



GEC 003 – SCIENCE, TECHNOLOGY AND SOCIETY

UNIVERSITY VISION

A leading University in advancing scholarly innovation, multi-cultural convergence, and responsive public service in a borderless Region.

UNIVERSITY MISSION

The University shall primarily provide advanced instruction and professional training in science and technology, agriculture, fisheries, education and other related fields of study. It shall also undertake research and extension services, and provide progressive leadership in its areas of specialization.

UNIVERSITY STRATEGIC GOALS

- a. Deliver quality service to stakeholders to address current and future needs in instruction, research, extension, and production
- b. Observe strict implementation of the laws as well as the policies and regulations of the University
- c. Acquire with urgency state-of-the-art resources for its service areas
- d. Bolster the relationship of the University with its local and international customers and partners
- e. Leverage the qualifications and competences in personnel action and staffing
- f. Evaluate the efficiency and responsiveness of the University systems and processes

INSTITUTIONAL OUTCOMES (IO)

- a. Enhance competency development, commitment, professionalism, unity and true spirit of service for public accountability, transparency and delivery of quality services
- b. Provide relevant programs and professional trainings that will respond to the development needs of the region
- c. Strengthen local and international collaborations and partnerships for borderless programs
- d. Develop a research culture among faculty and students
- e. Develop and promote environmentally-sound and market-driven knowledge and technologies at par with international standards
- f. Promote research-based information and technologies for sustainable development
- g. Enhance resource generation and mobilization to sustain financial viability of the university

PROGRAM OUTCOMES (PO) COMMON TO ALL PROGRAMS AND ITS RELATIONSHIPS TO INSTITUTIONAL OUTCOMES

A graduate of Sultan Kudarat State University can:	INSTITUTIONAL OUTCOMES (IO)						
	a	b	c	d	e	f	g
a. discuss the current developments and advancements in the specific field of practice;	✓	✓				✓	
b. demonstrate independently the 21 st century competencies and skills;	✓	✓		✓		✓	
c. work collaboratively in multi-disciplinary and multi-cultural groups;	✓		✓	✓	✓		
d. exhibit professional, social and ethical accountability;	✓	✓	✓	✓	✓		
e. preserve Filipino historical and cultural heritage;	✓	✓	✓	✓	✓		
f. generate new knowledge through data-driven research and development projects; and				✓	✓	✓	✓
g. participate actively in the national, regional and local development plans.	✓	✓	✓	✓	✓	✓	✓

1	COURSE CODE	GEC 003
2	COURSE TITLE	Science, Technology and Society
3	PREREQUISITE	None
4	CREDITS	3 units

5 COURSE DESCRIPTION

This course deals with the nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions, and application of mathematical tools in daily life. This course begins with an introduction to the nature of mathematics as an exploration of patterns (in nature and the environment) and as an application of inductive and deductive reasoning. This course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present day living, such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly.

6 COURSE LEARNING OUTCOMES (CLO) AND ITS RELATIONSHIPS TO PROGRAM OUTCOMES

Course Learning Outcomes (CLO)	Program Outcomes						
	a	b	c	d	e	f	g
At the end of the course, a student can:							
a. Explain fundamental concepts, historical antecedents, and philosophical perspectives of science, technology, and society in relation to local and global developments.	✓	✓	✓	✓	✓	✓	✓
b. Analyze the social, cultural, ethical, and environmental implications of science and technology, applying 21st-century competencies in problem-solving.	✓	✓	✓	✓	✓	✓	✓
c. Collaborate with peers from diverse backgrounds in exploring and presenting solutions to contemporary issues in science and technology	✓	✓	✓	✓	✓	✓	✓
d. Demonstrate professional, social, and ethical accountability in evaluating and proposing technological applications for sustainable development	✓	✓	✓	✓	✓	✓	✓
e. Recognize and promote Filipino historical and cultural heritage by relating it to the evolution of science and technology.	✓	✓	✓	✓	✓	✓	✓
f. Utilize research-based evidence to support claims, arguments, and innovations in addressing science and technology issues.	✓	✓	✓	✓	✓	✓	✓
g. Propose and advocate science- and technology-based initiatives that align with national, regional, and local development goals	✓	✓	✓	✓	✓	✓	✓

