COURSE OUTLINE

Department & Faculty: Department of Science and Mathematics Education, Faculty of Education UTM	Page : 1 of 4
Course Code: MPS1163: Epistemological, social and ethical issues in Science and Technology(S&T) Total Lecture Hours: 42 hours	Semester: 2 Academic Session: 2008/2009

Lecturer : Assoc. Prof. Dr. Seth Sulaiman

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Synopsis : This course is intended to enhance students' understanding on scientific method and processes. Brief history and philosophy of science and technology(S&T). Various definitions of science and technology and their social implications. Awareness on the adverse consequences of S&T and individual role to minimize their effects on the environment. Relationships between science, technology and society. Development of scientific skills, controversial issues in science and technology and decision making. Scientific and technological literacy.

LEARNING OUTCOMES

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

No.	Course Learning Outcome	Programme Learning Outcome(s) Addressed	Assessment Methods
1.	understand the various definitions of science and technology and their implications.	P1, P2	WA
2.	describe scientific method and its processes and scientific skills.	P1, P2	WA
3.	describe the limitations of science and technology in an attempt to solve human problem.	P1, P2, P3	WA
4.	Interpret knowledge on science- or technology-related social issues.	P3, P6,P7 LO1,LO2,LO3,	PR, WA
5.	analyse various concepts of scientific literacy and its .operational definitions.	P2, P3,P5, P6 LO1,LO2,LO3	PR, WA
6.	Evaluate awareness on the individual and community's role in protecting the environment	All -P1 to P7 LO1,LO2,LO3	Report of Projek Work [WA-written assignment;PR-project work]

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STUDENT LEARNING TIME

Teaching and Learning Activities	**Student Learning Time (hours)**
1. Lecture	42
2. Independent Study - self learning - information search - library search - reading - group discussion	35
3. Project (4X) - information search - library search - Report Writing	34
4. Individual presentations	3
5. Group Presentations	3
6. Exam	3
Total	120

TEACHING METHODOLOGY

Lecture, Demonstration, and Discussion, Co-operative Learning, Independent Study, group discussion and library search.

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WEEKLY SCHEDULE

Week 1	:	Diverse definitions of science and its interrelationships with technology.
Week 2	:	Historical perspectives: Evolution of science and technology and its influence on the development of school curriculum.
Week 3	:	Types of scientific knowledge and its characteristics as an acquired knowledge in contrast with revealed knowledge.
Week 4	:	Scientific method and processes. Discussion on individual assignment..
		MID-TERM BREAK
Week 5	:	Scientific Skills
Week 6	:	Interrelationship between science, technology and society.
Week 7	:	Model of Science, Technology and Society curriculum
Week 8	:	Ethics and values in (S&T). Discussion on group project work.
Week 9	:	Social issues related to S&T- Health, Environment and Technology.
Week 10	:	Controversial issues in S&T.
Week 11	:	Scientific literacy and its operational definitions.
Week 12	:	Special discussion on group project work.
Week 13	:	Library work on issue(s) selected for the project work
Week 14	:	Presentations of group project work.
Week 15	:	Study week
Week 16	:	Examination.

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GRADING:

(i) Assignment (20 %)- Generally this will consist of written assignment on individual basis.

(ii) Group Project (40%)- Students assigned in groups will conduct short study/or survey on a small group of selected community seeking the latter's views on related social and/or ethical issues.

(iii) Final Exam (40%)- This will consist of essay questions which evaluates students' understanding on Epistemological, Social and Ethical Issues in Science and Technology.

EVALUATION	**PERCENTAGE (%)**
Individual Assignment	20
Group Project work	40
Final Examination	40
TOTAL	**100**