

INTERNATIONAL



UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

Faculty of Engineering Department of Civil Engineering

www.eng.upm.edu.my

Master of Remote Sensing and GIS



BERILMU **B**ERBAKTI **I**
WITH KNOWLEDGE WE SERVE



INTRODUCTION

This programme is designed to deepen the understanding and applications of spatial science and technology. The application of Remote Sensing and GIS have crossed various fields, especially activities involving spatial data base. This programme also involves the identification of land-based geographical data such as forest types and landuse, water-based ones such as identifying the location of fishing grounds and oil spills. Also of importance are land management and legal issues relating to land ownership and use.

PROGRAMME REQUIREMENTS

Credit Requirements for Graduation

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

Compulsory Courses	24 credits
Elective Course	6 credits
Dissertation	10 credits

Compulsory Courses

Students must take all the listed compulsory courses :

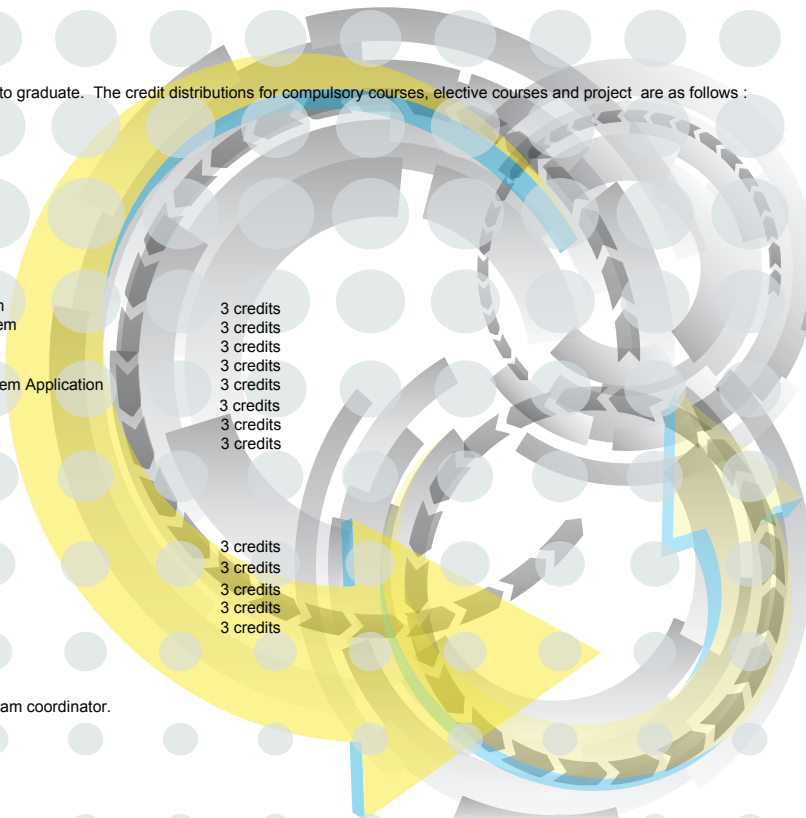
ECV5501	Technical Issues in Geographic Information System	3 credits
ECV5502	Application Issues in Geographic Information System	3 credits
ECV5503	Quantitative Remote Sensing	3 credits
ECV5504	Image Processing and Analysis	3 credits
ECV5508	Remote Sensing and Geographic Information System Application	3 credits
ECV5509	Global Positioning System	3 credits
ECV5510	Radar Image Processing	3 credits
EAB5900	Research Methodology	3 credits

Elective Courses

Students must take two elective courses out of the listed courses :

ECV5505	Geo – Statistical Analysis	3 credits
ECV5506	Programming for Spatial Data Analysis	3 credits
ECV5507	Spatial Information Management	3 credits
ECV5511	Hyperspectral Remote Sensing	3 credits
ECV5955	Special Topics	3 credits

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



Course Synopsis

•**ECV5501** •**Technical Issues in Geographic Information System** •**3 credits**

This course is concerned with the technical issues of GIS and relationships with implementation and application of GIS. Topics include the coordinate systems, algorithms, data structure of vector and raster data, and representation.

•**ECV5502** •**Application Issue in Geographic Information System** •**3 credits**

This course discusses both the conceptual and practical aspects of developing GIS applications and it will cover issues from planning to project implementation.

