ABOUT UNIVERSITI POLY-TECH MALAYSIA

Universiti Poly-Tech Malaysia, also known as UPTM, is an institution of higher learning has built itself upon years of continuous improvements and change leading to a wealth of experience and wisdom.

At UPTM, the focus is on providing a comprehensive education that goes beyond theoretical knowledge to include the development of essential human attributes, attitude, and aptitude. The university's committed educators work tirelessly to ensure that every student receives personalised attention and support that enables them to realise their full potential.

UPTM's curriculum is anchored in contemporary technologies and business education, offering students a wide range of innovative courses that challenge and stimulate their skills and expertise essential for them to thrive in the fast-paced world of business. It is important to note that Poly-Tech, in this context, refers to the incorporation of cutting-edge technologies into business education, and should not be confused with technical or vocational education.

On the overall, the university’s emphasis is on producing graduates who are not only highly skilled and knowledgeable, but also possess the essential qualities of professionalism, ethical responsibility, and social awareness. With its unwavering commitment to academic excellence, UPTM stands out as an institution of higher learning that prepares students for successful careers and meaningful lives.

VISION

To become a university of choice in nurturing professionals impacting the nation.

MISSION

- Develop ethical, holistic and balanced professional
- To utilize knowledge and innovative contemporary technologies to contribute towards the development of the nation.

MOTTO

Trusted ● Caring ● Resilient ● Respected

OBJECTIVES

- To provide opportunities to pursue professionally recognised programmes.
- To provide vibrant and invitational programmes relevant to current market needs and customers' demands.
- To design programmes that inculcate graduates' synergetic talents.
- To ensure that graduates are adequately prepared for the local and global workforce.
- To establish human resource development programmes as tool for assimilating the value of society.
- To establish a distinctive and accountable centre of excellence in managing research, consultation and services.

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MESSAGE FROM THE PRESIDENT

I am honored to welcome you to the University Poly-Tech Malaysia (UPTM), an esteemed academic institution based at the heart of the capital city of Malaysia. As the President of UPTM, I am excited to invite you to join our community of scholars, where you will have the opportunity to develop into ethical, holistic, and balanced professionals who can impact the nation positively.

UPTM has undergone a remarkable transformation from a college to a university college and now a full-fledged university. This growth is a testament of our commitment to academic excellence and our dedication in providing a conducive learning environment. Our vision is to become a university of choice in nurturing professionals who can make a difference in society. We aim to achieve this by providing our students with the necessary skills, knowledge, and values to excel in their chosen fields.

At UPTM, our mission is to develop ethical, holistic, and balanced professionals who can contribute to the development of the nation using knowledge and innovative contemporary technologies. We strive to ensure that our graduates possess the necessary skills to thrive in a competitive global environment. Our curriculum is designed to challenge our students while also nurturing their intellectual curiosity.

Our university's core values are based on trust, care, resilience, and respect, which guide us in all our interactions with students, faculty, and staff. We pride ourselves on our inclusivity, diversity, and the community of scholars that we have built over the years. We are confident that you will find a home at UPTM, where you can grow and learn alongside other ambitious students.

I welcome you to explore our website and learn more about UPTM. Our dedicated faculty and staff are always to answer any questions you may have about our programs, admissions process, or campus life. We hope to hear from you soon and look forward to welcoming you to our university.

Sincerely,

President
University Poly-Tech Malaysia

INTRODUCTION

The Diploma in Computer Science is a homegrown program specifically developed to meet the need for knowledge and skilled workers who are able to respond to rapidly changing technological and commercial environment as well as the continuing demand from industry for graduates in information communication technology (ICT). This diploma is also accredited by the Malaysian Qualifications Agency (MQA) in 2010.

At the end of this program, the student will be equipped with firm understanding to be in the competitive nature of computing industry. The student will be able to develop, design, produce and maintain computer applications. The objective based education introduced in this program allows the student to be inquisitive and independent when entering real world environment with the ability to solve applied real computing problem.

This programme is suitable for those who are interested in working with the government and private sector as System Analyst, Computer Programmer, Software Engineer, Database or Network Administrator, Project or Technical Manager, Computer Support Specialist, Computer and Information System Manager and Computer Security Specialist.

Graduates can also further their study at degree level in local higher institutions in specific fields such as software engineering, business computing, information security and cybersecurity.

