



UNIVERSITI TEKNOLOGI MARA

BCT693: FORENSIC ENGINEERING

Course Name (English)	FORENSIC ENGINEERING APPROVED
Course Code	BCT693
MQF Credit	3
Course Description	This course deals with the introduction to forensic engineering for the assessment and solution of building engineering construction failures.
Transferable Skills	1. Knowledge skill 2. Practical skill 3. Teamwork skill
Teaching Methodologies	Lectures, Lab Work, Tutorial, Discussion
CLO	CLO1 Discover the fundamental aspects of structural and geotechnical failure in construction industry. CLO2 Display the skills in forensic engineering through assessing degree of structural and geotechnical failure in construction industry CLO3 Display teamwork skills in preparing report presentation regarding structural and geotechnical failure in construction industry
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction to Forensic engineering 1.1) Definition of technical terms 1.2) Historical precedence of construction failures 1.3) Malaysian Professional Engineers' Code of Ethics as outlined by Board of Engineers Malaysia (BEM); 1.4) Legal implications of construction failure.	
2. Investigating Structural Failures 2.1) Type of structural hazards 2.2) Post-mortem study on the modes, causes of failure and hazard 2.3) Design guidelines, standards, specifications and manuals 2.4) Investigation approach, assessment technique and remediation method 2.5) Systematic reporting & presentation of findings in legal litigation	
3. Investigating Geotechnical Failures 3.1) Type of structural hazards 3.2) Post-mortem study on the modes, causes of failure and hazards 3.3) Design guidelines, standards, specifications and manuals 3.4) Investigation approach, assessment technique and remediation method 3.5) Systematic reporting & presentation of findings in legal litigation	

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Lab Exercise	Direct observation valuing the skills in assessing degree of structural and geotechnical failure in construction industry	10%	CLO2
	Presentation	Group presentation of findings regarding structural and geotechnical failure in construction industry	20%	CLO3
	Test	Written test to cover the knowledge of the structure and geotechnical failure in construction	15%	CLO1
	Test	Written test to cover the knowledge of the structure and geotechnical failure in construction	15%	CLO1
	Written Report	written report valuing the skills in assessing degree of structural and geotechnical failure in construction industry	10%	CLO2
	Written Report	Group written report of findings regarding structural and geotechnical failure in construction industry	30%	CLO3

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> • Max M. Houck 2017, <i>Forensic Engineering (Advanced Forensic Science)</i>, 1 Ed., Academic Press Florida [ISBN: 978-01280271] • The Open University 2016, <i>Introduction to forensic engineering</i>, The Charleswoth Group Walefield [ISBN: 9781473009] • Stephen E. Petty 2013, <i>Forensic Engineering: Damage Assessments for Residential and Commercial Structures</i>, CRC Press, Taylor & Francis Group Boca Raton [ISBN: 978-143989972] • Harold Franck and Darren Franck 2013, <i>Forensic Engineering Fundamentals</i>, 1 Ed., CRC Press, Taylor & Francis Group Boca Raton [ISBN: 978-143987839] • Jian Chu, Kwet Yew Yong 2005, <i>Proceedings of the International Conference on Geotechnical Engineering for Disaster Mitigation and Rehabilitation, Singapore, 12-13 December 2005</i> 1 Ed., World Scientific Publishing Company Incorporated [ISBN: 9789812564696] • Robert T. Ratay 2005, <i>Structural Condition Assessment</i>, 1st Edition Ed., 5, Wiley; 1 edition (January 17, 2005) Hoboken, New Jersey [ISBN: 978-047164719] • Peter Rhys Lewis, Ken Reynolds, Colin Gagg 2003, <i>Forensic Materials Engineering</i>, 1st Edition Ed., 13, CRC Press Florida, USA [ISBN: 0849311829] • <i>Relevant design codes, standards, specifications and manuals eg. BS 8110, BS 5950, BS 1377</i>
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources