.		DEP	5313	Fibre Optic Communication System	Elective	3
36.		DEC	5052	Embedded System Applications	Elective	2
37.		DEJ	5153	Programmable Logic Controller (PLC) and Automation	Elective	3
38.		**TOTAL CREDIT HOURS FOR SEMESTER 4**				**15**
39.	Semester 5	DUT	4011	Industrial Training	Industrial Training	10
40.		**TOTAL CREDIT HOURS FOR SEMESTER 5**				**10**
41.	Semester 6	DUE	5012	Communicative English 3	Compulsory	2
42.		DUA	6022	Komunikasi dan Penyiaran Islam	Compulsory	2
43.		DFC	6013	Cyberpreneurship	Common Core	3
44.		DFT	6124	Project	Specialization	4
45.		DBM	4213	Quantitative Statistics	Elective	3
46.		DFN	6213	WAN Technologies	Elective	3
47.		DFN	6223	Network Security	Elective	3
48.		DFP	6213	Business Intelligence	Elective	3
49.		DFP	6223	Mobile Application Development	Elective	3
50.		**TOTAL CREDIT HOURS FOR SEMESTER 6**				**14**

6.5.6 SYNOPSIS AND COURSE LEARNING OUTCOME

COURSE SYNOPSIS (DNS)			
SEMESTER	**COURSE**	**SYNOPSIS**	**1. COURSE LEARNING OUTCOME (CLO)**
1	**DUE1012 COMMUNICATIVE ENGLISH 1**	COMMUNICATIVE ENGLISH 1 focuses on speaking skills for students to develop the ability to communicate effectively and confidently in group discussions. It is designed to provide students with useful expressions that can be used in a variety of social interactions and situations. It also provides students with appropriate reading skills to comprehend a variety of texts. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. apply appropriate communication skills in discussions and conversation. 2. listen and comprehend discussions and conversation accurately. 3. apply appropriate reading skills to comprehend selected texts. 4. respond to current issues / topics of interest in written form. 5. apply effective organisational strategies in a group presentation.
	DUB1012 PENGAJIAN MALAYSIA	PENGAJIAN MALAYSIA membincangkan aspek pensejarahan, sistem dan struktur pentadbiran, sistem pemerintahan, sistem perundangan, pembinaan negara bangsa dan dasar-dasar penting negara. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. Menjelaskan sejarah awal kerajaan Tanah Melayu dan sejarah perjuangan kemerdekaan. 2. Menerangkan struktur pentadbiran negara dan Perlembagaan Malaysia. 3. Menjelaskan konsep masyarakat majmuk, perpaduan, masalah dan langkah mewujudkan perpaduan dan integrasi di Malaysia. 4. Menghuraikan dasar-dasar kerajaan Malaysia, peranan dan sumbangan setiap dasar yang dijalankan kerajaan untuk membangunkan Negara.
1	**DFC1013 INTRODUCTION TO COMPUTER SYSTEM**	INTRODUCTION TO COMPUTER SYSTEM introduces students to the hardware, software and foundation in the basic Information Technology (IT) knowledge and skills necessary for ICT professionals. This course is the study of personal computer (PC) hardware including PC assembly and upgrading, and installing and connecting peripherals. Student will learn hardware troubleshooting techniques used to identify and rectify computer faults. Student are exposed to the principles and good practices in environmentally sustainable computing and the use of appropriate technologies, methodologies in managing IT environment and web page development. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. Discuss actively the basic concepts, trends, issues and challenges related to current information technology. 2. Apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply to computing standard. 3. Adhere to standard procedures and safety management in identifying the faults in the computer system.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
1	DFC1023 PROBLEM SOLVING & PROGRAM DESIGN	PROGRAMMING SOLVING & PROGRAM DESIGN introduces the techniques in problem solving and program design. A multiphase program development life cycle and two basic phases of problem solving and program design are emphasized. Problem analysis and the stepwise specification of the algorithms, pseudo code and flow chart are also defined. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain the basic computer and programming fundamentals with appropriate example of languages. 2. apply the different types of problem solving method to solve problem efficiently. 3. Solve problems by applying related theories of the basic programming technique to a given particular scenario using programming life cycle.
1	DBM1023 MATHEMATICS FOR COMPUTING	MATHEMATICS FOR COMPUTING course introduces students to numbering system, geometry and complex numbers. Calculus covers the simple techniques of differentiation and integration. In addition, this course also exposed to basic concept of matrices and linear algebra to help them in solving mathematical problem in organizing data through theoretically and practically. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. apply mathematical knowledge and skills in analyzing problems critically. 2. find mathematical solutions using the appropriate techniques in mathematics. 3. solve related problems in geometry, vectors, complex numbers, calculus, and matrices by using appropriate formulae and laws.
1	DFT1113 COMPUTER ORGANISATION	COMPUTER ORGANIZATION course is designed to introduce the basic concepts on which the stored program digital computer is formulated. These include the introduction of computer architecture and computer organization, and the representation and manipulation of numbering system. This goal addresses the question on how does a computer work and how it is organized. The course also provides students with foundation knowledge of the Central Processing Unit and assembly language programming. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain effectively computer function, input/output and central processing unit in computer system. 2. apply appropriate method to solve arithmetic problem in numbering system and sequential logic circuit. 3. work collaboratively in group to write a simple program in assembly language to perform given tasks.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
1	DFT3112 PROFESSIONALISM AND ETHICS IN IT	PROFESSIONALISM AND ETHICS IN IT course deals with some theories and code of ethics that computer professionals are likely to **encounter** in the ICT field. Students are exposed to several areas of ethical issues, privacy of personal information, piracy, sharing of information, accuracy and access to information. This course also exposes student the code of conduct for computing and information technology professional. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	4. distinguish between the various ethical theories and code of ethics which can be used to form the basis of ethical computing. 5. response constructively to various emerging issues related to ethics in cyberspace. 6. adhere to code of ethics and enforcements when working with computers and the Internet.
2	DFC2013 PROGRAMMING FUNDAMENTALS	PROGRAMMING FUNDAMENTALS course presents structured computer programming in the C++ language. It covers the basic concepts of C++ programs, fundamental control structures, array, structures, function and pointer in C++ language. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC1023 PROBLEM SOLVING & PROGRAM DESIGN**	1. apply program structure and debugging process in C++ programming language accordingly. 2. design programs using appropriate control structures, arrays, structures, functions and pointers. 3. solve problems using C++ programming language environment with appropriate coding.
2	DFC2023 ALGORITHM AND DATA STRUCTURE	ALGORITHM & DATA STRUCTURE course is designed to focus on algorithms and the basic data structures. Among the specific data structures covered are linked list, stacks, queues, trees, sorting and searching. The emphasis is on choosing appropriate data structures and designing correct and efficient algorithms to operate on these data structures. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain the algorithm and various data structures appropriately. 2. apply the concepts of various data structures precisely. 3. solve problems by selecting appropriate data structures.
2	DBM2023 DISCRETE MATHEMATICS	DISCRETE MATHEMATICS course introduces students to logical and mathematical thinking. This course focuses on providing basic logic, sets, relations and functions, as well as graphs and trees which integrate symbolic tools, graphical concepts and numerical calculations. This course also addresses the counting principle as well as induction and recursion which are related to the information technology programme. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. apply mathematical knowledge in basic logic, proofs and counting principles. 2. construct table and diagram to show proposition logic, graphs and trees. 3. solve related problems critically using appropriate formulae and concepts.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
2	DFC2043 OPERATING SYSTEM	OPERATING SYSTEM course introduces the design and implementation of operating systems. This course will cover briefly the evolution of operating system, and also the major components of most operating system. Particular emphasis will be given to three major OS subsystems: process management (processes, threads, CPU scheduling, and deadlock), memory management (segmentation, paging, swapping), file systems, and operating system support for distributed systems. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC1013 INTRODUCTION TO COMPUTER SYSTEM**	1. explain the basic functions of operating system, memory, process and file management tasks appropriately. 2. apply efficiently the concepts of operating system in given scenarios. 3. organize the operating system environment using appropriate security elements efficiently
2	DFN 2113 INTRODUCTION TO NETWORK	INTRODUCTION TO NETWORKS course covers the fundamental of the networking concepts, principles and terminology. Topics include network protocols, Local-area networks (LANs), Wide-area networks (WANs), Open System Interconnection (OSI) model, cabling, Ethernet Internet Protocol (IP) addressing and network standards. Students also learn how to troubleshoot a network problem.. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC1013 INTRODUCTION TO COMPUTER SYSTEM**	1. explain the architecture, structure, functions, components and models of the Internet and other computer networks. 2. build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. 3. utilize common network utilities to verify small network operations analyze data traffic appropriately.
2	DUA2012 SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM	SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM memberi pengetahuan tentang konsep Islam sebagai al-Din dan seterusnya membincangkan konsep sains, teknologi dan kejuruteraan dalam Islam serta impaknya, pencapaiannya dalam tamadun Islam, prinsip serta peranan syariah dan etika Islam, peranan Kaedah Fiqh serta aplikasinya. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. menghuraikan Islam sebagai al-Din. 2. menjelaskan konsep sains, teknologi dan kejuruteraan dalam Islam. 3. mengaplikasikan prinsip syariah Islam dalam sains, teknologi dan kejuruteraan.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
2	DUB2012 NILAI MASYARAKAT MALAYSIA	PENDIDIKAN MORAL 2 merupakan lanjutan daripada kursus Asas Pendidikan Moral. Pelajar diberi kefahaman secara mendalam tentang nilai-nilai masyarakat Malaysia dan peranan individu dalam hidup bermasyarakat dan bernegara. Kursus ini juga menerangkan cabaran dan isu moral dalam mewujudkan masyarakat Malaysia yang harmoni, beretika dan profesional. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. menerangkan nilai-nilai masyarakat Malaysia. 2. membincangkan peranan manusia dalam kehidupan masyarakat dan negara. 3. membincangkan cabaran dan isu moral dalam masyarakat masa kini
3	DUE3012 COMMUNICATIVE ENGLISH 2	COMMUNICATIVE ENGLISH 2 emphasises the skills needed to describe products and services as well as processes and procedures. It focuses on the skills to give and respond to instructions. The course will also enable students to make and reply to enquiries and complaints in their future workplace. **CREDIT (S) : 2** **PRE REQUISITE(S) : DUE1012 COMMUNICATIVE ENGLISH 1**	1. describe products and services in a persuasive manner. 2. transfer information on processes and procedures using appropriate language from non-linear to linear form. 3. listen and respond to enquiries using appropriate language. 4. make and respond to complaints using appropriate language.
3	DRK3002 KO-KURIKULUM 2 (KELAB)	KOKURIKULUM 2 memfokuskan kepada penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif. **CREDIT (S) : 2** **PRE REQUISITE(S) : DRS2001 KO-KURIKULUM 1**	1. Mempamerkan kompentensi kemahiran khusus yang dipelajari. 2. Mengorganisasikan aktiviti berdasarkan kemahiran-kemahiran yang dipelajari.
3	DFC2033 DATABASE SYSTEM	DATABASE SYSTEM course introduces the fundamental concepts necessary for designing, using, and implementing database systems and applications. This course provides students with knowledge on fundamentals of database modelling and design, the languages and facilities provided by database management system (DBMS). **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain the fundamentals concepts of database management and relational data model to create a database based on an organization's requirements. 2. develop a database using a concurrency control and data recovery technique to manage the database system. 3. solve an organization's requirements by selecting the correct database query formulation using an appropriate commercial Database Management System (DBMS).

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
3	DFC3013 OBJECT ORIENTED PROGRAMMING	OBJECT ORIENTED PROGRAMMING course presents object-oriented technology to equip students with the concept of object oriented programming using Java language. This course introduces students to write, compile and run Java program, make effective use of some of the standard packages, write object-oriented code using classes and objects, inheritance and polymorphism. **CREDIT (S) : 4** **PRE REQUISITE(S) : DFC1023 PROBLEM SOLVING AND PROGRAM DESIGN**	1. explain briefly the concepts of object oriented design, methodology and programming. 2. design a successful program using concepts of Object Oriented Programming. 3. solve problems using the Object Oriented Programming approach and exception handling to produce well engineered program.
3	DFN3113 OPEN SOURCE OPERATING SYSTEM	OPEN SOURCE OPERATING SYSTEM course is an introductory course in Open Source Software. Installation, configuration and management of Linux operating systems are explored. Focus on directory and file management, user account management, and certain device management will be discussed. The course also addresses shell scripting, basic networking and troubleshooting of Linux systems.. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC2043 OPERATING SYSTEM**	1. explain the concepts of open source software effective. 2. use efficiently the open source commands to perform specific given task to manage computer system. 3. propose suitable open source distribution to meet specific given requirement in open source system environment.
3	DFN3124 SWITCHING AND ROUTING ESSENTIALS	SWITCHING AND ROUTING course introduces students to the equipment, applications, and protocols in a small network. The course provides knowledge on routing protocols such as Routing Information Protocol (RIP) and single-area Open Shortest Path First (OSPF) protocol which includes VLSM, VLANs and Dynamic Trunking Protocol (DTP). Students also learn about the routing tables and Access Control Lists (ACLs). Students' skills are developed through hands-on exercises in the laboratory on configuration, installation and troubleshooting of a switched network. **CREDIT (S) : 4** **PRE REQUISITE(S) : DFN2113 INTRODUCTION TO NETWORKS**	1. Discover the architecture, components and operations of routers and switches in a small network. 2. Perform the configuration of routers and switches for basic functionality. 3. Demonstrate a proper troubleshooting procedure for routers and switches to resolve common routing issues in both IPv4 and IPv6 networks.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
4	DFC4013 SYSTEM ANALYSIS AND DESIGN	SYSTEM ANALYSIS AND DESIGN course is an introduction to the concept and the development of information system. The course is designed to acquire the knowledge of system development life cycle. It covers all activities in planning, analysing, designing and developing information systems including techniques used in software maintenance. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain correctly the concept of System Analysis and Design in project development. 2. apply System Development Life Cycle methodology in project development and project management appropriately. 3. communicate effectively in project development team to achieve collaborative work.
4	DFN4113 OPEN SOURCE SERVER ADMINISTRATION	OPEN SOURCE SERVER ADMINISTRATION is a course designed to provide students with skills on managing servers used to administer Campus Area Network (CAN) and network services needed. Students will acquire knowledge and skill in server's configurations implemented in a typical Campus Area Network (CAN) environment using Linux. **CREDIT (S) : 3** **PRE REQUISITE(S): DFN3113 OPEN SOURCE OPERATING SYSTEM**	1. apply correctly the concept and various function of system server in a Campus Area Network (CAN). 2. build the different type of services using open source application server that can provide efficient and control access to all resources in a Campus Area Network (CAN). 3. form the system server in a Campus Area Network (CAN) for optimal performance and future scalability.
4	DFN4124 NETWORK DESIGN	NETWORK DESIGN course aims to develop the skills necessary to design small Enterprise LANs and WANs based on network lifecycle phase. It also provides an introduction to collecting network design requirements, translating those requirements into equipment and protocol needs, and creating a network topology which addresses the needs of the customer. It will also familiarize students with the process to create and implement a design proposal for a customer. **CREDIT (S) : 4** **PRE REQUISITE(S) : DFN3124 SWITCHING AND ROUTING ESSENTIALS**	1. Analyze an application impact on network design concepts that comply to appropriate physical and logical network requirements including wireless LANs. 2. build appropriate campus network prototype to validate the design elements for a network development. 3. prepare a network design proposal for an organization, including implementation schedule and cost summary.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
5	DUE5012 COMMUNICATIVE ENGLISH 3	COMMUNICATIVE ENGLISH 3 aims to develop the skills necessary to carry out a mini project as well as job hunting skills. Students will learn to present ideas through the use of graphs and charts. Students will learn the process of job hunting which includes job search strategies and making enquiries. They will also learn to write resumes and cover letters. The students will develop skills to introduce themselves, highlight their strengths and abilities, present ideas, express opinions and respond appropriately during job interviews. **CREDIT (S) : 2** **PRE REQUISITE(S) : DUE5012 COMMUNICATIVE ENGLISH 3**	1. describe information contained in graphs and charts effectively. 2. apply job hunting mechanics appropriately. 3. write a cover letter using appropriate language. 4. respond to interview questions using appropriate language when applying for jobs.
5	DUA6022 KOMUNIKASI DAN PENYIARAN ISLAM	KOMUNIKASI DAN PENYIARAN ISLAM memfokuskan kepada penguasaan konsep, kemahiran komunikasi dan penyiaran Islam bagi meningkatkan kefahaman pelajar secara holistik terhadap kursus ini. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. Menjelaskan konsep komunikasi dan penyiaran dalam Islam. 2. Menghubung kait isu-isu semasa dalam komunikasi Islam. 3. Menunjukkan kemahiran pengurusan dakwah dalam bidang penyiaran Islam.
5	DFC6013 CYBERPRENEURSHIP	CYBERPRENEURSHIP course is designed to introduce cyberpreneurship concepts to students. The course will equip students with the knowledge of e-commerce business that would hopefully encourage them to become cybertrepreneurs in the e-commerce industry. The information seeking, processing and decision making skills of a cyberpreneur has been given due recognition in the teaching of this course. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain appropriately the basics of cyberpreneural management, financing and marketing in order to be a successful cyberpreneur. 2. Produce a good cyber business plan in group project effectively to implement a business system that is sustainable for future expansion. 3. work collaboratively to explain current business opportunities.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
5	DFT6124 PROJECT	PROJECT course integrates knowledge from several courses and is designed to provide students with significant design experience. It is a mean to practice project management, technical writing and technical presentation skills. The course enables students to observe the immediate impact of their completed projects. The course enables students to develop communication skills and work as a team in completing the project. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. plan and follow-up of a project task and handle unexpected issues that might occur during the development stages. 2. produce an end product and detail project documentation to be used in the system's maintenance and future expansion. 3. communicate effectively in project development team to achieve a productive collaborative work.
6	DUT40110 INDUSTRIAL TRAINING	INDUSTRIAL TRAINING exposes students to related workplace competencies demanded by industries. This course provides exposure to students in terms of technology literacy, effective communication, practice social skills and teamwork, policies, procedures and regulations, professional ethics and reporting. It also equips students with real work experience, thus helping students to perform as novice workers. **CREDIT (S) : 3** **PRE REQUISITE(S) : Lulus Semua Kursus Semester 1 hingga 5 (tertakluk kepada arahan pelaksanaan Latihan Industri)**	1. apply related knowledge and skills at the workplace. 2. communicate effectively with others. 3. practice teamwork. 4. professionally and ethically comply with policies, procedures and rules of the organization. 5. explain the tasks assigned (during the industrial training) according to the prescribed format.
ELECTIVE COURSES			
4	DEP5313 FIBRE OPTIC COMMUNICATION SYSTEM	FIBER OPTIC COMMUNICATION SYSTEM introduces students to the basic concept of fiber optic communication systems. This course covers fiber optic characteristics, losses in fiber optic cable and the fundamental concept of optical measurement. This course also provides knowledge in splicing techniques, multiplexing techniques and design consideration in fiber optic communication system. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. apply the concepts of light properties in the fiber optic communication system. 2. solve problems regarding light transmission in fiber optic communication link. 3. design fiber optic communication link using link budget. 4. display the ability to handle systematically the testing instruments for fiber optic communication system.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
4	DEC5052 EMBEDDED SYSTEM APPLICATIONS	EMBEDDED SYSTEM APPLICATIONS covers the basic concept and application of microcontroller system based on Peripheral Interface Controller (PIC) microcontroller. Students will learn software and hardware development on PIC16F/PIC18F microcontroller development system and understand how to do interfacing with external devices using suitable internal chip features. students are exposed to the new Microcontroller Unit (MCU) simulation software such as Proteus. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. apply suitable software and hardware development on PIC16F/PIC18F microcontroller system to interface with external devices using suitable internal chip features. 2. design embedded system application based on PIC16F/PIC18F microcontroller effectively. 3. construct and simulate real-time embedded system application based on PIC16F/PIC18F microcontroller effectively. 4. demonstrate the ability to lead a team to complete assigned project / practical work within a stipulated time frame
4	DEJ5153 PROGRAMMABLE LOGIC CONTROLLER (PLC) AND AUTOMATION	PROGRAMMABLE LOGIC CONTROLLER (PLC) AND AUTOMATION provides knowledge regarding the concept and principle of automation system. This course emphasizes the relationship between hardwired relay ladder logic and PLC system, application of various industrial input and output devices of PLC, design process, programming and PLC maintenance method. This course also provides knowledge and skills in designing of controlling automation system based on PLC. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain clearly blocks, parts, components and instructions found in the automation systems. 2. design simple automation sequential control using electromechanical devices and PLC. 3. display the ability to do troubleshooting and maintenance of hardwired and PLC systems using appropriate equipment. 4. demonstrate understanding of PLC automation system norm and standard which are IEC and NEMA standards during practical work session.
4	DFN4213 ADVANCED SWITCHING ANG ROUTING	ADVANCED SWITCHING AND ROUTING course introduces students to the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks **CREDIT (S) : 3** **PRE REQUISITE(S) : DFN3124 SWITCHING ANG ROUTING ESSENTIALS**	1. explore the architecture, components and operations of routers and switches in a larger and more complex networks. 2. perform a configuration of routers and switches for advance functionality. 3. demonstrate a proper troubleshooting procedure for routers and switches in a complex routed IPv4 and IPv6 networks.

