

STUDENT'S POCKETBOOK

**DIPLOMA IN INFORMATION
TECHNOLOGY
(DIGITAL TECHNOLOGY)**



**INFORMATION TECHNOLOGY
AND COMMUNICATION
DEPARTMENT**

TABLE OF CONTENTS

Vision	2
Mission	3
Preface From The Head Of Department.....	4
About Us.....	5
Program Offered With Tracking	6
Organization Chart	7
List Of Supporting Departments And Units In PKS	8
Diploma In Information Technology	15
Introduction.....	15
Synopsis	16
Job Prospect	17
Entry Requirement	18
Program Structure (Track Networking System).....	20
Program Structure (Software & Application Development).....	26
Editorial Team	36

VISION

“To be a leader of eminent TVET institutions”

MISSION

“Provide wider access to quality and recognized TVET programs to produce holistic, entrepreneurial, and balanced graduates and empower communities through lifelong learning by taking full advantage of smart partnerships with stakeholders.”

PREFACE FROM THE HEAD OF DEPARTMENT



السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

First of all, well done and congratulations to the students who were selected to be family members of the Information Technology and Communication Department, at Politeknik Kuching Sarawak. It is the intention of us, with the publication of this Student Handbook to help students to plan academically in an orderly manner, used as a source of information and guidance in achieving excellence. Practice high self-discipline and diligence in all aspects of the curriculum and co-curriculum or any activities implemented at the polytechnic that can increase your skills as self-preparation in the face of increasingly challenging globalization.

Finally, once again congratulations to all our students. Appreciate and take advantage of all the opportunities and space available to gain knowledge, improve personal skills and highlight their potential. We hoped that all students will continue to success at PKS and in turn become the young generation of heirs of the nation who contribute to the development of our country in the future.

Regards.

Tn. Hj. Sharafi bin Mohamed Yusoff

Head of Department

Information Technology and Communication Department

Politeknik Kuching Sarawak

ABOUT US

Department of Information and Communication Technology (JTMK) Kuching Sarawak Polytechnic is one of the academic departments at Kuching Sarawak Polytechnic Malaysia.

This department was inaugurated by the late En. Dzul kifli bin Ismail, Director of Kuching Sarawak Polytechnic on 8 November 2007.

Currently, JTMK has a total of 37 academic staff lead by the Head of Department **En. Sharafi bin Mohamed Yusoff** assisted by Head of Program Track Networking System **Pn. Norbaizura binti Mokhtar** and Head of Program Track Software and Application Development **Pn. Norfazilah binti Mohamad Pon**.

Diploma in Information Technology (Digital Technology)

Networking System

Software and Application Development

ORGANIZATION CHART



LIST OF SUPPORTING DEPARTMENTS AND UNITS IN PKS

Student Affairs Department

The Student Affairs Department assists the management of Politeknik Kuching Sarawak (PKS) in the process of recruitment, registration, storage and updating of student records as well as monitoring student welfare. There are two main subunits in it, namely the Enrollment & Data and the Welfare & Discipline unit. The role of the Enrollment and Data unit is to help manage admission applications, registration, and update student records. The role of the Welfare and Discipline unit is to help look after the welfare of students such as assisting in financial aid loan applications, obtaining student permits for non -Sarawak students and also monitoring overall discipline. The HEP Department is comprised of two Student Affairs Officers assisted by a Registration Officer, a Scholarship Officer, a Disciplinary Officer, Lecturers from Academic Departments and three General Office Assistants.

Sport, Co-Curriculum, and Cultural Department

This department is responsible for the development of aspects related to sports, co-curriculum and culture among students and staff of Politeknik Kuching Sarawak. Various sports, co-curricular and cultural facilities and activities are provided in both competitive and recreational forms to help enhance natural talents in the field of sports and sports management. Active participation in sports, co-curricular and cultural activities is expected to enhance the physical, social, and mental development of students as well as improve sports management skills among the staff of Politeknik Kuching Sarawak. Through the activities undertaken, it is expected that various experiences such as ethics while inside or outside the court; obedience to leadership and rules; and have a sportsmanship as well as mental resilience can be cultivated as part of the values of human development and self-resilience.

Examination Unit

This unit is responsible for carrying out all examination matters and activities as well as preparing Certificates for graduates.

Industrial Communications and Training Unit

This unit is responsible for carrying out all matters and activities related to industrial training. The unit is headed by a Head of Unit, two officers, an administrative assistant and assisted by the industrial training coordinators of the academic department. It is responsible for the process of planning, applying, locating, supervising, and evaluating the industrial training of SME students. UPLI always strives to provide effective and efficient services in implementing industrial training for students in one semester.

Training and Advanced Education Unit

This unit is responsible for planning and providing training for academic and non - academic staff of Politeknik Kuching Sarawak, in order to ensure the development of staff excellence can be enhanced more effectively. The excellence and KPIs of the ULPL are to achieve the requirements of Service Circular No. 6 of 2005 regarding the Public Sector Human Resource Training Policy which is to ensure that members at all levels attend courses at least seven days a year and achieve the target of following training/courses for at least 10 days a year based on the letter of the Director General of the Department of Polytechnic Studies, Ministry of Higher Education [KPT/JPP/BKP/04/01/002 Vol. 2 (5) dated 10 February 2011]

Library

Libraries play a very important role in helping institutions to manage and ensure that the information obtained can benefit SMEs. The SME Library operates in an air-conditioner two-storey building equipped with reading space for books, newspapers, magazines, journals, etc. as well as adequate study space. Apart from providing reference materials, book lending services, reader reference services and information retrieval advisory services are also provided. Efforts are being intensified to add to the collection of existing materials, as well as ready to further develop services with the cooperation of various parties including the National Library of Malaysia and several other libraries throughout the country. The SME Library was established simultaneously with the establishment of Kuching Sarawak Polytechnic in 1987. In the early stages of its establishment, a temporary office was opened in a shophouse building in Simpang Tiga, Kuching. Two years later, SMEs have moved to a new building site at KM22 Jalan Kuching-Lundu at the foot of Mount Serapi and adjacent to Taman Negara Kubah. The Sarawak Ministry of Industrial Development in collaboration with the Ministry of Education Malaysia has selected Lot 88 Matang Land District as the permanent campus for SMEs with an area of 112 acres. At the beginning of the establishment, space for the library has not been created yet but the book purchase process has been carried out. The library only has its own building when moving to a new SME campus. At that time, the number of books only reached two thousand, which included a collection of books on courses offered at SMEs. As for library management, the main task at that time was to process books such as cataloging. The staff who managed the Library Unit were lecturers where there was no permanent library officer at that time until in 1990 a library officer had started serving. Library Officers are assisted by general junior assistants where they work at the Reference and Loan Service Counter. At that time, the library was open on Monday to Friday from 2 to 4 pm, on Saturday from 8 am to 12.45 pm while on Sundays and public holidays the library was closed. On 11 April 2007 the handover of the new building site was handed over to the library management. The construction cost of this building amounted to 3.5 billion and the Library Unit was fully relocated on 6 December 2010.

Psychology Management Unit

UPPsi functions is to provide a service to students, staff of Kuching Sarawak Polytechnic and the general public. The services provided are in line with the growing counseling function through increased activities of departments as well as public and private industries. Counseling programs and student development activities implemented are focused and in line with individual, academic and career development. In the context of the development of current activities, UPP provides guidance and counseling services to students to increase knowledge and awareness of personal potential, academics, attitude planning, learning situations, career information and job suitability. Through the guidance and counseling services provided, UPP PKS plays a role in facilitating the learning process of students as well as helping to transform students into human capital with extensive knowledge and balanced in terms of physical, emotional, spiritual, and intellectual.

Development and Maintenance Unit

This unit is a technical unit responsible for maintaining and restoring the infrastructure facilities provided effectively and efficiently. It plays an important role in planning development activities and upgrading facilities to ensure that the services provided are of high quality and effective for the comfort of users whether for the learning and teaching process or daily activities.

