Admission Requirements

i. Bachelor in the field of Engineering or Engineering Technology with CGPA of 2.750 or;
ii. Bachelor in the field of Engineering or Engineering Technology with CGPA of 2.500-2.749 with at least 3 years of working experience in relevant field or;
iii. Bachelor in the field of Engineering or Engineering Technology with CGPA of 2.250-2.499 with at least 5 years of working experience in relevant field or;
iv. Bachelor in any related field of Science or Technology with CGPA of 3.000 or;
v. Bachelor in any related field of Science or Technology with CGPA of 2.750-2.999 with at least 3 years of working experience in relevant field or;
vi. Bachelor in any related field of Science or Technology with CGPA of 2.500-2.749 with at least 5 years of working experience in relevant field.

Note: Candidates with Bachelor of Science or Technology degrees or their equivalents are admitted, prerequisite modules in Engineering must be offered to adequately prepare them for their advanced study.

Language Requirements

International candidates are required to fulfill English language requirement as follows:

a) 550 for TOEFL Paper-based Test (Academic Version); or
b) Band 6.0 for IELTS (Academic Training); or
c) 79-80 for TOEFL Internet-based Test (Academic Version).

Candidate without the requisite minimum score for TOEFL or IELTS may be granted a provisional admission. Such candidate will be required to pass an English Placement Test conducted by the University.

Fees

Fees	Master without thesis	
	Malaysian Student	International Student
Basic Fees (1st semester)	RM 1,350	RM 2,400
Basic Fees (2nd and subsequent semester)	RM 1,100	RM 2,150
Credit Fees * subject to change	RM 250 / credit	RM 400 / credit

APPLICATION

Please apply online via:

http://sgsportal.upm.edu.my:8080/sgsportal
www.sgs.upm.edu.my/prospective_students-2964

For further information, please contact :

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MASTER OF COMMUNICATION ENGINEERING

Department of Computer and Communication Systems Engineering, Faculty of Engineering, Universiti Putra Malaysia

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INTRODUCTION

This program is designed to deepen the understanding and applications of communications engineering mainly in two focused areas which are wireless and photonics communications. The courses offered emphasize on various levels of communications such as devices, systems, transmission, networks and standards for both areas. Both wireless and photonics technologies are high impact research areas that can support many applications in various fields including agriculture, communication, sensing and many others.

PROGRAMME REQUIREMENTS

Credit Requirements for Graduation

Students enrolling under this programme must fulfill 40 credits of courses to graduate. The credit distributions for compulsory courses, elective courses and project are as follows:

- Compulsory Courses 24 credits
- Elective Courses 6 credits
- Dissertation 10 credits

Compulsory Courses

Students must take all the listed compulsory courses;

ECC5120	ICT Project Management	3 credits
ECC5123	Research Methods in Computer and Communication Engineering	3 credits
ECC5121	Sustainability in Telecommunication Technology	3 credits
ECC5122	Standards and Regulations in Communication	3 credits
ECC5507	Advanced Cellular and Satellite Communication	3 credits
ECC5611	Advanced Optical Fiber Networks	3 credits
ECC5720	Advanced Digital Signal Processing	3 credits
ECC5721	Advanced Computer Networks	3 credits
ECC5988	Dissertation	10 credits

Note: ECC5988 - Dissertation is carried out over two semester

Elective Courses

Students must take only two elective courses (2 credits) out of the listed below;

ECC5409	Network Management	3 credits
ECC5503	Microwave Engineering	3 credits
ECC5522	Wireless Sensor Network	3 credits
ECC5621	Photonic Devices Design	3 credits
ECC5723	Network Security	3 credits
ECC5724	Advanced Mobile Networks	3 credits

Identification on the elective courses for the student will be made by the program coordinator.

Course Synopsis

ECC5120 | ICT Project Management | 3 Credits
This course covers topics related to ICT project management such as procedures to initiate projects, planning and scheduling methods, and the tools in project planning such as the use of network and Gantt chart. This course also covers methods in implementing and controlling projects to ensure project objectives and its completion time can be realized.

ECC5123 | Research Methods in Computer and Communication Engineering | 3 Credits
This course covers the best practices in the execution of graduate research in computer and communication systems engineering. It encompasses overview of research methodology, hallmarks of scientific research, research design, thesis writing, oral presentations, and ethical considerations in engineering research.

ECC5121 | Sustainability in Telecommunication Technology | 3 Credits
This course covers the concept of sustainability in the field of computer and communication system engineering. The studies include introduction on the sustainability, environmental cost, electronic technologies for energy efficient and sustainable growth, sustainable business model, network energy consumption, power contributors, energy improvement and international forums on green and sustainable telecommunication technology.

ECC5122 | Standards and Regulations in Communication | 3 Credits
This course covers standards and regulations in communications-related technology and services, addresses the application of standards to and regulation to their implementation and analyses issues of standards and regulation based on selected case studies.

ECC5507 | Advanced Cellular and Satellite Communication | 3 Credits
This course covers cellular and satellite concept as the basis for system design. Mobile radio propagation of large and small scale and length scale body, advanced modulation techniques in cellular and satellite communications, multiple access techniques and the current and future wireless system related to cellular and satellite will also be discussed.

ECC5611 | Advanced Optical Fiber Networks | 3 Credits
This course covers the important issues in optical networks including the existing and future. Emphasis will be given on network elements and design, control and management, and protection and survivability of the particular networks.

ECC5720 | Advanced Digital Signal Processing | 3 Credits
This course covers topics related to advanced digital signal processing, that covers advanced aspects of the signal and noise properties. The discussion includes the wavelets transforms, Bayesian inference and Hidden Markov Model to model the signal and noise. Furthermore, the course focusses on the adaptive filters, linear prediction model, power spectrum and correlation and real time digital signal processing.

ECC5721 | Advanced Computer Networks | 3 Credits
This course covers advanced topics in computer networks including IPv6, QoS, peer-to-peer networks and self-managed networks.

ECC5988 | Dissertation | 10 Credits
The topic is chosen from one of the following areas: Wireless communication engineering, photonics and optical system engineering, communication and network engineering or any engineering fields deemed appropriate by the program.

ECC5409 | Network Management | 3 Credits
This course covers management and monitoring effective computer network systems. It provides an understanding of the principles and practices needed for smooth operation of computer network systems.

ECC5503 | Microwave Engineering | 3 Credits
This course covers the principle of electromagnetic, microwave network analysis, design of passive and active components, measurement techniques and application of microwave systems.

ECC5522 | Wireless Sensor Network | 3 Credits
This course covers the principles and applications of wireless sensor network. Features of wireless sensor network covered are network architecture, topology, protocols, hardware platform and applications.

ECC5621 | Photonic Devices Design | 3 Credits
This course covers the application of the latest optical devices and optical devices technology. It also covers the design of geometric optics devices, integrated optic devices, planar waveguides' fabrication techniques, passive integrated optic devices and active integrated optic devices.

ECC5723 | Network Security | 3 Credits
This course covers the principles of computer network security such as cryptography, security policy and design, and intrusion detection. The basic building blocks of network security infrastructure are discussed with emphasis on firewall, router security, virtual private network (VPN) and monitoring. A practical approach of network intrusion using latest method and tools are also presented.

ECC5724 | Advanced Mobile Networks | 3 Credits
This course covers mobile networks, enabling technologies, mobile network systems, mobility management in services/personal communication networks (PCS/PCN), wireless adhoc networks, support systems for mobile networks and other mobile networks.