7 COURSE CONTENTS

WEEK	CONTENT	INTENDED LEARNING OUTCOMES (ILOs)	TEACHING AND LEARNING ACTIVITIES (TLA)	OUTCOMES-BASED ASSESSMENT (OBA)	COURSE LEARNING OUTCOMES (CLOs)
1	Course Orientation <i>SKSU VMGO, Classroom Policies, Course Overview, Course Requirements, Grading System</i>	At the end of the week, the teacher (PST) can: a. discuss the University's VMGO, classroom policies, course overview, requirements and grading system	Discuss the VMGO of the University, the classroom policies, scope of the course, course requirements and grading system		
2	General concepts and Historical Development a. Introduction to Science b. Technology, and Society b. Historical Antecedents of Science and Technology c. Intellectual Revolution of Society	a. Define and explain the relationship between science, technology, and society. b. Identify major scientific and technological developments across historical periods. c. Analyze key intellectual revolutions and their impact on human thought. d. Evaluate how S&T contributes to Philippine nation-building.	a. Lecture; group brainstorming; concept mapping. b. Timeline creation; documentary viewing; group discussion. c. Reading of primary sources; Socratic questioning; mini-lecture d. Case study analysis; class debate.	a. Concept map illustrating STS relationships. b. Group-created illustrated historical timeline c. Reflection paper on a chosen intellectual revolution. d. Position paper on the role of Science and Technology in the	

	d. Science and Technology and Nation building			Philippines development	
3		Midterm Examination			
4	Science, Technology, and Society and the Human Condition a. Technology as the way of revealing b. Human flourishing in Progress and De-development c. The good Life d. When Technology and Humanity cross e. Why the future does not need us	a. Explain Heidegger's concept of technology as a mode of revealing. b. Differentiate progress and de-development in relation to human flourishing. c. Discuss philosophical views on the "good life" and its relationship to technology. d. Examine ethical dilemmas arising from tech-human interactions. e. Critically assess argument about existential risks from advance technology describe.	a. Guided reading; think-pair-share; lecture. b. Group activity analyzing real-life cases; interactive lecture. c. Values clarification exercise; reflective dialogue. d. Role-play; peer feedback; guided discussion. e. Reading discussion; structured debate	a. Short essay applying Heidegger's concept to a modern tech example. b. Group presentation of a case showing both progress and de-development. c. Personal essay defining "good life" with technology implications. d. Written analysis of an ethical tech dilemma. e. Critical review paper of the article	
5	Specific Issues in Science, Technology, and Society a. information age b. Biodiversity and a healthy Society c. Genetically modified Organism (GMOs) d. Nanotechnology e. Climates Change and Environmental Awareness	a. Describe characteristics, benefits, and challenges of the information age. b. Explain biodiversity's role in sustaining healthy societies. c. Discuss scientific principles, applications, and controversies of GMOs. d. Identify applications, benefits, and risks of nanotechnology e. Analyze causes, effects, and mitigation	a. Multimedia presentation; guided discussion. b. Field observation (virtual or in-person); guest lecture. c. Research; structured debate. d. Video lecture; case study analysis. e. Lecture; environmental campaign	a. Infographic on the features of the information age. b. Reflection report from observation or lecture. c. Position paper on GMOs in agriculture or health. d. Report on a nanotech innovation and its risks. e. Group proposal for climate change mitigation	
6	Final Project: Technology in My Community – Past, Present, and Future - Project Guidelines & Consultation - Presentation of Project Output	By the end of the activity, students will be able to: 1. Analyze the historical development of a technology in their community. 2. Evaluate its present-day role and impact. 3. Predict possible future developments or improvements.	-Teacher discusses project guidelines. -Students conduct research and interviews. -Students prepare a written report and visual presentation. - Presentation of output to class	Written Report (2–3 pages) covering historical background, current use, impact, and future outlook of chosen technology. Visual Presentation (Poster or 3–5 slide PPT). Rubric-based grading: Content Accuracy, Organization, Visual Appeal, Relevance to STS Concepts, Presentation Skills (each scored 1–4).	
7		Final Examination			

Total No. of Hours : 54

8 COURSE REQUIREMENTS AND COURSE POLICIES

Each student is required to:

COURSE REQUIREMENTS

- 1. Class Participation and Recitation**
 - a. Active involvement in discussions, group activities, and recitations.
 - b. Preparedness in assigned readings prior to class.
- 2. Quizzes**
 - a. Short quizzes given after selected topics to assess comprehension.
 - b. May be in written, oral, or online format.
- 3. Midterm Examination**
 - a. Covers topics for midterm
 - b. Combination of objective, essay, and application-type questions.
- 4. Assignments and Reflection Papers**
 - a. Individual and group outputs such as essays, reaction papers, or concept maps based on assigned readings.
- 5. Group Project / Case Study Presentation**
 - a. Analysis of a real-world STS-related issue with proposed solutions.
 - b. Includes written report and oral presentation.
- 6. Final Examination**
 - a. Covers topics for final
 - b. Integrates concepts and applications learned throughout the course.
- 7. Portfolio**
 - a. Compilation of key learnings, research outputs, and personal reflections on STS topics.

