

COURSE INFORMATION

Department/ Faculty:	Geotechnical and Transportation Department, Faculty of Civil Engineering	Page:	1 of 4
Course code:	SKAA 4813	Academic Session/Semester:	20172018/2
Course name:	Advanced Design and Construction	Pre/co requisite (course name and code, if applicable):	Highway Engineering SKAA 2832
Credit hours:	3 credit		

Course synopsis	This is one of the elective subjects that will develop the knowledge and experience of the students in pavement design construction. This course comprises the following topics: Factors influencing thickness design, methods of pavement design: AASHTO, Asphalt Institute, ATJ5/85 (2013), Rigid pavement design, Interlocking block design, surface dressing design, construction of various pavement types, earthworks, cut slopes, embankments, surface drainage, subsurface drainage, erosion control, slope protection, culverts.			
Course coordinator (if applicable)	Dr Haryati Yaacob			
Course lecturer(s)	Name	Office	Contact no.	E-mail
	Dr Haryati Yaacob	M50-234	Ext 38666	haryatiyaacob@utm.my
	Prof. Ir. Dr. Hasanan Md. Nor	M46- 358	Ext 31704	hasanan@utm.my
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Mapping of the Course Learning Outcomes (CLO) to the Programme Learning Outcomes (PLO), Teaching & Learning (T&L) methods and Assessment methods:

No.	CLO	PLO (ICGPA CODE)	Weight (%)	*Taxonomies and **generic skills	T&L methods	***Assessment methods
1	Describe the factors that influence the pavement design characteristic	PLO3 (THDS)	30	C1,A4	Lecture, active learning	T/HW/Pr/F
2	Design flexible and rigid pavement, surface dressing and interlocking block pavement.	PLO3 (THDS)	30	C5,P5, A4	Lecture, active learning	T/HW/Pr/F

Prepared by:	Certified by:
Name: Dr. Haryati Yaacob	Name:
Signature:	Signature:
Date: 31 January 2018	Date:

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3	Explain construction of pavement layers	PLO4 (THI)	20	C2,A4	Lecture, active learning	T/HW/Pr/F
4	Analyze the wider scope of road and highway construction	PLO4 (THI)	20	C4, A4	Lecture, active learning	T/HW/Pr/F
Refer *Taxonomies of Learning and **UTM's Graduate Attributes, where applicable for measurement of outcomes achievement ***T – Test; Q – Quiz; HW – Homework; PR – Project; Pr – Presentation; F – Final Exam etc.						

Details on Innovative T&L practices:

No.	Type	Implementation
1.	Active learning	Conducted through in-class activities

Weekly Schedule:

Week 1	Factors influencing thickness design
Week 2	Methods of flexible pavement design :AASHTO, Asphalt Institute
Week 3	Methods of flexible pavement design : Asphalt Institute, ATJ 5/85 (2013)
Week 4	Introduction on rigid pavement concept and elements
Week 5	Methods of rigid pavement design :AASHTO
Week 6	Methods of rigid pavement design :PCA
Week 7	Methods in steel design for rigid pavement
Week 8	Mid-Semester Break
Week 9	Interlocking block design, Surface dressing design
Week 10	Review and Test 1
Week 11	Construction of various pavement types

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Week 12	Earthworks, cut slopes and embankments
Week 13	Surface and subsurface drainages
Week 14	Erosion control, slope protection and culverts
Week 15	Presentation Review and Test 2
Week 16	REVISION WEEK AND FINAL EXAMINATION

Transferable skills (generic skills learned in course of study which can be useful and utilised in other settings):

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Student learning time (SLT) details:

Distribution of student Learning Time (SLT) Course content outline					Teaching and Learning Activities			TOTAL SLT
	Guided Learning (Face to Face)				Guided Learning Non-Face to Face	Independent Learning Non-Face to face		
CLO	L	T	P	O				
	7	35			10	56		
Total SLT	7	35			10	56	108	

Continuous Assessment		PLO	Percentage	Total SLT
1	Test 1	1	15	9
2	Test 2	1	15	
3	Assignment 1	1	15	
4	Assignment 2	1	15	
Final Assessment			Percentage	Total SLT
1	Final Exam	3	40	3
Grand Total			100	120h

L: Lecture, T: Tutorial, P: Practical, O: Others

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Special requirement to deliver the course (e.g: software, nursery, computer lab, simulation room):

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Learning resources:

1)	Paul H. Wright (1996) Highway Engineering 6th Edition.
2)	Roger L. Brockenbrough & Kenneth J. (1996) Highway Engineering Handbook.
3)	David Croney et. Al (1997) Design and Performance of Road Pavements, 3rd Edition.
4)	Roberts, Khandal, Brown, Lee and Kennedy (1996) Hot Mix Asphalt Mterials, Mixture Design and Construction.

Academic honesty and plagiarism: (Below is just a sample)

<p>Assignments are individual tasks and NOT group activities (UNLESS EXPLICITLY INDICATED AS GROUP ACTIVITIES) Copying of work (texts, simulation results etc.) from other students/groups or from other sources is not allowed. Brief quotations are allowed and then only if indicated as such. Existing texts should be reformulated with your own words used to explain what you have read. It is not acceptable to retype existing texts and just acknowledge the source as a reference. Be warned: students who submit copied work will obtain a mark of zero for the assignment and disciplinary steps may be taken by the Faculty. It is also unacceptable to do somebody else's work, to lend your work to them or to make your work available to them to copy.</p>

Other additional information (Course policy, any specific instruction etc.):

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