

COURSE OUTLINE FRSB 2403 - WS

UTM Razak School of Engineering and Advanced Technology						Page: 1 of 3		
1.	Name of Course / COURSE : Work Standardization							
2.	Course Code : FRSB 2403							
3.	Name(s) of academic staff: Prof. Madya Dr Mat Rebi bin Abdul Rani Tel: 07-5534734 Room : C25-322 Email: matrebi@fkm.utm.my							
4.	Rationale for the inclusion of the course in the programme Work measurement plays a vital role in improving quality and enhancing productivity.							
5.	Semester and Year offered: Semester 3, Year 2							
6.	Total Student Learning Time (SLT)							
	Total Student Learning Time (SLT)		Face to Face			Independent Learning		Total Guided and Independent Learning
	L=Lecture T=Tutorial P=Practical O=Others)Presentation, Test, Quiz)		L 13	T	P/SCL 4	O 4	LS 39 Self -Study 60	120
7.	Credit Value : 3							
8.	Prerequisite (if any):v Nil							
9.	Learning outcomes By the end of the course, students should be able to:							
	No.	Course Learning Outcome	Programme Outcome		MQA	Taxonomies (C, P, A)	Transferable Skills	Assessment Methods
	1	Explain worker-machine systems, work standardization and work measurement.	PO1, PO2		PO1, PO2	C2, P2		Test
	2	Identify different kinds of standards and explain benefits of the standards	PO3		PO6	P4	CTPS1	Test
	3	Apply relevant work standardization techniques and suggest work measurement to improve standards.	PO5		PO4	A2	TS1	Presentation PMA
	4	Present work standards and work measurement relevant to be utilized at workplace	PO7		PO7	A2	LL1, LL2	PMA

10.	Transferable Skills: Skills and how they are developed and assessed, project and practical experience and Internship																																			
	<table><tr><td>Transferable Skills</td><td>How they are developed</td><td colspan="4">Assessment</td></tr><tr><td>Critical Thinking</td><td>Developed through guided response and discussion</td><td colspan="4">Assessed through test and PMA</td></tr><tr><td>Team Work</td><td>Developed through group discussion and presentation</td><td colspan="4">Assessed through PMA and group based presentation</td></tr><tr><td>Life Long Learning</td><td>Developed through lit search, report, PMA</td><td colspan="4">Assessed through PMA</td></tr></table>						Transferable Skills	How they are developed	Assessment				Critical Thinking	Developed through guided response and discussion	Assessed through test and PMA				Team Work	Developed through group discussion and presentation	Assessed through PMA and group based presentation				Life Long Learning	Developed through lit search, report, PMA	Assessed through PMA									
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11.	Teaching-learning and assessment strategy <u>Teaching-learning strategy</u> Lectures, group discussions, presentations <u>Assessment strategy</u> Tests, Post Course / Course Assignment (PMA)																																			
12.	Synopsis: This course integrates both the manual components and the cognitive aspects of work . Motion and time study , human factors and ergonomics to produce precise work sequence and to form standard inventory, including units in machines required to keep the manufacturing / service process operating smoothly and efficiently.. The importance of ergonomics and work design as part of methods engineering is emphasized not only to increase productivity, but also to improve worker health and safety, and thus, company bottom-line costs. Topics covered: Work standardization, work measurement and standardization processes; participant involvement.Waste identification, Method Analysis. Work standardization Techniques: Time Study, calculating the standard time for manufacturing tasks. Productivity analysis. Work Methods Improvement. Work sampling and labor reporting issues. Product improvement ergonomics, incentive systems. Work Management, case studies including ones showing applications with the service industry.																																			
13.	Mode of Delivery Lecturing, Tutoring, Group Discussion and Case Study																																			
14.	Assessment Methods and Types <table><tr><td>No</td><td>Assessment</td><td>Number</td><td>% each</td><td>% total</td><td>Hour</td></tr><tr><td>1.</td><td>Presentation (Group)</td><td>1</td><td>20</td><td>20</td><td>2 hr</td></tr><tr><td>2.</td><td>Test (Individual)</td><td>2</td><td>15</td><td>30</td><td>1 hr/ test</td></tr><tr><td>3.</td><td>Post course Assignment (PMA)</td><td></td><td>50</td><td>50</td><td></td></tr><tr><td></td><td>TOTAL</td><td></td><td></td><td>100</td><td></td></tr></table>						No	Assessment	Number	% each	% total	Hour	1.	Presentation (Group)	1	20	20	2 hr	2.	Test (Individual)	2	15	30	1 hr/ test	3.	Post course Assignment (PMA)		50	50			TOTAL			100	
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15.	Mapping of the course to the Programme Aims Course Learning Outcomes (CLO) are shown in item 9 above. Refer Programme Educational Outcomes (PEO) in Appendix III. Key: PO 1,2,3 = PEO 1; PO 4 and PO5 = PEO 2 ; PO6 = PEO 3; PO7and PO8 = PEO 4 <table><tr><td>CLO</td><td>Programme Education Outcomes</td></tr><tr><td>CLO 1</td><td>PEO 1</td></tr><tr><td>CLO 2</td><td>PEO 1</td></tr><tr><td>CLO 3</td><td>PEO 2</td></tr><tr><td>CLO 4</td><td>PEO 4</td></tr></table>						CLO	Programme Education Outcomes	CLO 1	PEO 1	CLO 2	PEO 1	CLO 3	PEO 2	CLO 4	PEO 4																				
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16.	Mapping of the course to the Programme Learning Outcomes Map PO with CLO (Refer Appendix 1B,1C, 1E, 1F)																																			

