

Master of Engineering (CIVIL)

Objective

The aim of Master of Engineering (Civil) program offered at Universiti Teknologi Malaysia is to fortify opportunity for students to develop their knowledge and skills in solving multi-disciplinary problem in civil engineering. The courses offered in this program cover structural engineering, geotechnical engineering, hydraulics and hydrology, transportation and highway, environmental engineering and construction management. Students are also trained in conducting research project in any field in civil engineering.

Admission Requirements

Candidates should hold a good bachelor's degree in civil engineering from Universiti Teknologi Malaysia (CGPA>3.00) or equivalent. A lower grade degree with sufficient working experience may also be considered for admission.

Credit Requirements

A student must complete 46 credit hours for graduation. The course consists of university general elective courses (6 credits), core courses (18 credits), elective courses (12 credits), and master project (10 credits).

Core Course:

All Core Courses are compulsory (Total: 18 credits)

MKAE 1013

Advanced Structural Analysis

This course exposes students to matrix method for analysis of 2D and 3D framed structures. The principle of virtual work is employed for developing the stiffness matrix of various structural elements. The course also includes the application of matrix method for instability analysis and critical load prediction of the structures. The application of matrix method to nonlinear material analysis is also covered.

MKAM 1013

Construction Project Management

This course provides insight about contemporary practice in managing construction project. It analyses issues faced by construction industry and strategy to reengineer its current practice with regard to work process flow, procurement system and reporting system.

MKAG 1113

Advanced Hydraulics

This course deals with wave processes, open channel flows and unsteady flow in closed conduits. Open channel flows pertain to non-uniform flows and shallow water equations. This course further describes water hammer problems in pipes and means of alleviation.

MKAJ 1033

Advanced Foundation Engineering

Site Investigation for design of foundation. Principles of foundation design, selection of foundation, bearing capacity and settlement problems. Design of spread footings, raft foundations, piers, caissons and cofferdam. Problems related to pile design. Foundation for offshore structures.

MKAK 1003

Environmental Management and Sustainability

The course include general principles of ecosystem and human involvement. Overview on environmental pollutions: causes and effects. Environmental conservation and control, environmental history, environmental law and regulations. Environmental Impact Assessment (EIA) and cost-benefit ratio.

MKAE 1083

Advanced Design of Concrete Structures

Topics covered are analysis and design of ribbed and flat slab floor, design of torsion for rectangular and flanged beams, analysis and design of deflection and crack width, design of water retaining structures and design of water retaining structures and design of raft foundation.

Masters Project MKAA 1514 and MKAA 1526 (Total: 10 credits)

Masters' Project is an independent project or research type work on topics that are relevant to civil engineering and construction. The project topics will have to be approved by the program panel and will be supervised by a member of the academic staff. The Masters' Project can also be developed based on student's own experience in industry.

Compulsory University's General Elective Courses (Total: 6 credits)

UXXX XXX3 University General Elective Course
UAPA 0013 Research Methodology

Duration of Study

Full time: 3-6 semester
Part time: 4-8 semester



Elective Courses:

Choose four courses from the following list, or choose two courses from the following list plus another two courses from other programs. (Total: 12 credits)

MKAE 1023	Analysis and Design of Structural System	MKAJ 1023	Advanced Geotechnical Analysis and Design
MKAE 1043	Advanced Construction Materials	MKAJ1013	Advanced Soil Mechanics
MKAE 1073	Advanced Design of Steel Structures	MKAJ 1053	Software Application in Geotechnical Engineering
MKAE 1143	Finite Element Method	MKAQ 1013	Highway and Infrastructure Design
MKAE 1183	Design of Prestressed Concrete	MKAQ 1053	Pavement Design and Construction
MKAM 1023	Construction Site Management and Safety Control	MKAQ 1063	Public Transport System
MKAM 1033	Construction Technology	MKAK 1043	Environmental Quality and Analysis
MKAM 1043	Construction Law and Contract	MKAK 1063	Water Quality Assessment and Management
MKAG 1213	Advanced Hydrology		
MKAG 1223	Water Resources Management		