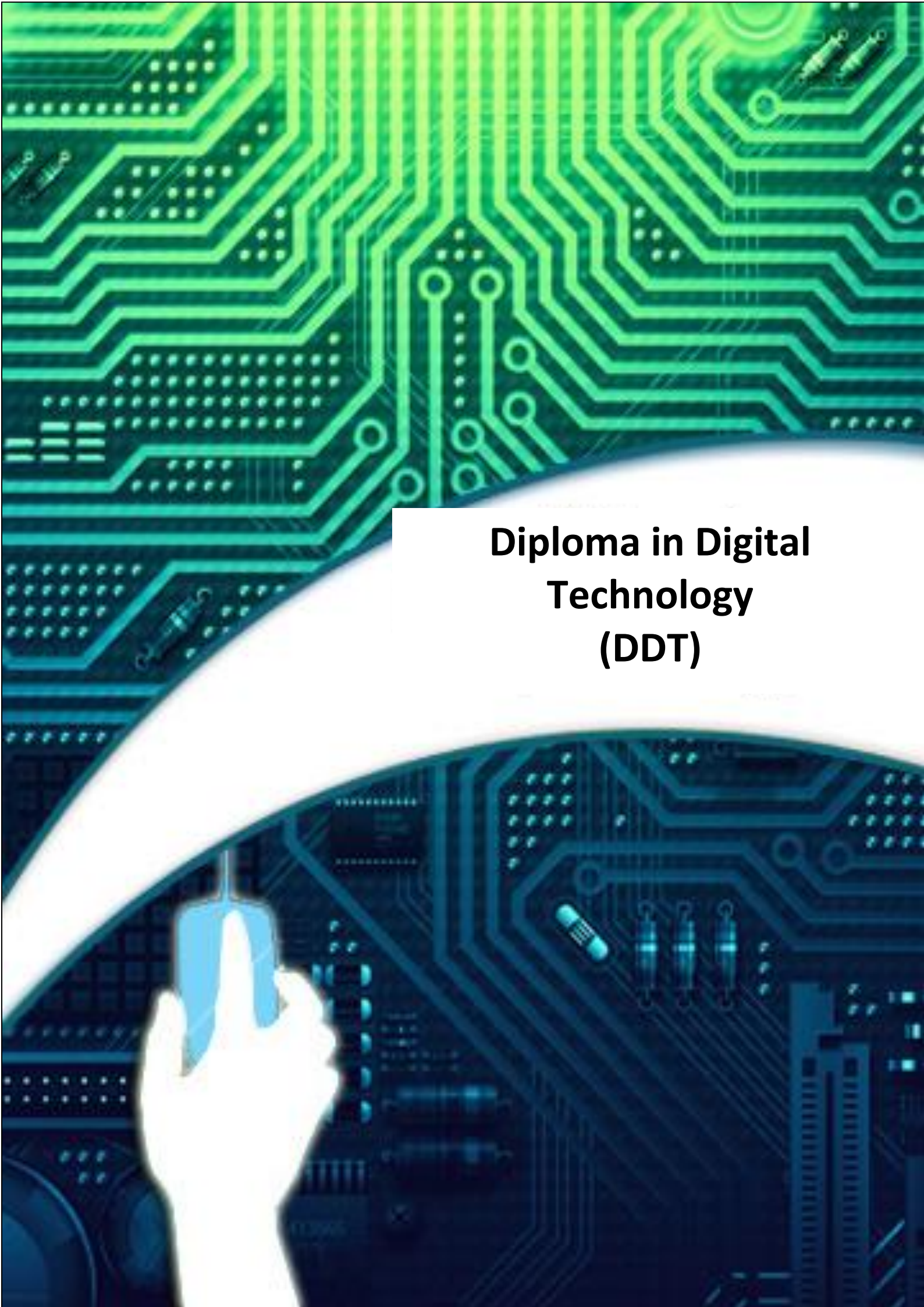
COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
4	DFP3143 WEB DEVELOPMENT	WEB DEVELOPMENT course is designed to introduce students to program a web based application. Students will be exposed to the software and technologies involved in developing web based application. Throughout the course, students will learn proper techniques to develop web based applications starting from designing interfaces to publishing application to a production server. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFP 2033 DATABASE SYSTEM**	1. apply key concepts and techniques in the current development of a world wide web (WWW) application. 2. use HTML features, PHP program structure, file and directory handling appropriately in developing secured dynamic web using MYSQL database. 3. create a web site that can be published on any web platform using an appropriate deployment method.
4	DFP4113 MULTIMEDIA TECHNOLOGY	MULTIMEDIA TECHNOLOGY course is designed to introduce students to multimedia technology. Students will explore the use of multimedia tools in designing and authoring of interactive digital media. Students will be able to insert, create and edit digital images, text, sounds, video and animation to develop multimedia application. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. apply effectively multimedia technology development knowledge based on Multimedia Development Model. 2. produce a complete interactive multimedia application by integrating all multimedia elements such as text, graphics, audio, video and animation using multimedia authoring tools. 3. demonstrate the ability to lead a multimedia development team to complete assigned multimedia project within a stipulated time.
4	DFT3123 HUMAN COMPUTER INTERACTION	HUMAN COMPUTER INTERACTION course aims to provide students with fundamental knowledge of HCI, including areas such as user and task analysis, human factors, ergonomics, accessibility standards and universal design. The course focuses on awareness in computer technology and how usability plays a major part in achieving effective implementation of designs and interactivity. This provides a new dimension that will enrich the lives of people who are ICT savvy **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. identify the concepts of user interface design to elevate technical complexity for usable product that accepted by user. 2. organize a various styles of interfaces interaction of software and hardware products. 3. develop appropriate interface design and evaluation techniques for an interactive system effectively in real life.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
4	DFS4123 INFORMATION SECURITY MANAGEMENT	INFORMATION SECURITY MANAGEMENT course provides a foundation in the Information Security Management System (ISMS) knowledge and skills necessary for ICT professionals. Students are exposed to ISMS domain, security policies, concept and good practices in securing computing management and the use of standards and policies in organization. This course provides students with the good knowledge of disaster recovery planning. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain security standards and organizations roles in network security field. 2. propose policies and procedures for managing security incidents based on guidelines and models for writing policies. 3. response to security risk using appropriate solution based on organizational security policies and procedures.
4	DFN4133 NETWORK PROGRAMMING	NETWORK PROGRAMMING course focuses on the concept of sockets as means of using Internet Protocol (IP) to communicate between machines and using Java programming language to establish the network communication. The course introduces elements of network programming and concepts involved in creating network applications using sockets. This opens up a whole new class of applications to programmers. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC3013 OBJECT ORIENTED PROGRAMMING**	1. explain the concept of data transmission in transport layer in a network application. 2. apply appropriate type of socket programming that meets the requirement of a network application. 3. response to security risk using appropriate solution based on organizational security policies and procedures
4	DUF2002 BAHASA ARAB 1	BAHASA ARAB 1 ini membincangkan kemahiran mendengar, bertutur dan menulis huruf-huruf konsonan, vokal dan perkataan Bahasa Arab. Pelajar akan diperkenalkan dengan bunyi-bunyi vokal dan konsonan Bahasa Arab. Ganti Nama Diri akan digunakan sebagai paksi kepada 14 bentuk perubahan kata Bahasa Arab. Pendekatan komunikasi akan diterapkan melalui dialog-dialog yang memberi penekanan kepada konteks sebenar komunikasi dan gaya bahasa yang diperlukan. Pelajar akan mampu untuk menuturkan frasa-frasa mudah dalam konteks komunikasi harian. **CREDIT (S) :** **PRE REQUISITE(S) : NONE**	1. Menulis huruf-huruf konsonan, vokal, suku kata dan perkataan Bahasa Arab termasuk sistem pernomboran, masa dan warna dengan betul. 2. Bertutur dan membaca mengenai ucap selamat dan perbualan asas dengan menggunakan perkataan, frasa dan ayat yang betul. 3. Menggunakan ganti nama diri yang dihubungkan dengan kata nama, kata kerja dan kata tugas dalam aktiviti harian dengan betul.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
5	DFN6213 WAN TECHNOLOGIES	WAN TECHNOLOGIES course introduces students to the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Knowledge and skills are developed to implement virtual private network (VPN) operations in a complex network. Student will able to monitor and troubleshoot network operation by using syslog, SNMP, and NetFlow tools. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFN4213 ADVANCED SWITCHING AND ROUTING**	1. Categorized the WAN technologies and network services required by converged applications in a complex network. 2. Apply a configuration on network devices to resolve common issues with data link protocols. 3. Integrate a systematic troubleshooting approach to resolve complex WAN connectivity issues.
5	DFN6223 NETWORK SECURITY	NETWORK SECURITY course is designed to focus on the overall security processes based on security policy emphasizing on hands-on skills in the areas of a secure perimeter, secure connectivity, identity services and intrusion detection. The knowledge delivered shall enable students to identify some of the security approaches to design a defensive strategy in a network environment. Discussion on the security features of Microsoft Windows Server and Open Source Software network operating systems are also included. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. identify network vulnerabilities and apply various tools, technologies with cryptographic protocols and standards effectively to protect the given network from attacks and threats. 2. implement the mechanisms of authentication and encryption efficiency in accessing to the network system of an organization. 3. perform network and data recovery procedures effectively for a given network disasters.
5	DFP6213 BUSINESS INTELLIGENCE	BUSINESS INTELEGENCE provides knowledge regarding the concept of right information in the right format to the decision makers at the right time. This course help students to anticipate market change, finding value in gigantic amounts of data collected in modern enterprises, enhancing the quality of the decision-making process and improving the rate at which the enterprises are able to make decisions. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. identify the core business processes, model data for OLTP, OLAP systems and data warehouse. 2. apply best practices in BI/DW and how to convert an OLTP schema into a dimensional schema model through various techniques of data warehousing. 3. model a business scenario, identify the metrics, indicators and make recommendations to achieve the business goal.

COURSE SYNOPSIS (DNS)			
SEMESTER	COURSE	SYNOPSIS	1. COURSE LEARNING OUTCOME (CLO)
5	**DBM4213 QUANTITATIVE STATISTICS**	QUANTITATIVE STATISTICS course introduces students to basic statistical concepts such as organizing data, numerical descriptive measures, probability and its applications, probability distributions, sampling, estimation and hypothesis testing. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. apply general understanding on the organizing and preparation of raw data for statistical analysis by using different types of probability distributions to solve problems. 2. analyze sampling theory in the estimation of mean and proportion when attempting statistical analysis. 3. conduct hypothesis testing on sample data to make accurate decisions about a population parameters.
5	DFP6223 MOBILE APPLICATION DEVELOPMENT	MOBILE APPLICATION DEVELOPMENT introduces mobile application development for the Android platform. Android is a software stack for mobile devices that includes an operating system, middleware and key applications. The Android SDK provides the tools and APIs necessary to begin developing applications on the Android platform using the Java programming language. Students will learn skills for creating and deploying Android applications, with particular emphasis on software engineering topics including software architecture, software process, usability, and deployment. Topics will include Android Development Environment, user interfaces, audio, persistence, SQLite databases, location, sensors, and graphics **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC3013 OBJECT ORIENTED PROGRAMMING**	1. discuss the frameworks, current trends and design considerations of mobile application development in Android. 2. develop mobile Android application using Android Development Tools with major components of Android API. 3. deploy mobile Android application through Apps market that fulfill client requirements and usability.

Diploma in Digital Technology (DDT)



6.6 DIPLOMA DIGITAL TECHNOLOGY (DDT)

6.6.1 PROGRAMME OVERVIEW

SYNOPSIS

In order to keep abreast with rapid technological advancement and evolving requirement in industries today, Department of Polytechnic Education (DPE) has worked collaboratively with the nation's key industry players in developing and reviewing the curriculum of Information and Communication Technology (ICT) programme. This collaboration aims to equip students with up-to-date knowledge and relevant skills to meet the global challenges and the requirement of the ICT industries. This initiative move, namely blended learning, is a form of pedagogy that blends classroom instructions with structured simulated real-life working experience which prepares students for a competitive edge in today's workplace.

This is true especially in the ICT area where there is a rapidly growing demand for highly skilled and technically savvy workforce. The activities of many ICT industries require increasingly sophisticated ICT workforce. One of the most important factors gearing towards the growth of productivity is qualified manpower in this area, in order for the industry to develop and remain competitive in the world market. To address these issues, the Curriculum Development Division (CDD), DPE cooperates with the industries, Private Higher Learning Institutions and Public Higher Learning Institutions to develop and review the curriculum of the ICT programme. This curriculum integrate with the curriculum of professional certification and industry-led curriculum such as Computer Technology Industry Association (CompTIA A+), Oracle Java Certification, Microsoft Computer System Administrator (MCSA) and Microsoft Certified Desktop Service Technician (MCDST), Cisco Certified Network Associates (CCNA), EC-Council Network Security (ENSA), Certified Ethical Hacker (CEH) and Infosys Campus Connect programme, so as to give the opportunity for the students to sit for professional certificate examinations by the end of the final semester. This will give the students an added value and ensure that the knowledge and skills acquired through this programme are relevant with the needs of ICT industries specifically.

6.6.2 JOB PROSPECTS

ICT manpower demand is expected to have a strong growth recently based on the research done by Malaysia Digital Economy Corporation (MDEC). The rapid development in ICT has raised the demand for qualified IT graduates that meet the industry needs and requirements for both locally and globally. Thus, graduates from this programme are equipped with the knowledge, skills, attitude and abilities that can applied to a broad range of careers in the ICT industrial world and businesses. The knowledge and skills that the students acquire from the programme will enable them to participate in the job market such as:

k) Computer Application Programmer
l) Internet Programmer
m) Web Programmer
n) Database Programmer
o) System Analysts Assistant
p) Software Developer
q) Database Administrator
r) Software Tester
s) System Support Personnel
t) Systems Programmer
u) Network Support Personnel
v) Network Administrator
w) IT Supporting Engineer
x) Assistant Network Engineer
y) Technical Helpdesk / Support

6.6.3 PROGRAMME AIMS (PAI)

The graduates of Diploma in Digital Technology will have the knowledge, technical skills and attitude to adapt themselves with new technological advancement and challenges in the fields of Digital Technology.

