INTERNATIONAL

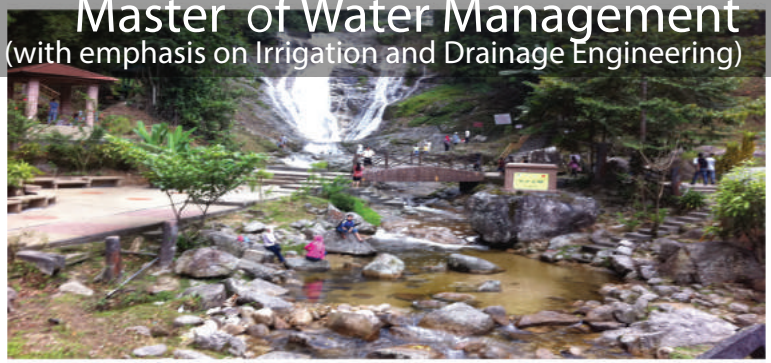
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

Faculty of Engineering

Department of Biological and Agricultural Engineering

www.eng.upm.edu.my

Master of Water Management
(with emphasis on Irrigation and Drainage Engineering)



BERILMU BERBAKTI
WITH KNOWLEDGE WE SERVE

This programme is designed to prepare professionals for the efficient and effective management of water resources especially in the agricultural sector. Students in this programme are given exposure to water related issues and best practices in water resources management especially in irrrigation and drainage engineering. Students are also given the liberty to choose elective courses and project topics which best cater for their interests and professional needs. The programme is versatile and serves to enhance the development of the individual professional with the wide selection of courses including some not listed here that are related to the agricultural industry. Topics covered encompass integrated water resources management and efficient water management systems using tools such as environmental sensors, remote sensing and geospatial information systems.

PROGRAMME REQUIREMENTS

Credit Requirements for Graduation

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

Compulsory Modul	9 credits
Core and Elective Modul	21 credits
Dissertation	10 credits

Compulsory Modul

Students must take all the listed compulsory courses:

EAB 5110	Crop Biosphere	3 credits
EAB 5304	Hydraulic Engineering Systems	3 credits
EAB 5900	Reseach Methodology	1 credits

Core and Elective Modul

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

EAB 5300	Agricultural Water Management	3 credits
EAB 5306	Groundwater Engineering	3 credits
EAB 5308	Pressurized Irrigation Systems	3 credits
EAB 5318	Drainage Engineering	3 credits
EAB 5320	Water Resources Systems	3 credits
EAB 4208	Agricultural Waste Management	3 credits
EAB 4404	Global Navigation Satellite System	3 credits
EAB 5310	Natural Resource Conservation	3 credits
EAB 5314	Soil Erosion	3 credits
EAB 5955	Special Topic – Water Management	3 credits
ECV 5501	Technical Issues in Geographical Information System	3 credits
ECV 5503	Quantitative Remote Sensing	3 credits
ECV 5508	Remote Sensing and GIS Applications	3 credits

Selection of the elective courses for the students will be made by the program coordinator.

Dissertation

Students are required to register EAB 5900 – Dissertation fo 5 credits in the second semester and another 5 credits in the third semester. The topic for the dissertation is chosen by the students based on their interests. Some of the topics include impact of climate change on water resources, groundwater exploration, wetland management, hydraulic structures, rainwater harvesting, wastewater management, flood management, hydroponics, aquaculture, etc. Students will be examined by a panel of examiners based on the submitted report and oral presentation at the end of the third semester.

Course Synopsis

EAB 5110 Crop Biosphere 3 credits
This course covers the concept of biosphere in relation to crop production and biodiversity, relationships between soil, water, crops and atmospheric factors and problems of water quality and problematic soils for agriculture production

EAB 5300 Agricultural Water Management 3 credits
This course covers water resource management for agriculture, planning process to identify the most effective water management and preparation of water management plan document.

EAB 5304 Hydraulic Engineering Systems 3 credits
This course covers the flow of water in pipes and open channels, hydraulic analyses, designs of pipelines and pipe networks, and modelling studies of hydraulic structures.

EAB 5306 Groundwater Engineering 3 credits
This course covers the importance, fundamental principles, modelling and management of groundwater aquifer as well as design of wells.

EAB 5308 Pressurized Irrigation Systems 3 credits
This course covers planning, design, operation and maintenance, evalution of pressurised irrigation systems, and automation.

EAB 5318 Drainage Engineering 3 credits
This course covers surface and subsurface drainage systems for agriculture, drainage design factors, operation and maintenance of drainage systems.

EAB 5320 Water Resources Systems 3 credits
This course covers integrated water resources management, analysis of various sources of water such as surface water and groundwater, estimation of water requirements and water treatment methodology and process, and water resources system engineering.

EAB 4208 Agricultural Waste Management 3 credits
This course covers characteristics of agricultural waste, the principles of environmental impact assessment and treatments for agricultural waste.

EAB 4404 Global Navigation Satellite System 3 credits
This course covers location determination and navigation, reference system, orbital theory, and Global Navigation Satellite System (GNSS) including the sources of error and accuracy.

EAB 5310 Natural Resource Conservation 3 credits
This course covers conservation of natural resources through laws, engineering information, and design and resource conservation concepts.

EAB 5314 Soil Erosion 3 credits
This course covers the mechanics and processes involved in soil erosion, roles of rainfall and soil, and models to predict soil loss and erosion from land development site.

EAB 5955 Special Topic – Water Management 3 credits
Students are required to carry out a directed study on selected topic in water management and prepare a final report for presentation in a seminar at the end of the semester.

ECV 5501 Technical Issues In Geographical Information System 3 credits
This course covers the concepts and technical issues on GIS usage which covers techniques for effective GIS development and analysis.

ECV 5503 Quantitative Remote Sensing 3 credits
This course focuses on the geometric and quantitative aspects of remote sensing, covering physical aspects of remote sensing and various remote sensing systems.

ECV 5508 Remote Sensing and GIS Applications 3 credits
This course covers the applications of GIS and remote sensing in various fields and the use of GIS and remote sensing for national development.

For further information

Please contact :

Deputy Dean (Postgraduate Studies)
Faculty of Engineering
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43400 UPM, Serdang
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Malaysia

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Programme Coordinator :

Aimrun Wayayok (Dr.)
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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 (1st semester)	1,206.00	2,206.00
Basic Fees (2nd and subsequent semester)	950.00	1,950.00
Credit Fees	250.00 / credit hour	350.00 / credit hour

* subject to change

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
School of Graduate Studies
Universiti Putra Malaysia
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43400 UPM Serdang
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Malaysia

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