17.	Content outline of the course and the SLT per topic						
	Lecture	Topic	Student Learning Time (SLT)				
			L	T	P	O	Total Guided and Independent Learning
	1	Introduction: Worker-machine systems. Ergonomics and Human Factors in the Workplace.	0.5		0.5		9
	2	Different kinds of standards and benefits: Safety, compliance, promoting inter-operationability, competition, safeguard environment. Definition of work standardization and work measurement	0.5				10
	3	Standardization processes and participant involvement.	1		0.5		10
	4	Case study: Waste identification. Development of Standard Operating Procedure (SOP).	1			2	
	5	Method Analysis: Methods of time measurement: Developing a better method. Methods and movement at work place. Defining, installing and monitoring of methods.	2				10
	6	Work Methods Improvement	1.5		0.5		
	7	Work Standardisation Techniques: Kanban, Kaizen, Lean Manufacturing. Use of Work Measurement.	1.5		0.5		10
		Test				1	
	8	Time Study and Work Analysis: Predetermined motion time systems, standard data systems. Calculating the standard time for manufacturing tasks	1		1		10
	9	Work sampling and labor reporting issues	1.5		1		10
	10	Product Improvement: Ergonomics, incentive systems.	1				
		Test				1	
	11	Work Management and Application	1				
	12	PMA Discussion and analysis	0.5				30
	Total		13		4	4	99
	Total SLT		21 + 99 = 120				
	Subject Credit: 3						
	18.	Main references supporting the course 1. Andris Freivalds , Benjamin W. Niebel (2009) Niebel's methods, standards, and work design, McGraw-Hill Higher Education. 2. Mikell P. Groover (2007) Work systems and the methods, measurement, and management of work, Pearson Prentice Hall 3. Benjamin W. Niebel , Andris Freivalds , (2003) Methods, standards, and work design, McGraw-Hill 4. Lawrence S. Aft (2000) Work Measurement & Methods Improvement, John Wiley & Sons Inc , ISBN: 0471370894					
19.	Other additional information: Nil						

COURSE OUTLINE

Name of COURSE

Work Standardization

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Synopsis

This COURSE integrates both the manual components and the cognitive aspects of work. Motion and time study, human factors and ergonomics to produce precise work sequence and to form standard inventory, including units in machines required to keep the manufacturing / service process operating smoothly and efficiently.. The importance of ergonomics and work design as part of methods engineering is emphasized not only to increase productivity, but also to improve worker health and safety, and thus, company bottom-line costs. Topics covered: Work standardization, work measurement and standardization processes; participant involvement. Waste identification, Method Analysis. Work standardization Techniques: Time Study, calculating the standard time for manufacturing tasks. Productivity analysis. Work Methods Improvement. Work sampling and labor reporting issues. Product improvement ergonomics, incentive systems. Work Management, case studies including ones showing applications with the service industry.

Main references supporting the course

1. [Andris Freivalds](#), [Benjamin W. Niebel](#) (2009) Niebel's methods, standards, and work design, McGraw-Hill Higher Education.
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