6.6.4 PROGRAMME LEARNING OUTCOMES (PLO)

Upon completion of the programme, graduates will be able to:

1. apply the foundation of computing, mathematics and soft skills to be competent and possess strong understanding in related Information Technology (IT) fields;

2. practice technical skills by applying appropriate methodologies, models and techniques in IT fields;

3. communicate effectively with IT Professionals, other professionals and community;

4. demonstrate strong analytical and critical thinking skills to troubleshoot and solve problems within realistic constraints by applying knowledge, principles and skills in IT;

5. demonstrate an awareness of and consideration for society, health, safety, legal and cultural issues and their consequent responsibilities;

6. engage in life-long learning and professional development to enrich knowledge and competencies;

7. inculcate entrepreneurial skills in the related discipline that contributes towards national growth and be competitive in IT industries;

8. adhere to professional codes of ethics and enhance humanistic values to adapt to the real challenges in working environment; and

9. demonstrate effective leadership and teamwork skills.

6.6.5 LIST OF COURSES OFFERED FOR DDT PROGRAMME

No	Semester	Courses			Classifications	Credit(s)
1.	Semester 1	DFC	1033	Introduction to Computer System	Common Core	3
2.		DFC	2053	Computer System Architecture	Common Core	3
3.		DFC	1042	Problem Solving and Program Design	Common Core	2
4.		DFC	2073	Programming Fundamentals	Common Core	3
5.		DFC	2063	Operating System	Common Core	3
6.		DBM	1033	Mathematical Computing	Common Core	3
7.		MPU	1012	Pengajian Malaysia	Compulsory	2
		TOTAL CREDIT HOURS FOR SEMESTER 1				**19**
Course implementation and schedule are conducted in sequence / serial basis: a. DFC1042 and DFC2073						
8.	Semester 2	DFC	2083	Database Design	Common Core	3
9.		DFC	3023	Introduction to Networks	Common Core	3
10.		DFT	4013	Security Basics and IT Professional	Common Core	3
11.		DBM	2033	Discrete Mathematics	Common Core	3
12.		DFC	3033	Data Structures	Common Core	3
13.		MPU	2011	Ko-Kurikulum 1	Compulsory	1
14.		MPU	2012	*Pengajian Islam or	Compulsory	2
		MPU	2022	**Pendidikan Moral	Compulsory	2
		TOTAL CREDIT HOURS FOR SEMESTER 2				**18**
Course implementation and schedule are conducted in sequence / serial basis: a. DFC3023 and DFT4013 * For Muslim students ** For Non Muslim Students						
TRACK SOFTWARE AND APPLICATION DEVELOPMENT						
15.	Semester 3	DFP	4023	Human Computer Interaction	Common Core	3
16.		DFC	3043	System Analysis And Design	Common Core	3
17.		MPU	3012	Ko-Kurikulum 2	Compulsory	2
18.		DFT	5013	Cyberpreneurship	Specialisation	3
19.		DFT	3013	Web Design Technologies	Specialization	3
20.		DFT	4024	Object Oriented Programming	Specialization	4
		TOTAL CREDIT HOURS FOR SEMESTER 3				**18**

No	Semester	Courses			Classifications	Credit(s)
TRACK NETWORK SYSTEMS						
21.	Semester 3	DFP	4023	Human Computer Interaction	Common Core	3
22.		DFC	3043	System Analysis And Design	Common Core	3
23.		MPU	3012	Ko-Kurikulum 2	Compulsory	2
24.		DFT	5013	Cyberpreneurship	Specialisation	3
25.		DFN	4013	Network Fundamentals	Specialization	3
26.		DFN	4023	Open Source Operating System	Specialization	3
		TOTAL CREDIT HOURS FOR SEMESTER 3				**17**
TRACK SOFTWARE AND APPLICATION DEVELOPMENT						
27.	Semester 4	MPU	4013	English for Digital Technology	Compulsory	3
28.		DFT	3023	Digital Multimedia	Specialisation	3
29.		DFP	4013	Visual Programming	Specialisation	3
30.		DFP	4033	Integrative Programming and Technologies	Specialisation	3
31.				Elective 1	Elective	2
32.				Elective 2	Elective	3
		TOTAL CREDIT HOURS FOR SEMESTER 4				**17**
TRACK NETWORK SYSTEMS						
33.	Semester 4	MPU	4013	English for Digital Technology	Compulsory	3
34.		DFN	5033	Network Security	Specialisation	3
35.		DFN	4043	Switching & Routing Essentials	Specialisation	3
36.		DFN	5013	Basic Routing Technology	Specialisation	3
37.				Elective 1	Elective	2
38.				Elective 2	Elective	3
		TOTAL CREDIT HOURS FOR SEMESTER 4				**17**
TRACK SOFTWARE AND APPLICATION DEVELOPMENT						
39.	Semester 5	DFT	6014	Integrated Project	Specialisation	4
40.		DFP	5013	Mobile Application Development	Specialisation	3

No	Semester	Courses			Classifications	Credit(s)
41.		DFP	6033	Secure Mobile Computing	Specialisation	3
42.				Elective 3	Elective	3
		TOTAL CREDIT HOURS FOR SEMESTER 5				**13**
TRACK NETWORK SYSTEMS						
43.	Semester 5	DFT	6014	Integrated Project	Specialisation	4
44.		DFN	6014	Advanced Routing	Specialisation	4
45.		DFN	6023	Connecting Wan	Specialisation	3
46.				Elective 3	Elective	3
		TOTAL CREDIT HOURS FOR SEMESTER 5				**14**
47.	Semester 6	DUT	7019	Internship	Industrial Training	9
		TOTAL CREDIT HOURS FOR SEMESTER 6				**9**
Electives : Track Software And Application Development						
48.	Elective	DFP	5023	IOS Application Development		3
49.	Elective	DFP	5033	Software Requirement And Design		3
50.	Elective	DFW	5013	Advanced Web Development		3
51.	Elective	DFW	6013	Security In Web Programming		3
52.	Elective	DFP	4053	Database Administration		3
53.	Elective	DFT	1012	Inventive Problem Solving		2
Electives : Track Network Systems						
54.	Elective	DFT	3013	Web Design Technologies		3
55.	Elective	DFT	4024	Object Oriented Programming		4
56.	Elective	DFN	4033	Fibre Optic Communication System		3
57.	Elective	DFD	4043	Cloud Computing		3
58.	Elective	DFN	5023	Network Design		3
59.	Elective	DFN	5043	Socket Programming		3
60.	Elective	DFN	6033	Open Source Server Administration		3
61.	Elective	DFT	1012	Inventive Problem Solving		2

6.6.6 SYNOPSIS AND COURSE LEARNING OUTCOME

COURSE SYNOPSIS (DDT)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
1	DFC1033 INTRODUCTION TO COMPUTER SYSTEM	INTRODUCTION TO COMPUTER SYSTEM course that emphasized on the hardware, software and foundation in the basic Information Technology knowledge and skills necessary for ICT professionals. This course is the necessary component in the Body of Knowledge (BoK) in Computing Studies. To equipped foundation in Information Technology, students with the ability to exhibit analytical and problem solving skills to solve IT related problems. **CREDIT (S) : 3** **PRE REQUISITE(S) :**	1. discuss actively the basic concepts, trends, issues and challenges related to current information technology. 2. apply knowledge of computer technology, computer hardware and computer maintenance and troubleshooting that comply with computing standard. 3. adhere to standard procedures and safety management in identifying the faults in the computer system.
1	DFC2053 COMPUTER SYSTEM ARCHITECTURE	This course is continuity to foundation knowledge in computer system and technology which is a part of the requirement in body of knowledge in Information Technology field. It's very basic computer machinery skills needed to enhance to next level. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC1033 INTRODUCTION TO COMPUTER SYSTEM**	1. explain effectively computer function, input, output and central processing unit in computer system. 2. apply appropriate method to solve arithmetic problem in numbering system and sequential logic circuit. 3. write a simple program in assembly language to perform given task.
1	DFC1042 PROBLEM SOLVING AND PROGRAM DESIGN	PROBLEM SOLVING AND PROGRAM DESIGN is a basic computer application course that emphasized on problem solving and program design. This course is a necessary component in the Body of Knowledge (BoK) in Computing Studies. To equipped foundation in Information Technology, students with the ability to exhibit analytical and problem solving skills to solve IT related problems. **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. Explain the basic computer and programming fundamentals with appropriate example of languages. 2. Practice different types of problem solving method to solve problem efficiently. 3. Solve problems by applying related theories of the basic programming technique to a given particular scenario using programming life cycle.

COURSE SYNOPSIS (DDT)			
SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	DFC2073 PROGRAMMING FUNDAMENTALS	PROGRAMMING FUNDAMENTALS course introduces the fundamentals concepts of structured programming, and provides a comprehensive introduction to programming for Information Technology majors. Topics include data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. Practical lab sessions and problem-based questions will help to develop the skills required to identify the best data and program constructs to solve well-defined problems. The course also aims to explore the logic of programming via the algorithm concepts and implement them in programming structures including functions, arrays, strings, and pointers. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC1042 PROBLEM SOVING AND PROGRAM DESIGN**	1. Explain the fundamental programming constructs element (control structures, arrays, structures, functions and pointers) and articulate how they are used to develop a program. 2. Apply programming constructs to realize a computer program with debugging techniques to achieve a working program. 3. Solve computing problems using suitable algorithmic solutions and code these algorithmic solutions in a computer programming language.
1	DFC2063 OPERATING SYSTEM	This course is continuity to foundational knowledge in problem solving which is a part of the requirement in body of knowledge in Information Technology field. It's a very basic computer programming skills needed to enhance to next level. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain the concept of operating system, memory, process and file management 2. perform installation of operating system with appropriate setting and management. 3. Solve problem that related to mobile devices operating system by producing an accurate solution in a team.
2	DFC3023 INTRODUCTION TO NETWORKS	Introductions to networks is an introductory computer networks subject and it aims to provide a wide overview of networking and its technologies such as the seven layers of OSI and TCP/IP model. This course also provides students with the knowledge in wireless networking device and networks troubleshooting. Students will get an experience in troubleshooting and configuration by using networking tools. **CREDIT (S) : 3** **PRE REQUISITE(S) : DCF1033 INTRODUCTION TO COMPUTER SYSTEM**	1. explain the communication principles of computer networks appropriately. 2. setup a network with appropriate network devices for a given situation successfully. 3. perform troubleshooting and maintaining networks in a logical and practical manner efficiently.

COURSE SYNOPSIS (DDT)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
2	**DFT4013 SECURITY BASIC AND IT PROFESSIONAL**	Security Basic and IT Professional course is intended to help student's gain fundamental and comprehensive understanding of information security which will focus on an overview of major information security issues, technologies and approaches. This course is a comprehensive study of the principle and practices of computer system security including operating system security, network security, software security and web security. Student are exposed to the principle and good practices in environmentally sustainable secured computing and the use of appropriate tools and technologies in managing Information System Environment. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. Explain information security common threats and attacks faced today, the foundational theory behind information security, the basic principles and technique when designing a secure system. 2. Practice attack and defense work using work today's technology and various tools to encounter threats, attack and differentiate information security vulnerability. 3. Apply proper techniques and procedures to create a secured environment in an organization.
2	**DFC3033 DATA STRUCTURES**	This course is a necessary component in the Body of Knowledge (BoK) in Information Technology field. BoK developed based on the mapping of the professional bodies, higher education institutions within and outside the country, the history and theory of this field. Data structures are important as it's has been used in almost every program or software system. Some programming languages emphasize data structures as the key organizing factor in software design. **CREDIT (S) : 3** **PRE REQUISITE(S) : DFC2073 PROGRAMMING FUNDAMENTALS**	1. explain the concepts of various data structures appropriately. 2. apply the concepts of various data structures precisely. 3. solve problems by using appropriate data structures.
2	**DFC2083 DATABASE DESIGN**	This course is a necessary component in the Body of Knowledge (BoK) in information Technology field. BoK developed based on the mapping of the professional bodies, higher education institutions within and outside the country. All real life projects use database to storage huge volumes of data. It is extremely important for software professional to understand the concepts of DBMS. The knowledge of DBMS enables a software engineer to efficiently manage the data. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. apply the fundamentals concepts and structures of database management and relational data model in database development process. 2. implement the relational database design and data modeling using entity-relationship (ER) model and normalization concepts to drive a physical design for a database. 3. solve an organization's requirement by using the database query to manipulate a database with an appropriate commercial Database Management System (DBMS).