PROGRAMME INFORMATION

1.	Programme Title	:	Diploma in Computer Science
2.	Programme Code	:	CC101
3.	Duration	:	2 years 4 months
4.	Total Credit Hours	:	90
5.	Medium of Instruction	:	English / B. Melayu (MPU Courses)
6.	Entry Requirement	:	i. A pass Sijil Pelajaran Malaysia (SPM) or equivalent with at least THREE (3) credits, inclusive of Mathematics; OR ii. A pass SKM Level 3 in related field; And Pass SPM with at least a credit in Mathematics at SPM level; OR iii. A pass equivalent Community Certificate OR iv. Level 3 MQF in relevant field; AND Pass SPM with at least a credit in Mathematics at SPM level; OR v. A pass other equivalent certificates (Level 3, MQF) and credit in Mathematics at SPM level; OR vi. STPM or with at least a grade C (NGMP 2.0) in 1 subject and credit in Mathematics at SPM level; OR vii. STAM (maqbaul rank) AND credit in Mathematics at SPM level; AND viii. O-level with at least Gred C in 3 subjects inclusive Mathematics

Notes: Candidates with no credit in Mathematics at SPM level can be admitted if the certificate program contains Mathematics equivalent to Mathematics at the SPM level;

Notes: Candidates with credit in any computing related subject at SPM level or its equivalent may be given preferential consideration.

7. Programme Educational Objectives :

The programme educational objectives are to produce graduate teachers who are:

PEO1 : knowledgeable and technically competent in line with industry requirement.

PEO2 : effective in communication, perform well as a team player and demonstrate good leadership qualities in an organisation.

PEO3 : capable to solve problems creatively, innovatively, and ethically using numerical & technical skills through sustainable approaches.

PEO4 : able to demonstrate entrepreneurial skills and recognise the need of lifelong learning, as well using a broad range of ICT applications for successful career advancement.

8. Programme Outcomes :

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

PLO1 : demonstrate systematic comprehension of theoretical knowledge and skills to undertake varied tasks within the computing field

PLO2 : demonstrate analytical and critical thinking skills in decision-making and problem-solving within the computing field

PLO3 : use a range of software development tools and techniques for problem-solving in managing computer-based systems

PLO4 : interact effectively using appropriate interpersonal skills with peers, experts and non-experts

PLO5 : communicate clearly, both orally and in writing, ideas, information, problems & solutions with supervisors and/or peers

PLO6 : use a range of digital applications to support as well to seek and process data related to work/study

PLO7 : apply numeracy skills to interpret data using suitable methods and techniques

PLO8 : lead and manage teams to achieve identified goals

PLO9 : identify self-improvement initiatives and possibilities for further education for career and professional advancement

PLO10 : explore and engage in activities relating to entrepreneurship

PLO11 : demonstrate professional, social and ethical considerations in computing practice.

9. Awarding Body : Universiti Poly-Tech Malaysia

10. Programme Standards : The programme has been developed based on the requirement of Malaysian Qualification Agency (MQA). MQA is a statutory body in Malaysia set up under the Malaysian Qualifi cations Act 2007 to accredit academic programs provided by educational institutions providing post-secondary
or higher education and facilitate the accred itation and articulation of qualifications. This curriculum for this programme has been designed based on the computing Programme Standards.

PROGRAMME STRUCTURE

DIPLOMA IN COMPUTER SCIENCE (CC101)

Year 1 Semester 1:

COURSE CODE	COURSE NAME	STATUS	CREDIT	SLT	PRE-REQ	ASSESSMENT	
						Course Work	Final Assessment
ARC1033	Computer Organization and Architecture	Core	3		None	70%	30%
ARC1043	Operating Systems	Core	3		None	60%	40%
EGN2103	General English Proficiency	Core	3		None	70%	30%
ITC2143	Database Concepts	Core	3		None	60%	40%
MAT1063	Computing Mathematics	Core	3		None	60%	40%
SWC1323	Fundamental of Programming	Core	3		None	50%	50%
	Total		**18**				

Year 1 Semester 2:

COURSE CODE	COURSE NAME	STATUS	CREDIT	SLT	PRE-REQ	ASSESSMENT	
						Course Work	Final Assessment
MAT2024	Calculus	Core	4		None	60%	40%
MMC1123	Human Computer Interaction	Concentration	3		None	60%	40%
MPU2412	Khidmat Masyarakat 1	Compulsory	2		None	90%	10%
NWC2063	Data Communication Concept	Core	3		ARC1033	60%	40%
STA2093	Statistics	Core	3		None	60%	40%

SWC2333	Object Oriented Programming	Core	3		SWC1323	60%	40%
	Total		**18**				

Year 1 Semester 3

COURSE CODE	COURSE NAME	STATUS	CREDIT	SLT	PRE-REQ	ASSESSMENT	
						Course Work	Final Assessment
SWC3344	Data Structures	Concentration	4		SWC2333	60%	40%
UCS2072	Study Skills	Core	2		None	70%	30%
UCS2083	Entrepreneurship with Digital Applications	Compulsory	3		None	60%	40%
	Total		**9**				

Year 2 Semester 1:

COURSE CODE	COURSE NAME	STATUS	CREDIT	SLT	PRE-REQ	ASSESSMENT	
						Course Work	Final Assessment
SWC3393	System Analysis and Design	Concentration	3		ITC2143	60%	40%
SWC2383	Express Application Development	Elective (Choose One)	3		None	50%	50%
SWC2373	Emerging Technologies					60%	40%
SWC2353	Web Design	Concentration	3		Co-requisite SWC2363	60%	40%
NWC3053	Computer Network Security	Concentration	3		None	60%	40%
SWC2363	Web Application Development	Concentration	3		Co-requisite SWC2353	60%	40%

NWC2043	Introduction to Networks	Elective (Choose One)			None	70%	30%
NWC1023	Networking Essentials		3			70%	30%
	Total		**18**				

Year 2 Semester 2:

COURSE CODE	COURSE NAME	STATUS	CREDIT	SLT	PRE-REQ	ASSESSMENT	
						Course Work	Final Assessment
ITC1083	Business Information Management Strategy	Elective (Choose One)	3		None	60%	40%
ITC2173	Enterprise Information Systems					50%	50%
ITC2193	Information Technology Essentials	Elective (Choose One)	3		None	60%	40%
ARC3043	Linux OS					60%	40%
SWC3403	Introduction to Mobile Application Development	Concentration	3		None	70%	30%
FYP3024	Computing Project	Concentration	4		Final Semester Standing	20%	80%
	Total		**13**				

Year 2 Semester 3:

COURSE CODE	COURSE NAME	STATUS	CREDIT	SLT	PRE-REQ	ASSESSMENT	
						Course Work	Final Assessment
MPU2242	Leadership and Interpersonal Skills 1	Compulsory (Choose One)	2		None	70%	30%
MPU2212	Bahasa Kebangsaan A					70%	30%
MPU2162	Pengajian Malaysia 2	Compulsory (Choose One)	2		None		
MPU2132	Bahasa Melayu Komunikasi 1 (International Student)					60%	40%
MPU2353	Pengajian Islam 2	Compulsory (Choose One)	3		None	70%	30%
MPU2323	Etika dan Moral 2					70%	30%
	Total		**7**				

Year 3 Semester 1:

COURSE CODE	COURSE NAME	STATUS	CREDIT	SLT	PRE-REQ	ASSESSMENT	
						Course Work	Final Assessment
INT3027	Industrial Training	Industrial Training	7		Pass All Courses including Final Year Project	0	100%
	Total		**7**				

COURSE INFORMATION

COMPUTER ORGANIZATION AND ARCHITECTURE (ARC1033)
Prerequisite : None

This course introduces aspects of both computer architecture and organisation. The course covers basic computer architecture, numbering system, logic circuit design, processing unit, computer memory system, input and output, and parallel processing.

OPERATING SYSTEMS (ARC1043)
Prerequisite : None

This module introduces the concepts of design and implementation of computer systems. It explains what operating systems are and what they do. It also introduces the issues, techniques of resources management & protection, and shows how operating system manages processor, input & output, memory and storage to be used by the process in an efficient manner.

GENERAL ENGLISH PROFICIENCY (EGN2103)
Prerequisite : None

This module introduces the major aspects of learning English skills; speaking, listening, reading and writing with major emphasis on grammar on basic level. The activities are conducted in a manner that enables the incorporation of all skills. It is designed to expose the standard of English language usage for everyday use as well as to hone appropriate conversation/interaction skills which allow effective group discussion.