Quality Assurance Unit

The Quality Assurance Unit functions as the unit responsible for implementing the Quality Management System at the Politeknik Kuching Sarawak. The Quality Assurance Unit has led 5 units under it, namely Quality Management (ISO), Accreditation, PolyRate, PolyPmo and War Room. This unit was established to ensure that the Quality Management System can be formed and achieve objectives based on the Quality Policy and Quality Objectives set.

Hostel Management Unit

Kampus Siswa (Kamsis) is now able to accommodate a total of 2258 students at a time. This hostel can accommodate a total of 1058 male students with 6 hostel blocks and a total of 1200 female students with 2 hostel blocks. The importance of this hostel is

- Hostel is a safe, peaceful, and comfortable living facility with adequate basic facilities. Living in a hostel is not a right or privilege for any student.
- Consideration to occupy a hostel is given to students who appreciate the facilities and work with the management of the hostel in complying with all the rules that have been set as well as meeting the criteria to occupy a hostel.
- To train students to discipline themselves mentally and physically as well as to instill an attitude of independence, tolerance, and the spirit of friendship among students of various races, religions, and cultures.

Entrepreneurship Unit

To realize the development program at the polytechnic level, the Entrepreneurship Unit is committed and in line with efforts to support the Entrepreneurship Development Policy of Institutions of Higher Learning (IPT) by encouraging a more planned and holistic development of entrepreneurship at the polytechnic level. This unit will also move in tandem to achieve the main objectives of this policy, namely:

- to produce quality human capital and have entrepreneurial thinking, attributes, and values.
- producing more graduate entrepreneurs who will act as a catalyst for the transformation of the country's economy into a high -income and innovation -driven economy towards achieving developed country status.

Corporate Industrial Service and Employment Centre Unit

Corporate, Industrial Services and Employability Center (CISEC) is a center whose role is to help increase the marketability of our students. CISEC focuses on skills upgrading programs that add value to prospective graduates. In fact, CISEC also helps to increase the collaboration of our institution with the industry to ensure the quality of our graduates who are born to meet the needs of employers.

Research, Innovation and Commercialization Unit

The Research, Innovation and Commercialization Unit was established in the Polytechnic education system of the Ministry of Higher Education to strengthen the culture of research and innovation among lecturers and Polytechnic staff. This unit plays an important role as a center for the coordination of all research and innovation activities among lecturers and staff. It also acts as a collection and reference center for scholarly writing materials, research and innovation materials as well as commercial materials at the institutional, zonal, national and international levels.

Management Services Unit

The Management Services Unit is the main administrative center for Politeknik Kuching Sarawak. It consists of 4 main functions, namely Financial Management and Accounts, Procurement and Supplies, Services and Staffing and General Administration.

DIPLOMA IN INFORMATION TECHNOLOGY (DIGITAL TECHNOLOGY)

INTRODUCTION

In order to keep abreast with rapid technological advancements and evolving requirements in industries today, Department of Polytechnic & College Community Education (DPCCE) 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 timely knowledge and relevant skills to meet the global challenges and the requirements of the ICT industries. In achieving blended learning, this aim pedagogy that blends classroom instructions with structured simulated real-life working experience is fully utilised to prepare students for the competitive edge in today's workplace.

The growly demand for highly skilled and technically savvy workplace drives the need to produce area for qualified men power in this industry to remain competitive in the world market. To address these issues the Curriculum Division (CD), DPCCE 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 integrates 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), Google analytic, Data science, Machine learning with python, Python and Infosys Campus Connect programme, so as to give the opportunities for the students to sitfor 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 the ICT industries specifically.

SYNOPSIS

This program provides education and training in Computing field with a specific emphasis on Information Technology area. The courses provide opportunities for students to get into a broad range of careers in a variety of ICT sectors. This program also provides the students with transferable skills and multiskilling which enable them to adapt to new technologies. In addition to the technical courses, students are also taught English for Digital Technology, Penghayatan Etika dan Peradaban, Pengajian Islam or Pendidikan Moral and Co-Curriculum, to enhance their competencies in soft skills. As the program emphasizes self-initiated learning and hands-on competencies, graduates of this program should be ready to take the challenges in the world of computing technologies.

JOB PROSPECT

Research by Malaysian Digital Economy Corporation (MDEC) shows a globally. Thus, graduates from this program are equipped with the knowledge, skills, attitude and abilities that can be applied to a broad range of careers in the ICT industrial worlds and businesses. The knowledge and skills that the students acquire from the program will enable them to participate in the job market such as:

1. Computer Application Programmer
2. Internet Programmer
3. Web Programmer
4. Database Programmer
5. System Analysts Assistant
6. Software Developer
7. Database Administrator
8. Software Tester
9. System Support Personnel
10. System Programmer
11. Network Support Personnel
12. Network Administrator
13. IT Supporting Engineer
14. Assistant Network Engineer
15. Technical Helpdesk / Support
16. Assistant Game Programmer
17. Game Designer
18. 3D Animator
19. Storyboard Artist
20. 2D Concept Artist
21. 3D Artist
22. Assistant Security Analysis
23. Assistant Information Security Engineer
24. Assistant Game Developer
25. Assistant Data Analysis
26. Assistant Penetration Tester
27. Assistant Data Scientist
28. Assistant Data Analyst
29. Business Intelligence Analyst
30. Junior Data Visualization
31. Junior Statistician
32. Junior Data Insights and Visualization
33. Web Designer
34. Web Developer

ENTRY REQUIREMENTS

For SPM Leavers (Politeknik Konvensional / MeTrO)

- Malaysian Citizen.
- Sijil Pelajaran Malaysia (SPM) certification holder or equivalent.
- Passed Bahasa Melayu subject.
- Passed English subject.
- Passed Sejarah subject (for 2013 SPM and upward)
- Credits in any THREE (3) of subject below.
 - 1 **Mathematics**
 - 2 **TWO (2)** other subjects with credits that has not been counted in.

Other Relevant Qualification

- Malaysian Citizen.
- Sijil Pelajaran Malaysia (SPM) certification holder.
- Passed Bahasa Melayu subject.
- Passed Sejarah subject (for 2013 SPM and upward).
- Credit in Mathematic for Kolej Komuniti graduates or,
- Credit in any SPM subjects that has not been counted in and passed Mathematic for Kolej Komuniti graduate.
- Graduate with certification level as follows:
 1. Sijil Politeknik Level 3, KKM.
 - Sijil Teknologi Maklumat
 2. Sijil Kolej Komuniti Level 3, KKM
 - Sijil Aplikasi Perisian Komputer
 - Sijil Rangkaian Komputer
 - Sijil Sistem Komputer dan Rangkaian
 - Sijil Sistem Komputer dan Sokongan
 - Sijil Teknologi Maklumat
 3. Sijil Institut Kemahiran Tinggi PERDA Level 3, KKM
 - Sijil Teknologi Kejuruteraan Komputer

4. Sijil Kemahiran Malaysia Level 3

- Juruteknik Rangkaian Komputer (D-050-3)
- Juruteknik Rangkaian Komputer (D-051-3)
- Juruteknik Rangkaian Komputer (IT-030-3)
- Juruteknik Sistem Komputer (D-040-3)
- Juruteknik Sistem Komputer (D-041-3)
- Operasi Sistem Komputer (IT-020-3:2013:)
- Pembangunan Aplikasi-Pengaturcara Utama (IT-010-3)
- Perkhidmatan Rangkaian Komputer (IT-030-3:2013:)
- Sokongan & Penyelenggaraan IT (IT-035-4:2014)

PROGRAM STRUCTURE

**INFORMATION TECHNOLOGY AND COMMUNICATION DEPARTMENT
POLITEKNIK KUCHING SARAWAK
DIPLOMA IN INFORMATION TECHNOLOGY (DIGITAL TECHNOLOGY)
TRACK NETWORKING SYSTEM**

SEMESTER 1							
COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Compulsory	MPU24XX1	Sukan	0	2	0	1	
	MPU24XX1	Unit Beruniform 1					
	MPU22053	English for Digital Technology	2	0	2	3	
Common Core	DBM10063	Mathematical Computing	2	0	2	3	
	DFC10033	Introduction to Computer System	2	3	0	3	
	DFC10042	Problem Solving and Program Design	2	2	0	2	
	DFC10093	Computer System Architecture	3	1	0	3	
	DFC10103	Operating System	2	3	0	3	
TOTAL			28			18	

SEMESTER 2							
COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Compulsory	MPU23032	Pengajian Islam	1	0	2	2	
	MPU23142	Pendidikan Moral					
	MPU24XX1	Kelab/Persatuan	0	2	0	1	MPU24XX1
	MPU24XX1	Unit Beruniform 2					
Common Core	DBM20083	Discrete Mathematics	2	0	2	3	
	DFC20123	Database Design	2	3	0	3	
	DFC20143	Introduction to Networks	2	3	0	3	
	DFC20113	Programming Fundamentals	2	3	0	3	DFC10042
	DFT20083	Security Basics and IT Professional	3	2	0	3	
TOTAL			29		18		

SEMESTER 3							
COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Compulsory	MPU21032	Penghayatan Etika & Peradaban	1	0	2	2	
Common Core	DFC30153	Data Structures	3	1	0	3	DFC20113
	DFP30033	Human Computer Interaction	3	1	0	3	
Specialisation	DFT30103	Cyberpreneurship	2	3	0	3	
	DFN30273	Switching Essentials	2	3	0	3	DFC20143
	DFN30053	Open-Source Operating System	2	3	0	3	DFC10103
		TOTAL	26			17	

SEMESTER 4

COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Common Core	DFC40163	System Analysis and Design	3	1	0	3	
Specialisation	DFN40283	Routing Essentials	2	3	0	3	DFC20143
	DFN40183	Open-Source Server Administration	2	3	0	3	DFN30053
	DFN40143	Network Security	2	3	0	3	DFC20143
Electives	DFN40242	Embedded Internet of Things (IOT)	1	3	0	2	
	DFN40263	Programming Essentials in Python	2	3	0	3	
TOTAL			28			17	

SEMESTER 5

COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Specialisation	DFN50173	Connecting Wan	2	2	0	3	DFN30073
	DFN50223	Windows Server Administration	2	3	0	3	DFC10103
	DFT50114	Integrated Project	2	3	0	4	ALL COMMON CORE SUBJECT
Electives	DFN50133	Network Design	2	3	0	3	DFC20143
TOTAL			19			13	

SEMESTER 6

COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Industrial Training	DUT60019	Industrial Training	0	0	0	9	
TOTAL				0		9	

TOTAL CREDIT VALUE: 92

PROGRAM STRUCTURE

**INFORMATION TECHNOLOGY AND COMMUNICATION DEPARTMENT
POLITEKNIK KUCHING SARAWAK
DIPLOMA IN INFORMATION TECHNOLOGY (DIGITAL TECHNOLOGY)
TRACK SOFTWARE AND APPLICATION DEVELOPMENT**

SEMESTER 1							
COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Compulsory	MPU24XX1	Sukan	0	2	0	1	
	MPU24XX1	Unit Beruniform 1					
	MPU22053	English for Digital Technology	2	0	2	3	
Common Core	DBM10063	Mathematical Computing	2	0	2	3	
	DFC10033	Introduction to Computer System	2	3	0	3	
	DFC10042	Problem Solving and Program Design	2	2	0	2	
	DFC10093	Computer System Architecture	3	1	0	3	
	DFC10103	Operating System	2	3	0	3	
TOTAL			28			18	

SEMESTER 2							
COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Compulsory	MPU23032	Pengajian Islam	1	0	2	2	
	MPU23142	Pendidikan Moral					
	MPU24XX1	Kelab/Persatuan	0	2	0	1	MPU24XX1
	MPU24XX1	Unit Beruniform 2					
Common Core	DBM20083	Discrete Mathematics	2	0	2	3	
	DFC20123	Database Design	2	3	0	3	
	DFC20143	Introduction to Networks	2	3	0	3	
	DFC20113	Programming Fundamentals	2	3	0	3	DFC10042
	DFT20083	Security Basics and IT Professional	3	2	0	3	
TOTAL			29			18	