COURSE SYNOPSIS (DDT)			
SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	DFC3043 SYSTEM ANALYSIS AND DESIGN	This course is a necessary component in the Body of Knowledge (BoK) in Computing Studies. This course introduces the students to the concepts and skills of system analysis and design. Systems analysis is the process of turning a set of user requirements into a logical system specification. Systems design takes the logical specification and converts it into a set of designs that can then be implemented to create a working application. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. explain the concept of System Analysis and Design and project management relating to various model, tools and techniques. 2. produce the key deliverable's of System Development Life Cycle (SDLC) activities. 3. solve a wide range of problem related to analysis, design and construction of system development in a team.
3	DFT5013 CYBERPRENEURSHIP	The proliferation of new IT combined with the reach of the Web, Internet and mobile devices is opening up new possibilities for individuals and companies to leverage IT to create new digital businesses. It's a part of centrepiece of a contemporary. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. apply the basics of cyberpreneural management, financing and marketing in various social media mix used in order to be a successful cyberpreneur. 2. produce a good cyber business plan in a group to implement a cyber business system that is sustainable for future expansion. 3. work collaboratively to venture business opportunities by using cyber social tools that suits the business needs.
3	DFT4024 OBJECT ORIENTED PROGRAMMING	The course applie3s the object programming methodology, in contrast to the methods introduced before. The method is relevant to the current industry and mobile based application. Most complex software systems are designed and built using Object Oriented Programming languages. **CREDIT (S) : 4** **PRE REQUISITE(S) : DFC1042 PROBLEM SOLVING AND PROGRAM DESIGN**	1. explain the concepts of object oriented design, methodology and programming in application development. 2. design a program by applying the Object Oriented Concepts using appropriate programming tools. 3. solve problems using the Object Oriented Programming approach and exception handling to produce well engineered program.

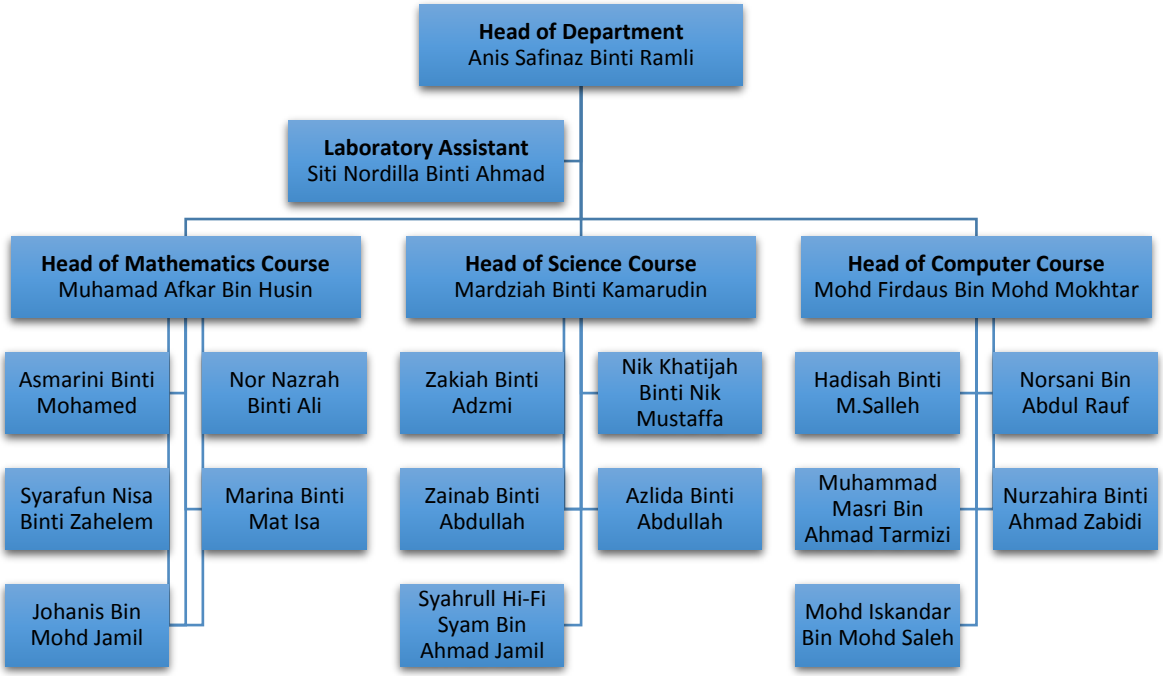
COURSE SYNOPSIS (DDT)			
SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	DFT3013 WEB DESIGN TECHNOLOGIES	The Internet and the World Wide Web had a profound effect on the way computer scientists do their work. This is a foundation course for a dynamic web development using various web design technologies. **CREDIT (S) : 3** **PRE REQUISITE(S) : NONE**	1. employ key concepts of web design theories, web terminology in the current web development and articulate ethical positions on contemporary issues related to web. 2. use HMTL features, CSS structures for web design and Java Script for interactive pages in designing an interactive web page. **3.** create interactive web application that can be published on any web platform using an appropriate deployment method.
5	DFT6014 INTEGRATED PROJECT	Integrated Project Development is the key component of Foundation Program of Infosys Campus Connect. The objective is to expose students to project development best practices and provide a channel to apply the concepts assimilated during the classroom sessions. The project requirement are to be finalized by the faculty members and are to be evaluated as per the project evaluation framework. **CREDIT (S) : 4** **PRE REQUISITE(S) : COMPLETE MODULE 2- PLATFORM TECHNOLOGIES, MODULE 3- PROGRAMMING ESSENTIALS AND MODULE 4- COMPUTING FOUNDATION.**	1. propose a scheduled project task within estimated duration for the development stages. 2. produce an end product and detail project documentation to be used in the project's maintenance and future expansion. 3. work effectively in project development team to achieve a productive collaborative work.
4	DFT1012 INVENTIVE PROBLEM SOLVING	INVENTIVE PROBLEM SOLVING course is designed to enable today's students to bring to such session a new series of tools and techniques called TRIZ also known as Theory of Inventive Problem-Solving. One of the foundational premises of this methodology is the theory that at the root of all inventive problems is a contradiction, in the form of either technical or physical opposing forces, which will need to be overcome for an inventive solutions to be developed. Elective **CREDIT (S) : 2** **PRE REQUISITE(S) : NONE**	1. Apply the innovation cycle, inventive problem solving techniques and fundamentals of contradiction matrix theory. 2. Practice the inventive principles to develop a proposed inventive solution. 3. Solve physical contradictions using separation principles.

COURSE SYNOPSIS (DDT)			
SEMESTER	**COURSE**	**SYNOPSIS**	**COURSE LEARNING OUTCOME (CLO)**
6	**DUT7019 INTERNSHIP**	To provide opportunities for students to the real working environment. Students have the opportunity to relate the learning with the workplace. Students need to apply the knowledge and skills they have learned and adapted for the needs of the organization. Involves the process of acquiring knowledge and skills required in the workplace. Participation of industry in a formal or informal way. **CREDIT (S) : 9** **PRE REQUISITE(S) : COMPLETE REQUIRED COMPULSORY AND CORE MODULES.**	1. apply related knowledge and skills at the workplace. 2. communicate effectively with others. 3. practice teamwork. 4. professionally and ethically comply with policies, procedures and rules of the organization. 5. explain the tasks assigned (during the industrial training) according to the prescribed format.

SUPPORTING DEPARTMENTS & UNITS

7.1 MATHEMATICS, SCIENCE AND COMPUTER DEPARTMENT (JMSK)

7.1.1 ORGANISATION CHART



7.1.2 MATHEMATICS, SCIENCE AND COMPUTER DEPARTMENT LECTURERS

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7.1.3 COURSE LEARNING OUTCOME (JMSK)

SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	DBM1033 Mathematical Computing	MATHEMATICAL COMPUTING course introduces students to numbering system, geometry and complex numbers. Calculus covers the simple techniques of differentiation and integration. In addition, this course also exposed to basic concept of matrices and linear algebra to help them in solving mathematical problem in organizing data through theoretically and practically. **CREDIT (S): 3** **PREREQUISITE (S): NONE**	Upon completion of this course, students should be able to: 1. Apply mathematical concepts in the areas of number systems, complex numbers, matrices, linear algebra, geometry, and differentiation & integration. (C3, PLO1) 2. Find mathematical solutions using the appropriate techniques in mathematics. (C3, A3, PLO1, PLO4) 3. Solve related mathematical problems using appropriate formulae and laws. (C4, A3, PLO1, PLO4)
2	DBM2033 Discrete Mathematics	DISCRETE MATHEMATICS course introduces students to logical and mathematical thinking. This course focuses on providing basic logic, sets, relations and functions, as well as graphs and trees which integrate symbolic tools, graphical concepts and numerical calculations. This course also addresses the counting principle as well as induction and recursion which are related to the information technology programme. **CREDIT (S): 3** **PREREQUISITE (S): NONE**	Upon completion of this course, students should be able to: 1. Explain the basic terminology of basic logic, proofs, counting principles, functions, relations and sets. (C2,PLO1) 2. Perform the standard operations associated with proposition logic, graphs and trees. (C3, PLO1) 3. Solve related mathematical problems using appropriate concepts, formulas and techniques. (C4, A3, PLO1, PLO4)

7.1.4 MATRIX OF COURSE ASSESSMENT (JMSK)

Code & Course	Quiz		Test		Tutorial Task		Assignment		Final Exam
	Qty	%	Qty	%	Qty	%	Qty	%	%
DBM1033 Mathematical Computing	4	10	1	15	5	15	1	20	40