DATABASE CONCEPTS (ITC2143)
Prerequisite : None

This course introduces fundamental knowledge on how database concepts are used commercially. It covers an introductory study of database theory, design and implementation.

COMPUTING MATHEMATICS (MAT1063)
Prerequisite : None

This course introduces basic discrete mathematics required in the contemporary aspects of computing. The topics covered are set theory, fundamental principles of counting, relations and functions, digraph, logic, mathematical induction and recursion.

FUNDAMENTAL OF PROGRAMMING (SWC1323)
Prerequisite : None

This course introduces the fundamentals of writing structured computer programs, analysing simple computer problems, writing the solution in the form of algorithm, and finally transferring the algorithm into executable program codes. It uses C++ as the basic programming language in producing a simple computer program.

CALCULUS (MAT2024)
Prerequisite : None

The course introduces concepts of algebra and calculus to develop logical and analytical thinking. The topics covered are Matrices, Indices and Logarithms, Limits and Continuity, Differentiation and Integration.

HUMAN COMPUTER INTERACTION (MMC1123)
Prerequisite : None

This course introduces the basic building blocks of Human Computer Interaction, a discipline involved with the way people interact with computers and their applications. The content of the course includes the study of human psychology, the technology and the design technique, method and evaluation. Topics include a review of HCI and history, input devices and interaction techniques.

DATA COMMUNICATION CONCEPT (NWC2063)
Prerequisite : ARC1033

This course introduces the fundamental concepts of data communication components, the hardware and computer networking. The course covers the topics of Data Communication & Network: data communication principles, signal, transmission media, protocol, internetworking and IEEE 802 standards, data encoding & efficiency, Local Area Network and the OSI layers. The course also covers latest technologies available in data communication, the mechanism underlying telecommunications and networking.

STATISTICS (STA2093)
Prerequisite : None

This course introduces the basic understanding of statistical procedures, techniques and applications as used in computer science environment.

OBJECT ORIENTED PROGRAMMING (SWC2333)
Prerequisite : SWC1323

This course introduces the concepts of Object-Oriented Programming (OOP) and problem solving skills. It emphasizes understanding of Oject-Oriented program design and implementation, features of object-orientation such as inheritance, polymorphism, abstract classes, Graphical User Interface (GUI) and file input/output.

DATA STRUCTURES (SWC3344)
Prerequisite : SWC2333

This course is a continuation of Object Oriented Programming course. It emphasizes on manipulating data to develop effective and efficient programs by applying the fundamentals of data structures concept such as lists, stacks, queues and trees for primitive and abstract data types. It also covers recursion techniques and searching and sorting algorithms.

STUDY SKILLS (UCS2072)
Prerequisite : None

This course emphasises on effective studying and learning strategies. This includes organizational skills, time management, prioritising, analysing, problem solving and self-discipline required to remain motivated in learning. These skills relate closely to the type of skills employers look for.

ENTREPRENUERSHIP WITH DIGITAL APPLICATIONS (UCS2083)
Prerequisite : None

This course introduces theoretical and practical knowledge of digital entrepreneurship in selling real products and services through digital applications. It provides basic knowledge and process on how to prepare a business plan incorporating digital application.

SYSTEM ANALYSIS AND DESIGN (SWC3393)
Prerequisite : ITC2143

The course introduces information system concepts, system analysis, design methodologies and technologies used during the development of information systems. It covers system analysis and design according to an analysis of system application and construction of the system model based on relevant methodologies using any modelling tool.

EXPRESS APPLICATION DEVELOPMENT (SWC2383)
Prerequisite : None

This course introduces the techniques and tools required to develop database driven web applications solution for a business or organizations. It covers the techniques to design, develop and deploy responsive web applications using low-code development platform. The tool allows for rapid development and deploy compelling apps that solve real problems and provide immediate value.

EMERGING TECHNOLOGIES (SWC2373)
Prerequisite : None

This course introduces internet technologies that utilizes Cisco's DevNet to interact with equipment in producing interactive conferencing applications. It explores the formulation of new concepts and skills through API testing tools.

