COURSE OUTLINE

Department : Engineering **Faculty:** UTM Razak School of Engineering and Advanced Technology	**Page** : 1 -5
Course Code: MRSE 2573 **Course Name:** Integrated Occupational Safety, Health and Environment Management **Total Lecture Hours:** 42 hours	**Semester:** **Academic Session:**

Lecturer	:	Dr Shamsul Sarip , Dr Sa'ardin Abdul Aziz
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Synopsis :

Organizations need to consider not just the safety aspects of their operations, but also their effect on the environment. An integrated occupational safety, health and environment system can provide a framework to the organization's overall structure that addresses the immediate and long-term impact of company's products, services, and processes on the employees. and the environment. Such a framework provides order and consistency in organizational methodologies by allocating resources, assigning responsibilities and continually evaluating performance, practices, procedures and processes.

This Course provides an overview of occupational safety, health and environment knowledge and techniques to prevent incident. Identification of workplace hazards, risk assessment and developing counter measures are the first step towards incident prevention program. By ensuring that there is no risk to employees, process equipment and the environment, optimum performance can be achieved. Knowledge in rules and regulations can ensure that full compliance can be met.

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LEARNING OUTCOMES

By the end of the course, students should be able to:

No.	Course Learning Outcome	Programme Outcome	Taxonomies and Soft-Skills	Assessment Methods
1.	**Demonstrate** the importance of integrated occupational safety and health and environment legislation and practices.	PO2	C3 CTPS1,3,5	Case study, PMA
2.	**Apply** the principles and techniques of OSHE Management, including OSHE Performance, hazard identification, risk assessment and control (HIRARC).	PO2	C3 *CTPS1,3,5*	Case study, test, PMA
3.	**Analyze** strategies and solve problems in OSHE.	PO2	C4 *CTPS1,3,5*	Case study, test, PMA
4.	**Adhere** to social, moral, ethical and OSHE standards in decisions.	PO4	A4 *EM2*	Case study, PMA
5.	Search for and **apply** new knowledge and information beyond programme coverage.	PO5	A3 *LL1*	Case study, PMA

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STUDENT LEARNING TIME (SLT)

Teaching and Learning Activities	**Student Learning Time (hours)**
1. Face-to-Face Learning	
a. Lecturer-Centered Learning i. Lecture	25
b. Student-Centered Learning (SCL) i. Laboratory/Tutorial i. Student-centered learning activities – Active Learning, Project Based Learning ii. Case / Assignment Presentation & Discussion	 13 4
2. Self-Directed Learning	
a. Non-face-to-face learning or student-centered learning (SCL) such as manual, assignment, module, e-Learning, etc.	56
b. Revision	10
c. Assessment Preparations	8
3. Formal Assessment	
a. Continuous Assessment	4
b. Final Exam	-
Total (SLT)	**120**

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TEACHING METHODOLOGY

Lectures, Discussion and Case studies,

WEEKLY SCHEDULE

Week 1	: Historical background of occupational safety and health legislations Occupational Safety and Health Act 1994 and its Regulations
Week 2	: Factory and Machinery Act 1967 and its Regulations Accidents and their effects
Week 3	: Death in the workplace Domino theory of accident causation
Week 4	: Behavioral theory of accident causation Ergonomics and work related musculo-skeletal disorder (WMSD)
Week 5	: Cumulative trauma disorder (CTD) Risk assessment in machine operations
Week 6	: Machine guarding and fencing Slip and fall prevention
Week 7	: Fall protection equipment Hazards of temperature extremes
Week 8	: Mid-Semester Break
Week 9	: Pressure hazards Electrical hazards
Week 10	: Fire hazards Industrial hygiene confined space
Week 11	: Radiation hazard Noise and vibration
Week 12	: Blood-borne pathogens in the workplace Preparing for emergencies
Week 13	: Hazard analysis prevention and safety management Environment Quality Act 1974
Week 14	: Air, water and soil pollution Hazardous waste disposal

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Week 15 : ISO 14000 Environmental Management Systems Environmental auditing

REFERENCES :

1. Goetsch, David, L. (2008). Occupational Safety and Health, 6th Edition, Pearson Prentice Hall, New Jersey.
2. Ridley, J. (1994). Safety at Work, 4th. Edition, Butterworth-Heinemann Ltd., UK.
3. Stranks, J. (1986). Health and Safety Practice, Pitman Publishing Ltd., London
4. Asfahl, R.C. (1987). Industrial Safety and Health Management, Prentice Hall, Englewood Cliffs.
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6. Factory and Machinery Act 1967 and its Regulations
7. Environmental Quality Act 1974
8. Cascio, J. ed. (1996). The ISO 14000 Handbook, CEEM Information Services, Virginia
9. Block, M.B. (1997). Implementing ISO 14001, Quality Press, Milwaukee.
10. Vesilind, P.A. and Morgan, S.M. (2004). Introduction to Environmental Engineering, 2nd Edition., Thomson Brooks/Cole, Belmont, CA
11. Speight, J.G. and Lee, S. (2002). Environmental Technology Handbook, Taylor and Francis, Levittown, PA.
12. Weiner, R.F. and Matthews, R.A. (2003). Environmental Engineering, 4th Edition, Butterworth Heinemann, New York.

GRADING:

No.	Assessment	Number	% each	% total
1.	Case Study, Group Assignments	2	10 %	20 %
2.	Test, Individual Assignment	2	15 %	30 %
3.	Final Post Module Assessment	1	50%	50%
	Overall Total			**100%**