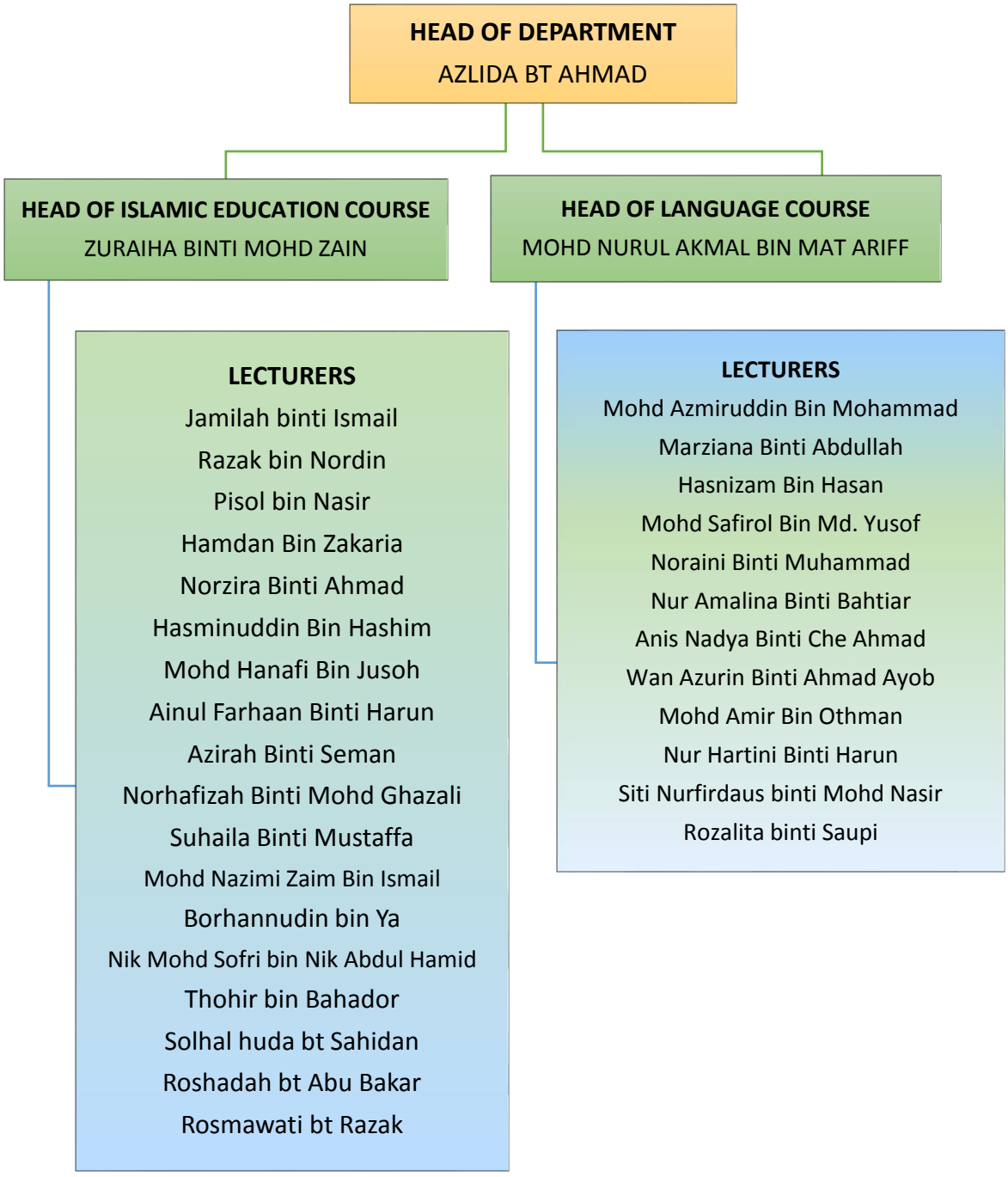
Code & Course	Quiz		Tutorial Task		Assignment		Final Test
	Qty	%	Qty	%	Qty	%	%
DBM2033 Discrete Mathematics	4	15	4	20	1	15	40

7.1.5 LAB FACILITIES (JMSK)

Name	Quantity	Lab Supervisor
Science Laboratory	1	Zakiah Binti Adzmi
CAD Laboratory 1	1	Mohd Iskandar Bin Mohd Saleh
Class Room AK1	1	Mohd Iskandar Bin Mohd Saleh
Class Room 59 & 60	2	Muhammad Masri Bin Ahmad Tarmizi
Class Room 61	1	Zainab Binti Abdullah
Class Room 62	1	Syarafun Nisa Binti Zahelem
Class Room 63	1	Syahrull Hi-Fi Syam Bin Ahmad Jamil

7.2 GENERAL STUDIES DEPARTMENT (JPA)

7.2.1 ORGANISATION CHART



7.2.2 GENERAL STUDIES DEPARTMENT LECTURERS

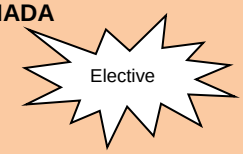
No	Name	Designation	Contact No.	E-mail
1	Azlida Binti Ahmad	Head of Department	04-9886277	azlidaahmad.poli@1govuc.gov.my
2	Jamilah Binti Ismail	Senior Lecturer	04-9886242	jamilahis.poli@1govuc.gov.my
3	Mohd Azmiruddin Bin MOhammad	Senior Lecturer	04-9886274	mdazmir66@gmail.com
4	Marziana Binti Abdullah	Senior Lecturer	04-9886274	marzianabdullah.poli@1govuc.gov.my
5	Razak Bin Nordin	Senior Lecturer	04-9886276	razaknordin.poli@1govuc.gov.my
6	Pisol bin Nasir	Senior Lecturer	04-9886274	Ibnunasr_jpa@yahoo.com
7	Mohd Nurul Akmal Bin Mat Ariff	Head of Unit	04-9881652	mohdnurulakmal.poli@1govuc.gov.my
8	Zuraiha Binti Mohd. Zain	Head of Unit	04-9881653	zuraiha.poli@1govuc.gov.my
9	Hamdan Bin Zakaria	Lecturer	04-9886273	hamdanzakaria.poli@1govuc.gov.my
10	Norzira Binti Ahmad	Lecturer	04-9886275	norziraahmad.poli@1govuc.gov.my
11	Hasnizam Bin Hasan	Lecturer	04-9886274	hasnizamhasan.poli@1govuc.gov.my
12	Hasminuddin Bin Hashim	Lecturer	04-9886274	hasminuddin.poli@1govuc.gov.my
13	Mohd Hanafi Bin Jusoh	Lecturer	04-9886272	mohdhanafijusoh.poli@1govuc.gov.my
14	Ainul Farhaan Binti Harun	Lecturer	04-9886273	ainulfarhaan.poli@1govuc.gov.my
15	Azirah Binti Seman	Lecturer	04-9886276	azirahseman.poli@1govuc.gov.my
16	Norhafizah Binti Mohd Ghazali	Lecturer	04-9886276	nor.hafizah.poli@1govuc.gov.my
17	Nur Hartini Binti Harun	Lecturer	04-9881656	nurhartiniharun.poli@1govuc.gov.my
18	Mohd Safirol Bin Md Yusof	Lecturer	04-9886276	mohdsafirol.poli@1govuc.gov.my
19	Noraini Binti Muhammad	Lecturer	04-9886273	norainimuhammad.poli@1govuc.gov.my
20	Nur Amalina Binti Bahtiar	Lecturer	04-9881657	amalinabahtiar.poli@1govuc.gov.my
21	Suhaila Binti Mustaffa	Lecturer	04-9886276	suhailamustaffa.poli@1govuc.gov.my
22	Anis Nadya Binti Che Ahmad	Lecturer	04-9881657	anisnadya.poli@1govuc.gov.my
23	Mohd Nazimi Zaim Bin Ismail	Lecturer	04-9881656	mohdnazimizaim.poli@1govuc.gov.my
24	Wan Azurin Binti Ahmad Ayob	Lecturer	04-9886273	wanazurin.poli@1govuc.gov.my
25	Nik Mohd Sofri Bin Nik Abdul Hamid	Lecturer	04-9886273	nikmohdsofri.poli@1govuc.gov.my
26	Borhannudin Bin Ya	Lecturer	04-9886273	borhannudinya.poli@1govuc.gov.my
27	Mohd Amir Bin Othman	Lecturer	04-9886276	mohdamirothman.poli@1govuc.gov.my
28	Thohir Bin Bahador	Lecturer	04-9881657	thohirbahador.poli@1govuc.gov.my
29	Solhal huda bt Sahidan	Lecturer	04-9886275	solhalhuda@gmail.com
30	Roshadah bt Abu Bakar	Lecturer	04-9886276	Roshadah5058@gmail.com
31	Rosmawati bt Razak	Lecturer	04-9886276	Wardati83@yahoo.com

No	Name	Designation	Contact No.	E-mail
32	Siti Nurfirdaus Binti Mohd Nasir	Lecturer	04-9881657	sitinurfirdaus.poli@1govuc.gov.my
33	Rozalita Binti Saupi	Lecturer	04-9881657	rozalitasaupi.poli@1govuc.gov.my

7.2.3 COURSE LEARNING OUTCOME (JPA)

SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	MPU 1012 PENGAJIAN MALAYSIA	**PENGAJIAN MALAYSIA** memupuk penghayatan ke arah melahirkan warganegara yang setia dan cinta kepada negara, berwawasan, bangga sebagai rakyat Malaysia, mampu menghadapi cabaran, kea rah mencapai kesejahteraan hidup serta dapat menghayati peranan Malaysia di arena antarabangsa.Selain itu, cabaran-cabaran semasa yang didapati oleh Malaysia turut mendapat liputan di dalam kursus ini. Pendedahan kursus kepada zaman prasejarah Malaysia, zaman kemerdekaan,pembentukan Malaysia, system dan struktur pentadbiran Malaysia, system demikrasi di Malaysia,perlembagaan, dasar-dasar utama dan juga isu-isu semasa sosial dan politik di Malaysa. **KREDIT : 2** **PRASYARAT : TIADA**	Di akhir kursus ini, pelajar akan dapat: 1. Menerangkan sejarah bangsa dan negara serta perkembangan masyarakat dari aspek sosio budaya, politik dan ekonomi (C2,LD1) 2. Menjelaskan perlembagaan Malaysia dan sisitem pemerintahan negara serta menghargai usaha dan sumbangan ke arah pembangunan negara (C2,LD1) 3. Mempertingkatkan patriotisme dan mempertahankan kedaulatan undang-undang dan menyumbang ke arah pembangunan negara. (C2, A3, LD1, LD6, LD8)
1	DUE1012 Communicative English 1	**COMMUNICATIVE ENGLISH 1** focuses on speaking skills for students to develop the ability to communicate effectively and confidently in group discussions and in a variety of social interactions. It is designed to provide students with appropriate reading skills to comprehend a variety of texts. It is also aimed to equip students with effective presentation skills. **CREDIT(S) : 2** **PREREQUISITE(S) : NONE**	Upon completion of this course, students should be able to: 1. apply appropriate communication skills in discussions and conversations. (C3) 2. respond to selected texts using appropriate reading skills.(C2) 3. respond to current issues / topics of interest in written form. (C2) 4. 4. apply effective presentation skills.(C3, A3)
2	MPU 2012 PENGAJIAN ISLAM	**PENGAJIAN ISLAM** disediakan untuk melahirkan warganegara, khususnya siswazah islam, yang faham tasawwur Islam sebagai satu cara hidup yang bersepadu dan seimbang, serta berupaya menghadapi pelbagai masalah dan cabaran. Mengamalkan Islam sebagai cara hidup yang merangkumi konsep syahadah, syariat dan akhlak dalam membentuk sikap bertanggungjawab terhadap Allah SWT, manusia dana lam. **KREDIT : 2** **PRASYARAT : TIADA**	Di akhir kursus ini, pelajar akan dapat: 1. Menerangkan unsur tasawwur Islam dan Islam sebagai al-Din dan cara hidup yang syumul (C2,LD1) 2. Mempraktikkan cara perlaksanaan ibadah dengan menghubungkaitkan dengan cara hidup seharian (C2, P3, A3 ,LD1, LD2, LD6, LD8) 3. Membincangkan isu-isu kontemporari dan perkahwinan dalam kumpulan berkaitan syariat Islam, keupayaan Islam dalam menangani pelbagai cabaran yang dihadapi oleh masyarakat Malaysia.(C4 A3, LD1, LD6)

SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
2	MPU 2022 PENDIDIKAN MORAL	**Pendidikan Moral** memberi pengetahuan tentang konsep asas moral. Kursus ini menekankan konsep dan teori moral serta peranan individu terhadap masyarakat dan negara. Kursus ini juga menerangkan elemen-elemen yang mencabar nilai moral di politeknik. **KREDIT : 2** **PRASYARAT : TIADA**	Di akhir kursus ini, pelajar akan dapat: 1. Menerangkan kepentingan Pendidikan Moral dan Falsafah Pendidikan Negara dengan jelas.(C2,LD1) 2. Menjelaskan peranan individu terhadap masyarakat dan negara.(C2,A3, LD1,LD 6) 3. Membincangkan elemen-elemen yang mencabar nilai-nilai moral dan isu-isu sosial di politeknik serta mencadangkan penyelesaiannya dalam kumpulan.(C2,A3,LD 1, LD6, LD8)
3	DUE3012 Communicative English 2	**COMMUNICATIVE ENGLISH 2** emphasises the skills required at the workplace to describe products or services as well as processes or procedures. It also focuses on the skills to give and respond to instructions. This course will also enable students to make and reply to enquiries and complaints. **CREDIT(S) : 2** **PREREQUISITE(S) : DUE1012 COMMUNICATIVE ENGLISH 1**	Upon completion of this course, students should be able to: 1. describe products or services related to their field of studies using appropriate language. (C3, A3) 2. transfer information on processes or procedures using appropriate language from non-linear to linear form. (C3) 3. listen and respond to enquiries using appropriate language.(C3) 4. make and respond to complaints using appropriate language.(C3)
6	DUE5012 Communicative English 3	**COMMUNICATIVE ENGLISH 3** aims to develop the necessary skills in students to carry out a mini project as well as job hunting. Students will learn to present ideas through the use of graphs and charts. Students will learn the process of job hunting which includes job search strategies and making enquiries. They will also learn to write resumes and cover letters. The students will develop skills to introduce themselves, highlight their strengths and abilities, present ideas, express opinions and respond appropriately during job interviews. **CREDIT(S) : 2** **PREREQUISITE(S) : DUE3012 COMMUNICATIVE ENGLISH 2**	Upon completion of this course, students should be able to: 1. describe information contained in graphs and charts effectively. (C4, A3) 2. apply job hunting mechanics appropriately. (C3) 3. respond to interview questions using appropriate language when applying for jobs. (C3)

SEMESTER	COURSE	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
5 & 6	DUA6022 Komunikasi dan Penyiaran Islam	**KOMUNIKASI DAN PENYIARAN ISLAM** memfokuskan kepada penguasaan konsep, kemahiran komunikasi dan penyiaran Islam bagi meningkatkan kefahaman pelajar secara holistik terhadap kursus ini. **KREDIT : 2** **PRASYARAT : TIADA** 	Di akhir kursus ini, pelajar akan dapat: 1. Menjelaskan konsep komunikasi dan penyiaran dalam Islam. (C2 : LD1) 2. Menghubung kait isu-isu semasa dalam komunikasi Islam. (C3, A4 : LD1, LD5) 3. Menunjukkan kemahiran pengurusan dakwah dalam bidang penyiaran Islam. (C3, A3 : LD1, LD6)

7.2.4 MATRIX OF COURSE ASSESSMENT (JPA)

SEMESTER	CODE & COURSE	TYPES OF ASSESSMENT													
1	MPU 1012 Pengajian Malaysia	Quiz		Presentation		PBT		E-Folio		Listening Test		Role Play		Final Exam	
		Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
		2	15	1	20	1	35	-	-	-	-	-	-	1	30
1	DUE1012 Communicative English 1	Quiz		Presentation		Group Discussion		Role Play		Listening Test		Test		Final Exam	
		Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
		1	10	1	30	1	20	-	-	1	20	1	20	-	-
2	MPU 2012 Pengajian Islam	Quiz		Test		Practical		PBT		Listening Test		Project		Final Exam	
		Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
		2	15	-	-	1	20	1	25	-	-	-	-	1	40
2	MPU 2022 Pendidikan Moral	Quiz		Test		Presentation		PBT		Listening Test		Project		Final Exam	
		Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
		2	15	-	-	1	15	1	30	-	-	-	-	1	40
3	DUE3012 Communicative English 2	Quiz		Test		Presentation		Assignment		Listening Test		Role Play		Final Exam	
		Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
		-	-	1	20	1	30	1	20	1	10	1	20	-	-
6	DUE5012 Communicative English 3	Quiz		Test		Presentation		Written Task		Listening Test		Mock Interview		Final Exam	
		Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
		-	-	1	20	1	30	2	20	-	-	1	30	-	-
6	DUA6022 Komunikasi dan Penyiaran Islam	Quiz		Test		Presentation		Written Task		Listening Test		Project		Final Test	
		Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
		2	20	-	-	1	20	-	-	-	-	1	30	1	30

7.2.5 LAB FACILITIES (JPA)

Name	Quantity	Laboratory Supervisor
Language Laboratory	1	**Language Laboratory 1** Mohd Amir bin Othman Mohd Azmiruddin Bin Mohammad
	1	**Language Laboratory 2** Mohd Amir bin Othman Mohd Safirol bin Md Yusof
	1	**Language Laboratory 3** Mohd Amir bin Othman Wan Azurin Binti Ahmad Ayob

7.3 CO-CURRICULUM UNIT

Function	Contact Personnel	Contact No
Co-Curriculum Unit is responsible for managing and coordinating all co-curriculum courses in PTSS. It is designed to ensure that all co-curriculum courses to be implemented smoothly and effectively.	**En. Bustamam Bin Bonari** DH48 Head of Department **En. Johanis Bin Mohd Jamil** DH44 Head of Cocurriculum	Ext : 1988 Ext : 1989

7.3.1 DRX 1000 / DRX 2001 / DRX 3002 / DRX 5000 / DRX 6000 – UNIFORMS

The new syllabus for Uniforms unit has came up with new course structures. Students who has the interest in joining the uniforms unit will be required to complete the whole programme which starts from the first semester untill the last semester.

This course emphasizes on the basic skills of team work which includes marching, first aid, fire prevention, protocol and social etiquette, self management and self esteem.

CODE	SEMESTER
DRX 1000 – General Code register in SPMP Specific Code register in i-koko : DRB 1010 – Askar Wataniah DRB 1050 – PISPA DRB 1090 – RELASIS	1
DRX 2001 – General Code register in SPMP Specific Code register in i-koko : DRB 2011 – Askar Wataniah 1 DRB 2051 – PISPA 1 DRB 2091 – RELASIS 1	2
DRX 3002 – General Code register in SPMP Specific Code register in i-koko : DRB 3012 – Askar Wataniah 2 DRB 3052 – PISPA 2 DRB 3092 – RELASIS 2	3

DRX 5000 – General Code register in SPMP Specific Code register in i-koko : DRB 5010 – Askar Wataniah 3 DRB 5050 – PISPA 3 DRB 5090 – RELASIS 3	5
DRX 6000 – General Code register in SPMP Specific Code register in i-koko : DRB 6010 – Askar Wataniah 3 DRB 6050 – PISPA 4 DRB 6090 – RELASIS 3	6

7.3.2 DRX 2001: SPORTS (SEMESTER 2) – GENERAL CODE REGISTER (i-daftar)

DRS 2* :** SPECIFIC CODE REGISTER **(i-koko)**

DRS 2001 are compulsory to be selected by semester 2 students **who did not choose** the uniforms unit in **SEMESTER 1**. General code for this is DRS 2001. There are 17 sports activity offered every semester. The lists are as shown in the table below :

SPORTS	CODE
BADMINTON	DRS2011
BOLA JARING	DRS 2031
BOLA KERANJANG	DRS 2041
BOLA SEPAK	DRS 2051
BOLA TAMPAR	DRS 2061
CATUR	DRS 2071
DART	DRS 2081
HOKI	DRS 2101
PING PONG	DRS 2151
RAGBI	DSR 2161
SEPAK TAKRAW	DRS 2181
SILAT	DRS 2190
SKUASY	DRS 2201
TAE KWON DO	DRS 2221
TENIS	DRS 2231
FUTSAL	DRS 2261
PETANQUE	DRS 2291
RAGBI SENTUH	DRS 2351
PERMAINAN TRADISIONAL	DRS 2361

7.3.3 **DRX 3002 – CLUBS (SEMESTER 3)** – GENERAL CODE REGISTER **(i-daftar)**

DRK 3* ** : SPECIFIC CODE REGISTER **(I-KOKO)**

DRK 3002 are compulsory to be selected by semester 3 students who successfully pass **DRS 2001 - SPORTS** in SEMESTER 2. General code for this is DRK 3002. There are 11 CLUBS AND SOCIETIES activity offered every semester. The lists are as shown in the table below :

CLUBS	CODE
AUDIO VISUAL	DRK 3022
BAHASA INGGERIS	DRK 3032
FOTOGRAFI	DRK 3052
KAUNSELING	DRK 3072
KEMBARA	DRK 3082
KEUSAHAWANAN	DRK 3092
KOMPUTER	DRK 3112
NASYID	DRK 3142
PENGGUNA	DRK 3152
STUDY CIRCLE	DRK 3162
TARIAN TRADISIONAL	DRK 3172
TARANNUM	DRK 3232
BAHASA ARAB	DRK 3252

SUPPORTING SERVICES

8.0 SUPPORTING SERVICES

8.1 STUDENT AFFAIRS DEPARTMENT (HEP)

Our role is to contribute to the mission of Politeknik Tuanku Syed Sirajuddin (PTSS) by partnering with other academic and administrative units to provide professional, creative, accessible, and high-quality services. To fulfill this role, Student Affairs Department seeks to create an environment that is caring and positive for students; practice champion cultural sensitivity and inclusiveness; provide coordinated services to ensurethe student-focused and technologically up to date; and respond positively to change.

Our vision is to eliminate barriers and create opportunities that enable all students to experience success. Our actions are guided by these values:

- the well-being of all students
- innovation in problem solving
- the positive affirmation of student achievement
- professionalism and ethical behavior
- cooperative and collaborative efforts that include enthusiasm, respect, and humor

To accomplish our mission, Student Affairs Department has established the following goals:

- increase retention and completion rates of students
- develop capacity to deliver services to all campus sites
- institute data-driven analysis for planning and decision-making
- improve attitudes toward and participation in student activities and services
- increase new student enrollment at class, overall and in specified programs

Function	Contact Personnel	Contact No
The Student Affairs Department is responsible for managing : a. student admission and registration b. scholarships c. residential College d. discipline and student behaviour e. registration of students' vehicle f. students activities through club / soceity g. alumni h. Student Representatives Committee (MPP) i. student insurance	**Mohd Ruslan Bin Salikin** (Head of Department) DH48	Ext : 6202
	Rosnizam Bin Kamis (Welfare & Discipline Officer) DH44	Ext : 6203
	Mohd Awaluddin Bin Mohamed Bashir (Recruitment and Data Officer) DH41	Ext :1040
	Zulina Binti Yusoff (Walfare Officer) DH41	Ext : 6204
	Nurul Hayati Binti Muda (Administration Assistant Clark) N17	Ext : 6206
	Norfahani Binti Abd Rahim (Administration Assistant Clark) N17	Ext : 6207
	Firdaus Bin Iderus (General Administration Assistant Officer) N1	Ext: 1049

8.2 EXAMINATION UNIT

Function	Contact Personnel	Contact No
Every Polytechnic under the Ministry of Educationis responsible for providing guidance on learning, assessment, control and conduct of the examination. Conferment of Certificate and Diploma to each student is subject to approval and confirmation of Board of Examination and Certificate / Diploma Polytechnic after students have passed all examinations and meet all the requirements of the course. Polytechnic Examination Unit is the unit where responsible for planning, managing and implementing all activities related to student assessment based on the guidelines and evaluationset.	**Azman Bin Mat Hussin** DH44 (Head Of Unit) Examinations Officer	Ext : 6388
	Izan Shuhada Binti Idris DH41 Examinations Officer (Records &Certification)	Ext : 1030
	Mohd Khairudin Bin Saidina Omar DH42 Examinations Officer (Management & Assessment)	Ext : 1037
	Norman Bin Ahmad N11 Assistant Operation	Ext : 6386
	Nafisah Binti Abdullah DH44 Head Coordinator JKE	Ext : 1031
	Hashimi Bin Lazim DH44 Head Coordinator JKM	Ext : 1036
	Nur Hidayah Binti Hassan DH44 Head Coordinator JPH	Ext : 1034
	Nurul Izzati Binti Mohd Noh DH44 Head Coordinator JP	Ext : 1035
	Norul Huda Binti Abdul Razak DH44 Head Coordinator JTMK	Ext : 1011
	Ahmad Fakhruddin Bin Kamaruddin DH41 Head Coordinator JRKV	Ext : 1031
	Nazera Binti Dan DH44 Head Coordinator JMSK	Ext : 1032
	Siti Nurfirdaus Bt Mohd Nasir DH41 Head Coordinator JPA	Ext : 1657