COURSE POLICIES

1. Attendance Policy

- Students must attend at least **95%** of total class hours to receive credit for the course.
- Arriving **15 minutes late** will be considered **half-day attendance**; arriving **30 minutes late or more** is **absent**.
- Excused absences require valid documentation (medical certificate, official school activity memo, etc.).

2. Academic Integrity

- Cheating in any form during examinations or activities will result in **zero** for the activity and may warrant disciplinary action.
- Plagiarism in assignments and reports will result in an automatic failing mark for the requirement.

3. Submission of Requirements

- Deadlines are **strictly observed**. Late submissions will be penalized **10% per day** unless justified with valid reasons and approved by the instructor.
- All written outputs must follow the **APA 7th Edition** referencing style unless otherwise specified.

4. Classroom Etiquette

- Respectful behavior is expected at all times toward classmates and the instructor.
- Mobile phones and gadgets must be on silent mode during class hours; use them only for academic purposes.

5. Use of Technology:

- Cell phones should be turned off while the session is in progress. Using laptops, notebook PCs, smart phones, and tablets shall be allowed only when needed.

9 GRADING SYSTEM AND RUBRICS FOR GRADING

GRADING SYSTEM	Midterm Grade	Final Term Grade	FINAL GRADE
	Midterm Examination 50%	Final Term Examination 50%	Midterm Grade 50%
	Attendance/ Class Participation 10%	Attendance/Class Participation 10%	Final Term Grade 50%
	Quizzes 15%	Quizzes 15%	
	Project 15%	Project 15%	
	Assignment 10%	Assignment 10%	
	TOTAL 100%	TOTAL 100%	TOTAL 100%

RUBRIC FOR CLASS PARTICIPATION / RECITATION

CRITERION	UNSATISFACTORY (1)	FAIR (2)	GOOD (3)	EXCELLENT (4)
Engagement	▪ Rarely participates; inattentive.	▪ Participates occasionally; minimal engagement.	▪ Participates regularly with relevant points.	▪ Actively engages and stimulates discussion.
Preparation	No evidence of reading/understanding.	▪ Minimal preparation; basic awareness of topic.	▪ Prepared with some supporting ideas.	▪ Fully prepared with deep insights.
Respect & Collaboration	▪ Disruptive or disrespectful.	▪ Sometimes respectful; occasional interruptions.	▪ Respectful and cooperative.	▪ Always respectful, encouraging inclusive discussion.

RUBRICS FOR REFLECTION PAPER

CRITERION	UNSATISFACTORY (1)	FAIR (2)	GOOD (3)	EXCELLENT (4)
Content Understanding	▪ Shows little understanding of topic.	▪ Shows basic understanding; lacks depth.	▪ Clear understanding with some analysis.	▪ Deep understanding with insightful analysis.
Critical Thinking	No evidence of reflection or analysis.	▪ Minimal reflection; descriptive.	▪ Reflective and analytical in parts.	▪ Strong, original reflection with critical insights.
Organization & Coherence	▪ Disorganized; hard to follow.	▪ Some organization but lacks flow.	▪ Well-organized with clear ideas.	▪ Excellent flow; logical and persuasive structure.
Mechanics	▪ Frequent grammar/spelling errors.	▪ Some grammar/spelling errors.	▪ Few minor errors.	▪ Error-free and polished writing.