•**ECV5503** •**Quantitative Remote Sensing** •**3 credits**

This course focuses on the geometric and quantitative aspects of remote sensing. It will cover physical aspect of remote sensing, remote sensing in visible, near infrared and infrared wavelengths. Optical, microwave and various remote sensing systems will also be discussed.

•**ECV5504** •**Image Processing and Analysis** •**3 credits**

This course is concerned with the advanced techniques for analysis and interpretation of remotely sensed imagery, with emphasis on data acquired from satellite and airborne platforms. This includes methods of enhancement and display, techniques for feature extraction, including clustering and related statistical methods, and interfacing of remote sensing and GIS.

•**ECV5505** •**Geo-Statistical Analysis** •**3 credits**

This course covers the statistics for spatial data analysis, geostatistical data, spatial prediction, and geostatistical data application.

•**ECV5506** •**Programming for Spatial Data Analysis** •**3 credits**

This course covers the fundamentals aspect of writing and developing routines for input and processes of spatially related data. Students will learn on how to develop graphical user interfaces and customization of GIS software to suit users applications.

•**ECV5507** •**Spatial Information Management** •**3 credits**

This course discusses about the management of spatial information. It includes recovery, concept of national spatial data infrastructure, spatial information as a sources of legal evidence, personal data protection law, protection under Malaysian Law for parties that experience losses due to the use of spatial data.

•**ECV5508** •**Remote Sensing and Geographic Information System Application** •**3 credits**

This course covers the content that spreads on several disciplines such as resource management, disaster management, precision agriculture, urban and regional planning, oceanography, utilities and road safety. Students will be exposed to several aspects on the planning, implementation, technical issues, application issues and management.

•**ECV5509** •**Global Positioning System** •**3 credits**

This course will cover theory and principles of positioning using GPS satellite, including the processing, and application of GPS for various types of applications

•**ECV5510** •**Radar Image Processing** •**3 credits**

This course is concerned with the techniques for processing and analysis specifically to radar imagery. It covers Synthetic Aperture Radar (SAR) principles, processing, image correction and enhancement. SAR image analysis, interpretation and applications will also be discussed.

•**ECV5511** •**Hyperspectral Remote Sensing** •**3 credits**

This course covers hyperspectral remote sensing technology in terms of data collection and information processing techniques as well as operations and applications of hyperspectral data for various disciplines.

•**ECV5512** •**Location-Based Services** •**3 credits**

This course covers the concept of Location-based Services (LBS) including the components, techniques and applications of LBS as well as LBS system development for various applications.

•**ECV5555** •**Special Topics** •**3 credits**

The contents of the course depends on the topics selected by the lecturer/s who teach/es the course. It covers the theoretical, application and latest development in related fields.

For further information
Please contact :

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Programme Coordinator :

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ADMISSION REQUIREMENTS

An applicant with a bachelor degree in engineering with CGPA 2.500/Second Class Lower and at least three (3) years working experiences in relevant field; or

An applicant with a bachelor degree in engineering with CGPA 2.750/Second Class Lower

An applicant with a bachelor degree in science with CGPA 3.000/Second Class Upper OR CGPA 2.750/Second Class Lower and at least three (3) years working experiences in relevant field

Note:

** When candidates with Bachelor's 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.*

** Please refer to programme coordinator for more information on admission requirements*

FEES

Fees	Master without thesis	
	Malaysian Student	International Student
Basic Fees (1 st semester)	1,206.00	2,206.00
Basic Fees (2 nd and subsequent semester)	950.00	1,950.00
Credit Fees * subject to change	250.00 / credit hour	350.00 / credit hour

Language Requirement

- A Malaysian candidate must have obtained at least a credit in English at Sijil Pelajaran Malaysia level or have passed English courses conducted at the Diploma or Bachelor's Level.
- All international candidates from countries where English is not a medium of instruction must have obtained a minimum score of 550 for TOEFL or Band 6 for IELTS. This requirement is not applicable to candidates applying for admission into the Malay Language Studies.
- A 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.
- A candidate who has failed the English Placement Test will be required in the first semester to pass a prescribed English course. Should the candidate fail to obtain the prescribed minimum grade, the University may allow him to repeat the prescribed English course in the second semester.
- A candidate who fails after the second attempt will have his candidature suspended until he passes the English course before being allowed to continue with his Masters programme.

Application For Admission

Please apply online via <http://www.sgs.upm.edu.my> and send your application supporting documents to the address below:

Dean
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Email : admission@putra.upm.edu.my
Website : <http://www.sgs.upm.edu.my>