8.3 SPORTS UNIT

Function	Contact Personnel	Contact No
The involvement in co-curriculum creates opportunities for students to develop their talents and interests. To achieve these require commitment, innovation and creativity from both educators and students. It also includes outdoor activities such as sports, uniform units, clubs and societies. The activities should consist of elements that support the physical, emotional, spiritual and intellectual aspects in line with the National Philosophy of Education. The Sports Unit is responsible for: a. managing sports activities inside and outside PTSS compound b. planning and ensuring sports activities are carried out accordingly c. monitoring and keeping record of PTSS athletes d. managing and maintaining the sports facilities e. developing individuality in spiritual, physical and intellectual	**En. Bustamam Bin Bonari** DH48 Head of Department	Ext : 1988
	En. Johanis Bin Mohd Jamil DH44 Head of Cocurriculum	Ext : 1989
	Tn. Syed Azmir Bin Syed Ahmad DH44 Head of Sports Unit	Ext : 6272
	En. Ahmad Zamri Bin Abdul Wahid DH44 Officer of Cultural and Heritage Unit	Ext : 6275 / 1988
	En. Nik Mohd Sofri Bin Nik Abdul Hamid DH41 Cocurriculum - Clubs and Societies	Ext : 6340
	En. Shamsul Anuar Bin Abd Aziz DH44 Cocurriculum – Sports	Ext : 6344
	En. Mohd Zubir Bin Yahaya DH44 Cocurriculum – Uniforms	Ext : 6344
	En. Amirul Affendi Bin Adnan S41 Youths and Sports Officer	
	Pn. Nurul Asmad Bt. Che Harun S41 Youths and Sports Officer	
	En. Saiful Bin Ishak N11 General Office Assistant	

8.4 LIBRARY UNIT

Function	Contact Personnel	Contact No
The library provides quality and up-to-date information to everyone in terms of managing and providing access to information resources. Taking the role as a centre of knowledge, the library acts as a catalyst and assists in the teaching and learning and research in the process of producing creative and innovative semi professional. The Library Unit is also an instrument in inculcating the reading culture among PTSS and the local communities through an ongoing reading campaign. Among the many objectives of the library unit are: a. to acquire relevant and current information for reference b. to manage a collection of information using a standard system for easy access. c. to provide quality information service and cultivate interest in reading d. to support the organization's objectives in teaching, learning and research.	**Ismail Bin Harun** S44 Librarian	Ext : 6377
	Shahrifatulzzainiyah Bt AbdRahman S32 Assistant Librarian	Ext : 6378
	Nur Salizah Ng Abdullah S19 Library Assistant	Ext : 1672
	Nur Dalila Bt Azahari S19 Library Assistant	Ext : 1672
	Nor Hafiza Bt Zakaria S19 Library Assistant	Ext : 1672
	Zafilah Bt Ismail S19 Library Assistant	Ext : 1672
	Mohd. Rizal Bin Md. Zahid C19 Library Assistant	Ext : 1672
	Circulation Counter	Ext : 1673

8.5 LIAISON & INDUSTRIAL TRAINING UNIT

Function	Contact Personnel	Contact No
The Liaison & Industrial Training Unit (UPLI) is responsible for managing students' industrial training affairs. Students will be assigned to a particular organization during their training period based on their respective fields of study. The placement process is finalised before training commences. Students are constantly advised to maintain a high level of discipline. They should abide by the rules and regulations of both the polytechnic and organization. Organizations are advised to consult the polytechnic immediately if there are any disciplinary problems. The objectives of this programme can be summarized as follows: a. to foster a positive character and traits among students b. to develop better communication skills c. to practise good work ethics and conform to rules and regulations d. to expose students to the working environment e. to produce daily report on the training	**Mazrul Hisyam Bin Mat Ali** DH44 (Head of Unit) Liaison & Industrial Training Officer **Mohd Zulfabli Bin Hasan** DH41 Liaison & Industrial Training Officer (Training) **Noor Farhani Binti Mohd Alui** DH41 Liaison & Industrial Training Officer (Liaison) **Marsyita Binti Kassim** N19 Assistant Administrator **Norazlina Binti Abd. Muttoleb** DH44 Head Coordinator JKE **Mohd Fadhli Bin Ahmad** DH44 Head Coordinator JKM **Saiful Bin Mohamed Shuib** DH41 Head Coordinator JPH **Mohd Fardelie Bin Ramli** DH29 Head Coordinator KHK **Mohd Shamsul Bin Ismail** DH44 Head Coordinator JP **Siti Nurdiana Binti Abu Bakar** DH41 Head Coordinator JTMK **Juniza Binti Zamri** DH44 Head Coordinator JRKV	Ext : 6244 Ext :1021 Ext :1020 Ext : 6243 Ext : 1808 Ext : 6284 Ext : 6261 Ext : 6264 Ext : 6521 Ext : 6295 Ext : 6365

8.6 RESIDENTIAL COLLEGE

The uniquely modern PTSS hostel can easily accommodate a total of 3600 students. Students in semester one have the opportunity to enjoy the facilities provided on campus in addition to a comfortable and conducive living environment. Students are placed in the hostel to instill good learning habit, moral values, integration and friendship among students of different race, religion and culture.

<table>
<tr><th colspan="2">Contact Personnel</th></tr>
<tr><td>Principle of Residential College
Pn Nazimah Binti Saad
Tel : 04-9886200, Ext :6355</td><td>Supervisor of Residential College
Pn Saodah Binti Abdullah
Tel : 04-9886200, Ext : 6354</td></tr>
<tr><th colspan="2">Medical Assistant</th></tr>
<tr><td colspan="2">Muhammad Fauzee Bin Asuar</td></tr>
<tr><th colspan="2">Wardens</th></tr>
<tr><td colspan="2">Mohd Zubir Bin Yahaya — Chief Warden
Johanis Bin Mohd Jamil — Deputy Chief Warden
Nur Adlina Binti Hj. Mohd — Deputy Chief Warden</td></tr>
<tr><td>En. Abu Hanifah Bin Mohd Said
En Azran Bin Abdul Razak
En Borhannudin Bin Ya
En Fazly Shahril Bin Norizan
En King Diaw a/l Eh Sut
En Mohd Awaludin Bin Mohamed Bashir
En Mohd Fadzil Bin Allias
En Mohd Fardelie Bin Ramli
En Mohd Firdaus Bin Che Radzi
En Mohd Nurul Akmal Bin Mat Ariff
En Mohd Safirol Bin Md Yusof
En Mohd Shabri Bin Hassan
En Norazrizal Bin Norazmi
En Shamsul Anuar Bin Abd. Aziz
En. Mohd Azha Bin Ismail
En. Mohd Kamarul Ariffin Bin Mohamad Azmi
En. Mohd Ridzuan Bin Abdul Rahman
En. Mohd Rizal Bin Hussain
En. Saiful Bin Mohamed Shuib
En. Zulkifli Bin Sulaiman</td><td>Cik Mime Azrina Binti Jaafar
Cik Zainab Binti Abdullah
Pn. Balqis Binti Ahmad Shahar
Pn. Ku Shazwani Binti Ku Azizan
Pn. Mahirah Binti Rafie
Pn. Nor Arinah Binti Mohamed Zemudin
Pn. Nurishah Binti Wahab@Abdul Wahab
Pn. Rafidah Binti Jaafar
Pn. Rosmini Binti Abdul Rahman
Pn. Rozalita Binti Saupi
Pn. Salasiah Binti Noordin
Pn. Siti Aishah Binti Kadir</td></tr>
</table>

8.7 PSYCHOLOGY AND CAREER UNIT

Function	Contact Personnel	Contact No
The Psychology and Career Unit works on implementing the Human Capital Development program based on psychological approaches which include aspects of development, prevention, rehabilitation and intervention. In addition, this unit also provides counseling and professional guidance to ensure semi professional work force is well balanced mentally and physically. The Psychology and Career unit is responsible for: a. raising self awareness and surroundings b. highlighting ones' potential c. developing multi skills d. promoting studies opportunities e. promoting career opportunities	**Wan Kamariah Binti Wan Mat** S41 (Head of Unit) Psychology and Career Officer **Norzila Binti Mhd Noor** S41 Psychology and Career Officer **Raja Rabiatum Adawiyah Bt Raja Mamat** S41 Psychology and Career Officer	Ext : 6208 Ext : 6205 Ext : 1100

8.8 UNIT FOR INSTRUCTIONAL DEVELOPMENT AND MULTIMEDIA

Function	Contact Personnel	Contact No
The Unit for Instructional Development and Multimedia (UIDM) is one of the support unit for Academic and Administration in PTSS. The main functions are: a. Advising and guiding in Instructional Development for the purpose of Learning and Teaching. b. Provide sufficient skill and Audio Visual equipment for any activities (on campus/outside of campus) based on frequent application. c. Supervise in-term of skill and facilities/equipment for any activities by students/lecturers. d. UIDM as Audio Visual Committee for any major events on campus such as Convocation, Students Registration Day, major celebrations and assembly. e. Documentation Record any events on/off campus through video and photo for the purpose of archives. f. As committee for Design & Printing for most of the major events on campus.	**Mohamad Naaim Bin Md Zain** DH41 (Head of Unit) Multimedia & Resource Officer **Mohammad Shahiran Bin Salim** DH41 Multimedia & Resource Officer **Ahmad Norhaizam Bin Ahmad Rosli** B19 Photographer **Muhamad Fadzwan Bin Amir Roslan** B19 Designer **Syed Shafirul Bin Wan Idrus** B19 Designer **Shukri Bin Abdullah** JA29 Assistant Engineer **Oszamry Bin Othman@Ismail** N11 Assistant Operation	Ext : 6380 Ext : 6380 Ext : 1693 Ext : 1690 Ext : 1690 Ext : 1693 Ext : 1693

8.9 INFORMATION TECHNOLOGY & COMMUNICATION UNIT

The Information & Communication Technology Unit (UTMK) is one of the support unit for Academic and Administration in PTSS. The main function of UTMK is: a. Monitor and maintain ICT equipment and campus local network. b. Coordinate the acquisition of hardware, software and computer networks to meet the set standards and avoid duplication in procurement. c. Supervise the movement of ICT equipment. d. Acting as the system administrator for application system such as SPMP, HRMIS and etc.	**Saifulazmi Bin Tayib** F44 (Head of Unit) Information Technology Officer **Nor Hafizah Binti Khadzir** F41 Information Technology Officer **Suria Binti Shaari** F41 Information Technology Officer **Safariza Binti Md Fazil** F29 Assistant Information Technology Officer **Marina Binti Meor Lizi** F29 Assistant Information Technology Officer **Sasnidar Binti Yusri** F29 Assistant Information Technology Officer **Mohamad Razali Bin Mohamad Ismail** FT22 Assistant Information Technology Officer **Muhamad Kamalhamdy Bin Kamaludin** FT29 Assistant Information Technology Officer **Mohamad Khairul Fazmi Bin Jamaludin** FT19 Assistant Information Technology Officer **Nurul Fara Binti Noor Azman Raman** FT19 Assistant Information Technology Officer	Ext: 6345 Ext: 6346 Ext: 6349 Ext: 6347 Ext: 1502 Ext: 1501 Ext: 1504 Ext: 1507 Ext: 1503 Ext: 1508

Function	Contact Personnel	Contact No
	Ridzuan Bin Yaakob FT29 Assistant Information Technology Officer	Ext: 1508
	Zuraidah Binti Ghazali FT29 Assistant Information Technology Officer	Ext: 6348
	Mohd Rifaiz bin Mohd Razali FT19 Computer Technician	Ext: 6348

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