UNIVERSITI TEKNOLOGI MARA

SCE523: SCIENCE, TECHNOLOGY AND SOCIETY

Course Name (English)	SCIENCE, TECHNOLOGY AND SOCIETY APPROVED
Course Code	SCE523

MQF Credit	3

Course Description	Science, technology and society education, originates from the science technology and science (STS) movement in science education. This is an outlook on science education that current emphasizes on the STEM movement, Industry 4.0 and Society 5.0 in teaching of scientific and technological developments in their cultural, economic, social and political contexts. In this view of science education, students are encouraged to engage in issues pertaining to the impact of science on everyday life and make responsible decisions about how to address such issues. Students learn in the meaningful way about big ideas in science (Biology/ Physics/ Chemistry/ Environmental/ Geology/ Space) in the context of issues of current social interest as well as student interest. This course offers countless benefits, yet it also presents new challenges. In this interdisciplinary course, we carry out historical analysis and examine futuristic perspectives of the nature and role of science and technology in the society. Also, we identify the socio-cultural and politico-economic factors affecting the development of science and technology with the emphasis on how science, technology, and society shape society and humankind.

Transferable Skills	Science and Technology Knowledge Social Responsibilities Managerial Attribute Innovative

Teaching Methodologies	Lectures, Blended Learning, Discussion, Presentation, Project-based Learning

CLO	CLO1 Explain the character and functions of science and technology and their inter-relationships with society (C4). CLO2 Justify the impacts, advantages, and disadvantages of the developments in science and technology to the society (A3). CLO3 Demonstrate self-determination and confidence to make informed-decisions and to take responsible action to address issues arising from the impact of science on their daily lives (A3).

Pre-Requisite Courses	No course recommendations

Topics
1. 1) TRENDS IN THE SCIENCE, TECHNOLOGY, AND SOCIETY 1.1) 1.1 Science and Technology in Pre-Colonial Asian Societies 1.2) 1.2 Science, Technology, and the Industrial Revolution 1.3) 1.3 Science, Technology, and Industrialization in the 19th Century 1.4) 1.4 Science, Technology, and Society in the 20th Century
2. 2) TOPICS ON HIGH TECHNOLOGIES 2.1) 2.1 Environmental and Biodiversity Issues 2.2) 2.1.1 Pollution and Impacts of Science Technology on the environment 2.3) 2.1.2 Eco-Services, Economic and Business Aspects of Science and Technology 2.4) 2.1.3 Green Technology and Sustainability 2.5) 2.2 Agricultural, Population,Health and Diseases 2.6) 2.2.1 Genetic Engineering and Biotechnology 2.7) 2.2.2 Advances in Medical and Agricultural Technologies 2.8) 2.2.3 Impacts of Science and Technology on Human Population 2.9) 2.3 Information and Telecomunication Technology 2.10) 2.3.1 Computers and Gadgets 2.11) 2.3.2 Internet

2.12) 2.4 Automation, Robotics, and Other Advanced Technologies 2.13) 2.4.1 Micromachines and Nanotechnology 2.14) 2.4.2 Advanced in Construction, Manufacturing, Transportation and Space Technologies 2.15) 2.4.3 Impact of Science and Technology on War
3. 3) THE SOCIETAL ASPECTS OF SCIENCE AND TECHNOLOGY 3.1) 3.1 The Sociological Aspects of Science and Technology 3.2) 3.2 The Dynamics of Scientific and Technological Change
4. 4) THE ETHICAL ASPECTS OF SCIENCE AND TECHNOLOGY 4.1) 4.1 Bioethics 4.2) 4.2 Technoethics

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Group Project	The Innovation of STS project by group and individual reflection towards the project innovation that require managerial attribute	40%	CLO3
Individual Project	Group presentation on the specific area in science technology and innovation of STS project by group that benefit the society that support social responsibility attribute	30%	CLO2
Presentation	Group presentation on the specific area in science technology and society and individual reflection towards the presentation with emphasis knowledge attribute	30%	CLO1

Reading List	**Recommended Text**	• **Arnaldi, S. & Bianchi, L 2016, *Responsibility in Science and Technology: Elements of a Social Theory*, Springer VS**
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	