DEPARTMENT OF TECHNOLGY EDUCATION,IER
UNIVERSITY OF THE PUNJAB, LAHORE-PAKISTAN
Course Outline

Programme	BS Technology Education	Course Code	323	Credit Hours	3
Course Title	Science, Technology, and Society				

Course Introduction
This course provides an introduction to the interrelationship between science, technology, and society. It explores how scientific discoveries and technological innovations influence society and, conversely, how societal needs and values shape the development of science and technology. The course aims to develop critical thinking and analytical skills by examining historical and contemporary case studies.

Learning Outcomes
On the completion of the course, the students will: 1. Understand the basic concepts and interconnections between science, technology, and society. 2. Analyze the impact of scientific and technological advancements on social structures and cultural norms. 3. Critically assess the ethical implications of scientific research and technological developments. 4. Communicate informed perspectives on the role of science and technology in addressing societal challenges.

Course Content		Assignments/Readings
Week 1	Introduction to Science, Technology, and Society **Unit 1.1**: Definitions and Scope of Science, Technology, and Society **Unit 1.2**: Historical Perspectives on Science and Technology	Reflective essay on personal views about the role of science and technology in society
Week 2	The Scientific Method and Technological Innovation **Unit 2.1**: The Scientific Method **Unit 2.2**: Technological Innovation Processes	Analyze a recent scientific study and its methodology
Week 3	Science and Technology in Ancient Civilizations **Unit 3.1**: Contributions of Ancient Civilizations to Science and Technology **Unit 3.2**: Comparative Analysis of Ancient and Modern Technologies	Group presentation on technological advancements in a chosen ancient civilization

Week 4	The Scientific Revolution and the Enlightenment **Unit 4.1**: Key Figures and Discoveries of the Scientific Revolution	Research paper on a prominent scientist from the Scientific Revolution
	Unit 4.2: Impact of the Enlightenment on Science and Society	
Week 5	The Industrial Revolution **Unit 5.1**: Technological Innovations of the Industrial Revolution	Timeline creation of key technological innovations during the Industrial Revolution
	Unit 5.2: Social and Economic Impacts of the Industrial Revolution	
Week 6	20th Century Technological Advancements **Unit 6.1**: Major Technological Advancements of the 20th Century	Case study on a 20th-century technological breakthrough
	Unit 6.2: World Wars and Technology	
Week 7	Ethical Issues in Scientific Research **Unit 7.1**: Ethical Principles in Scientific Research	Debate on a controversial scientific topic (e.g., cloning, stem cell research)
	Unit 7.2: Case Studies on Ethical Dilemmas in Science	
Week 8	Technology and Society: Ethical Considerations **Unit 8.1**: Ethical Implications of Technological Advancements	Essay on the ethical challenges of artificial intelligence
	Unit 8.2: Privacy, Security, and AI	
Week 9	The Digital Revolution **Unit 9.1**: Impact of Digital Technologies on Society	Analysis of the impact of social media on modern communication
	Unit 9.2: The Rise of the Internet and Social Media	
Week 10	Globalization and Technology **Unit 10.1**: Technology's Role in Globalization	Comparative analysis of technological impacts on different cultures
	Unit 10.2: Cultural and Economic Impacts of Technology	
Week 11	Science and Technology Policy **Unit 11.1**: Role of Government in Science and Technology	Policy brief on a current issue in science and technology policy
	Unit 11.2: Policy-Making Processes	

Week 12	Public Understanding of Science and Technology **Unit 12.1**: Science Communication	Survey and analyze public perceptions of a scientific or technological issue
	Unit 12.2: Public Perceptions of Science and Technology	
Week 13	**Unit 13.1**: Innovations on the Horizon	Predict and discuss the societal impacts of a future technology
	Unit 13.2: Potential Societal Impacts of Emerging Technologies	
Week 14	Science Fiction and Technological Imagination **Unit 14.1**: Role of Science Fiction in Shaping Technological Imagination	Creative writing piece envisioning a future society shaped by a specific technology
	Unit 14.2: Case Studies from Literature and Film	
Week 15	Review of Key Concepts and Themes **Unit 15.1**: Recap of Major Themes and Discussions	Group presentation summarizing key learning from the course
	Unit 15.2: Student Presentations on Course Projects	
Week 16	Final Exam and Course Wrap-Up • **Unit 16.1**: Comprehensive Final Exam Covering All Course Material	Final exam
	Unit 16.2: Course Feedback and Reflections	

Textbooks and Reading Material

1. **Textbooks**
   Science, Technology, and Society: A Sociological Approach by Wenda K. Bauchspies, Jennifer Croissant, and Sal Restivo
2. **Suggested Readings**
   Technology and Society: Building Our Sociotechnical Future by Deborah G. Johnson and Jameson M. Wetmore

Teaching Learning Strategies

1. **Lectures:** To introduce and explain key concepts and theories.
2. **Hands-on Labs:** To provide practical experience with robotics components and programming.
3. **Assignments and Projects:** To reinforce learning and encourage application of concepts in real-world scenarios.
4. **Group Discussions:** To facilitate peer learning and collaborative problem-solving.

Assessment			
Sr. No.	**Elements**	**Weight age**	**Details**
1.	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
2.	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
3.	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.