WEB DESIGN (SWC2353)
Co-requisite : SWC2363

This course introduces basic theories and practical programming skills that are relevant to web design development. It covers markup languages, Cascading Style Sheet and Client-side scripting languages to develop a simple website.

COMPUTER NETWORK SECURITY (NWC3053)
Prerequisite : None

In this course, students will learn the basic concepts in computer and network security, types of threat and necessary control measures to overcome these threats. The subject covers fundamental about computer security technologies & principles, software security, management issues and network security. The subject also highlights research element on the latest technologies and related network security issues.

WEB APPLICATION DEVELOPMENT (SWC2363)
Co-requisite : SWC2353

This course is to be taken concurrently with Web Design (SWC2353). It introduces the concepts and skills necessary to design and develop web-based applications using suitable software tools. It covers the development of a working database application using an appropriate relational database management system and server-side scripting language to serve the information needs of an enterprise.

INTRODUCTION TO NETWORKS (NWC2043)
Prerequisite : None

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum.

NETWORKING ESSENTIALS (NWC1023)
Prerequisite : None

This course introduces the fundamentals of computer network architecture, structure, functions, components and Internet models. The course also introduces the basic concepts of connecting network components and IP addressing in building a simple network infrastructure.

BUSINESS INFORMATION MANAGEMENT STRATEGY (ITC1083)
Prerequisite : None

The course covers three main areas which are strategic planning, role of IS/IT in business and managing change. It covers role of business planning process and strategic planning analysis tools which includes PESTLE, SWOT and Porter's Frameworks. Additionally, it will cover management information systems model and business application portfolio.

ENTERPRISE INFORMATION SYSTEMS (ITC2173)
Prerequisite : None

This course introduces the fundamental concepts and theories of enterprise information systems. It covers conceptual architectures, frameworks and methodologies related to the design and implementation of enterprise information systems development. It explores the various types of technology of enterprise information systems.

INFORMATION TECHNOLOGY ESSENTIALS (ITC2193)
Prerequisite : None

This course introduces the fundamentals of computer hardware and software. It provides practical approach to assembling, upgrading and troubleshooting computers.

LINUX OS (ARC3043)
Prerequisite : None

The course introduces the installation, configuration and management of Linux operating system in both servers and personal computers.

INTRODUCTION TO MOBILE APPLICATION DEVELOPMENT (SWC3043)
Prerequisite : None

This course introduces concepts and aspects in mobile application development on several platforms such as android and iOS. It covers user interface design, data storage, multimedia support, multi-threading, debugging, testing, application distributions and publishing.