SEMESTER 3

COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Compulsory	MPU21032	Penghayatan Etika & Peradaban	1	0	2	2	
Common Core	DFC30153	Data Structures	3	1	0	3	DFC20113
	DFP30033	Human Computer Interaction	3	1	0	3	
Specialisation	DFT30103	Cyberpreneurship	2	3	0	3	
	DFT30043	Digital Multimedia	1	4	0	3	
	DFC30133	Object Oriented Programming	2	4	0	3	DFC10042
TOTAL			27			17	

SEMESTER 4							
COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Common Core	DFC40163	System Analysis and Design	3	1	0	3	
Specialisation	DFT40043	Web Design Technologies	1	4	0	3	
	DFP40023	Visual Basic Programming	1	4	0	3	DFC30133
	DFP40093	Mobile Application Development	2	3	0	3	DFC30133
Electives	DFP40182	Software Requirement & Design	1	2	0	2	
	DFP40203	Python Programming	2	3	0	3	DFC20113
TOTAL			27		17		

SEMESTER 5

COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Specialisation	DFP50043	Integrative Programming and Technologies	2	3	0	3	DFC30133
	DFP50123	Secure Mobile Computing	2	3	0	3	DFT20083
	DFT50114	Integrated Project	2	3	0	4	ALL COMMON CORE SUBJECT
Electives	DFP50173	Web Development Technology	2	3	0	3	DFC20123, DFT40043
TOTAL			20		13		

SEMESTER 6

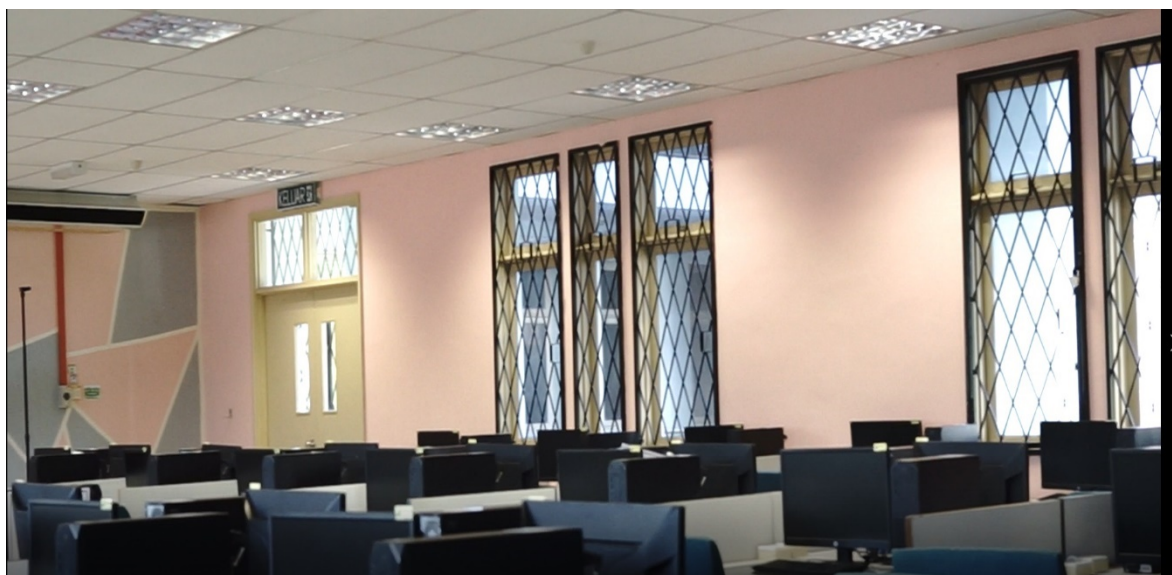
COMPONENTS	COURSE CODE	COURSE	L	P	T	C	PRE-REQUISITE
Industrial Training	DUT60019	Industrial Training	0	0	0	9	
TOTAL			0			9	

