

CURRICULUM STRUCTURE

University's General Elective Courses(Total : 5 credits)		
UABA 0013	Principle Engineering Management	3 credits
UAPA 0013	Research Methodology	3 credits
Core Courses (Total : 18 credits)		
MKAR 1013	Principles of Forensic Engineering	3 credits
MKAR 1023	Laws in Forensic Engineering	3 credits
MKAR 1033	Safety Engineering	3 credits
MKAR 1043	Risk Analysis	3 credits
MKAE 1043	Advanced Construction Materials	3 credits
	Investigation of Structural Problems & Failure	3 credits
MKAR 1053		
Elective Courses – Choose any four from the following list (Total : 12 credits)		
MKEP 1003	Electrical System Forensic	3 credits
MKAE 1013	Advanced Structural Analysis	3 credits
MKAE 1023	Analysis & Design of Structural System	3 credits
MKAQ 1023	Advanced Road Material	3 credits
MKAK 1043	Environmental Quality & Analysis	3 credits
MKAJ 1053	Software Application in Geotechnical Engineering	3 credits
	Environmental Geotechnics	
MKAJ 1083	Transport Safety	3 credits
MKAQ 1093	Condition Assessment of High Voltage Insulation	3 credits
MKEP 1103	IC Testing	3 credits
	Advanced Concrete Technology	
MKEL 1133	Water Supply Engineering	3 credits
MKAE 1153	Port & Harbour Engineering	3 credits
MKAG 1173	Fire Resistance of Structures	3 credits
MKAG 1193	Inherent Safety & Health Design	3 credits
MKAE 1213	Emergency Response Management	3 credits
MKKH 1223	Process Safety & Loss Prevention	3 credits
MKKH 1233	Asset Integrity	3 credits
MKKH 1243	Incident Investigation	3 credits
MKKH 1253	Network Modeling & Performance	3 credits
MKKH 1343	Advanced Techniques of Materials Characterization	3 credits
MKET 1393	Microstructure & Mechanical Properties of Materials	3 credits
MKMB 1603	Crashworthiness & Structural Impact	3 credits
	Corrosion 1	
MKMB 1623	Corrosion 2	3 credits
MKMJ 2163		3 credits
MKMB 2613		3 credits
MKMB 2653		3 credits
Masters Project (Total : 10 credits)		
MKAK 1514	Master Project 1	4 credits

MKAK 1526	Master Project 2	6 credits
TOTAL CREDITS		46 credits
Duration of Study		
Full Time	:	3 – 6 semester

COURSE SYNOPSIS

CORE COURSES

MKAR 1013 - Principles of Forensic Engineering

This course is designed for students to understand the activities of forensic experts in the engineering professions. It covers aspects of forensic activity that are common to all disciplines such as clients, and scope and purpose of investigation, techniques, procedures and tools used in investigation and analysis. Interface with forensic specialists from other discipline. Impact of forensic activity on improved practices, products, or planning to reduce the frequency and severity of failures.

MKAR 1023 - Laws in Forensic Engineering

This course introduces students to laws related to the professional engineering practices. The course will emphasize on two main liabilities; tort, and statutory liabilities. The role of professional as expert witness will be introduced in law of evidence so as the students will be familiar to the role of expert witness and the procedures involved during experts at trial. The focus will be on building a credible and believable testimony. At the end of the course, the students are expected to understand the legal setting in the practice and be able to analyse and apply critical reasoning and make informed judgement in addressing legal issues in engineering practice and to stand as credible expert witness.

MKAR 1033 - Safety Engineering

This subject fundamental concept of safety engineering, and understanding safety of equipment commonly used in engineering installation and maintenance, safety of chemicals used in engineering processes, and implementation of safety engineering programs in engineering installations and plants.

MKAR 1043 - Risk Analysis

This course aims to give students a comprehensive exposure to structural safety, risk assessment and reliability engineering concept related to civil engineering system. The course contents consist of four different module named Systems Reliability, Safety & Risk, Data Analysis & Simulation and Risk Assessment & Safety Management. Safety & Risk leads to an understanding of the principles of structural reliability theory and its application to risk and reliability engineering. Data Analysis & Simulation is designed to develop knowledge of statistical data analysis and its application in engineering and science and introduces the concepts of using simulation techniques for analysis of complex systems. It also teaches linear optimization techniques and the ability to apply them to solve simple problems. In Systems Reliability, this section gives an understanding of the qualitative and quantitative techniques that are used in the reliability, availability and maintainability analysis of all types of engineering systems. The final part of this course, Risk Assessment & Safety Management gives student an appreciation of risk from individual and societal perspectives as well as