RUBRICS FOR THE CASE STUDY ANALYSIS

CRITERION	UNSATISFACTORY (1)	FAIR (2)	GOOD (3)	EXCELLENT (4)
Problem Identification	▪ Fails to identify core issues.	▪ Identifies issues superficially.	▪ Identifies main issues clearly.	▪ Identifies and prioritizes issues insightfully.
Application of Concepts	No relevant concepts applied.	▪ Limited application of STS concepts.	▪ Applies concepts with some accuracy.	▪ Applies concepts effectively and creatively.
Evidence & Support	▪ Lacks evidence; unsupported claims.	▪ Minimal evidence provided.	▪ Relevant evidence supports points.	▪ Strong, well-chosen evidence thoroughly

				supports analysis.
Clarity of Presentation	<ul style="list-style-type: none"> ▪ Unclear and confusing. 	<ul style="list-style-type: none"> ▪ Understandable but lacks depth. 	<ul style="list-style-type: none"> ▪ Clear and logical. 	<ul style="list-style-type: none"> ▪ Exceptionally clear, engaging, and compelling.

RUBRICS FOR THE GROUP PRESENTATION

CRITERION	UNSATISFACTORY (1)	FAIR (2)	GOOD (3)	EXCELLENT (4)
Content Mastery	<ul style="list-style-type: none"> ▪ Inaccurate or incomplete information. 	<ul style="list-style-type: none"> ▪ Basic information; some inaccuracies. 	<ul style="list-style-type: none"> ▪ Accurate with good coverage. 	<ul style="list-style-type: none"> ▪ Accurate, thorough, and insightful.
Organization	Lacks logical flow.	<ul style="list-style-type: none"> ▪ Some organization but uneven. 	<ul style="list-style-type: none"> ▪ Organized with clear structure. 	<ul style="list-style-type: none"> ▪ Excellent structure; smooth transitions.
Delivery	<ul style="list-style-type: none"> ▪ Monotone, unprepared. 	<ul style="list-style-type: none"> ▪ Limited engagement and clarity. 	<ul style="list-style-type: none"> ▪ Clear and engaging delivery. 	<ul style="list-style-type: none"> ▪ Highly engaging, confident, and professional.
Teamwork	<ul style="list-style-type: none"> ▪ Poor coordination. 	<ul style="list-style-type: none"> ▪ Some cooperation but uneven work. 	<ul style="list-style-type: none"> ▪ Good collaboration. 	<ul style="list-style-type: none"> ▪ Seamless collaboration and equal contribution.

RUBRICS FOR THE RESEARCH PAPER

CRITERION	UNSATISFACTORY (1)	FAIR (2)	GOOD (3)	EXCELLENT (4)
Research Depth	<ul style="list-style-type: none"> ▪ Minimal sources; lacks depth. 	<ul style="list-style-type: none"> ▪ Limited sources; surface-level. 	<ul style="list-style-type: none"> ▪ Adequate sources; good depth. 	<ul style="list-style-type: none"> ▪ Extensive, credible, and highly relevant sources.
Analysis & Synthesis	Little analysis; mostly descriptive.	<ul style="list-style-type: none"> ▪ Some analysis; minimal synthesis. 	<ul style="list-style-type: none"> ▪ Good analysis with some synthesis. 	<ul style="list-style-type: none"> ▪ Strong synthesis with original insights.
Organization	<ul style="list-style-type: none"> ▪ Disorganized; unclear structure. 	<ul style="list-style-type: none"> ▪ Some structure but inconsistent. 	<ul style="list-style-type: none"> ▪ Clear and logical structure. 	<ul style="list-style-type: none"> ▪ Exceptionally well-organized and coherent.
Formatting & Mechanics	<ul style="list-style-type: none"> ▪ Frequent APA/style errors. 	<ul style="list-style-type: none"> ▪ Some APA/style errors. 	<ul style="list-style-type: none"> ▪ Few minor APA/style errors. 	<ul style="list-style-type: none"> ▪ Perfect APA format; flawless mechanics.

10 REFERENCES

Textbooks

- Bynum, W. F. (2012). *A little history of science*. Yale University Press.
 Floridi, L. (2014). *The fourth revolution: How the infosphere is reshaping human reality*. Oxford University Press.
 Heidegger, M. (1977). *The question concerning technology and other essays* (W. Lovitt, Trans.). Harper & Row. (Original work published 1954)
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 Kumar, D. (2016). *Science, technology, and society: A historical perspective*. PHI Learning.
 Postman, N. (1993). *Technopoly: The surrender of culture to technology*. Vintage Books.
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National Geographic Society. (2023). *Biodiversity*. <https://www.nationalgeographic.org/encyclopedia/biodiversity>
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA). (2023). *Climate change in the Philippines*. <https://www.pagasa.dost.gov.ph>

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