TOTAL CREDIT VALUE: 92

GALLERY



Aerial View Of JTMK



View of Computer Lab



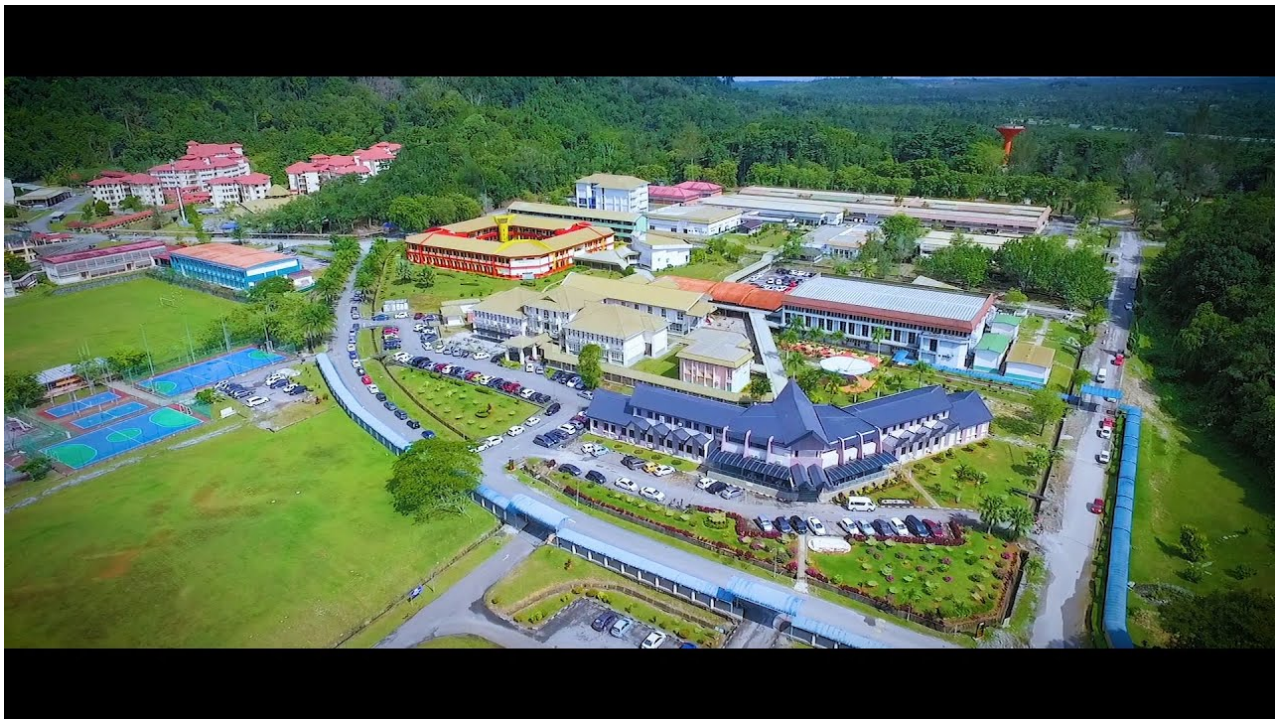
Switching Device for Practical Purpose



View of Computer Lab



Club and Association Activity at PKS



Aerial View of Politeknik Kuching Sarawak

MAP OF POLITEKNIK KUCHING SARAWAK



EDITORIAL TEAM

Patron	Sharafi B. Mohamed Yusoff Head of Department Jabatan Teknologi Maklumat dan Komunikasi
Advisors	Norbaizura Bt. Mokhtar Head Programme (Networking System Track) Norfazilah Bt. Mohamad Pon Head Programme (Software and Application Development Track) Marlina Bt. Abdul Manaf Lead Accreditation Coordinator
Lead Editors	Esstree B. Ishak Rohaya Bt. Mohamad
Proofread	Anita Ajang
Publication	Zainal Fitri B. Mohd Zolkifli



9789672953319