COMPUTING PROJECT (FYP3024)
Prerequisite : Final Semester Standing

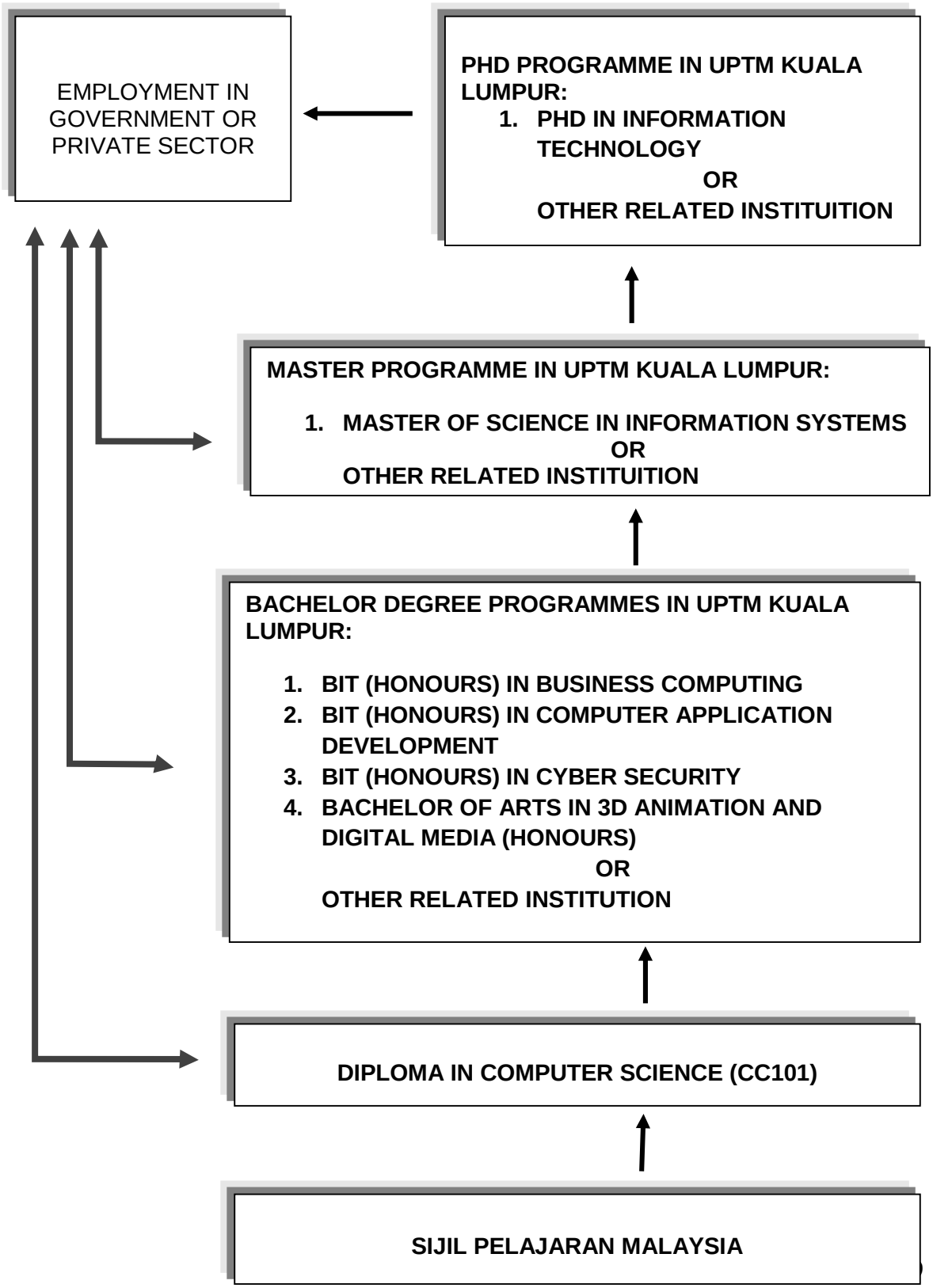
This course requires the students to develop a project either applications or systems by implementing knowledge and skills gathered during direct or indirect learning in their previous courses. It is an integration of the various computer science course modules. The project is expected to be substantial practical problem-solving exercise or a research study which require students to demonstrate their skill in organization, time management, investigation and communication.

INDUSTRIAL TRAINING (INT3027)
Prerequisite : Pass All Courses including Final Year Project

Students will be placed in the industry (either the government or recognized private sector) for 14 weeks after completing all modules. They will be trained in real life working environment relevant to their field of study focusing on developing professional transferable skills for employability and life-long skills. Apart from this, the training experience will further solidify the on-campus learning process and activities.

STUDY PATH

DIPLOMA IN COMPUTER SCIENCE (CC101)



ACADEMIC PLANNER

ACTIVITY	Long Semester	Short Semester
	Day / Week	Day / Week
Registration (New Students)	Day 1	Day 1
Induction	Day 2	Day 2
Add/Drop Week	Week 4	Week 2
Lectures	Week 1 - 7	Week 1 - 7
Mid-Semester Break	1 Week	
Lectures	Week 8 – 14	
Revision Week	2 Days	2 Days
Final Examination	3 Weeks	1 - 2 Weeks
Semester Break	2 - 3 Weeks	2 - 3 Weeks

Note: Actual academic calendar can be accessed in the UPTM website at www.uptm.edu.my.

- The University reserves the right to make any changes to the academic calendar when necessary. Students are advised to be aware of announcements regarding changes at all times.

ACADEMIC REGULATIONS

- All UPTM students are subjected to the academic rules and regulations as outlined in the Academic Regulations of Universiti Poly-Tech Malaysia (UPTM) (2023 Amendment). A copy of this academic rules and regulations can be accessed in the UPTM website at www.uptm.edu.my.

- All UPTM students pursuing academic programmes in collaboration with professional, local or foreign partner institutions are also subjected to the rules and regulations of the partner institutions. A copy of this handbook can be accessed in the UPTM website at www.uptm.edu.my