

## COURSE SYLLABUS

<b>Course Name</b>	<b><i>Science Technology and Society</i></b>
<b>Course Credits</b>	3 units
<b>Course Description</b>	The course deals with interactions between Science, Technology and Society and social, cultural, political and economic contexts which shape and are shaped by them; This interdisciplinary course engages students to confront the realities brought about by science and technology in society. Such realities pervade the personal, the public, and the global aspects of our living and are integral to human development. Scientific knowledge and technological development happen in the context of society with all its socio-political, cultural, economic and philosophical underpinnings at play. This course seeks to instill reflective knowledge in the students that they are able to live the good life and display the ethical decision making in the face of scientific and technological advancement.
<b>Contact Hours/Week</b>	3 hours
<b>Prerequisite</b>	<i>None</i>
<b>Course Outcomes</b>	<p><b>Knowledge</b></p> <ol style="list-style-type: none"> <li>1. Articulate the impact of science and technology on society specifically Philippine society</li> <li>2. Explain how science and technology affect the society and the environment and its role in nation building</li> <li>3. Analyze the human condition in order to deeply reflect and express philosophical ramifications that are meaningful to the students as a part of the society</li> <li>4. Define and demonstrate the impact of social media on the students' life and Philippine society in general</li> </ol> <p><b>Value</b></p> <ol style="list-style-type: none"> <li>1. Imbibe the importance of science and technology in the preservation of the environment and the development of the Filipino nation</li> <li>2. Critique human flourishing vis-à-vis the progress of science and technology such that the student may be able to define for himself/herself the meaning of the</li> <li>3. Foster the value of healthy lifestyle toward the holistic and sustainable development of society and the environment</li> </ol>

	<p><b>Skills</b></p> <ol style="list-style-type: none"><li>1. Creatively present the importance of science and to society</li><li>2. Examine shared concerns that make up the good life in order to come up with innovative and creative solutions to contemporary issues guided by ethical standards</li><li>3. Illustrate how the social media and information age impact their lives and their understanding of climate change</li></ol>
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1. Creatively present the importance of science and to society

2. Examine shared concerns that make up the good life in order to come up with innovative and creative solutions to contemporary issues guided by ethical standards

3. Illustrate how the social media and information age impact their lives and their understanding of climate change

## COURSE OUTLINE AND TIMEFRAME

Timeframe	Course Contents / Subject Matter
	<b>General Concepts and STS Historical Developments</b>
<b>Week 1</b>	General Concepts and STS Historical Developments
<b>Week 2</b>	Intellectual Revolution that Define Society
<b>Week 3-4</b>	Science and Technology and Nation Building
	<b>STS and the Human Condition</b>
<b>Week 7</b>	The Human Person Flourishing
<b>Week 8</b>	Technology As A Way Of Revealing
<b>Week 9</b>	The Good Life
<b>Week 10</b>	When Technology and Humanity Cross
<b>Week 11 – 12</b>	Why the Future Does Not Need Us
	<b>Specific Issues in STS</b>
<b>Week 13</b>	The Information Age
<b>Week 14</b>	Biodiversity and the Health Society
<b>Week 15</b>	Genetically Modified Organisms: Science, Health and Politics
<b>Week 16</b>	The Nano World
<b>Week 17</b>	The Aspect of Gene Therapy
<b>Week 18</b>	Climate Change and Environmental Awareness

### ALIGNMENT OF COURSE OUTCOMES WITH SUMMATIVE ASSESSMENT TASKS

Course Objectives	Summative Assessment Task	Details
<ol style="list-style-type: none"> <li>1. Describe the role of science and technology in the society and its contribution to nation building</li> <li>2. Explain effects of science and technology in the values formation of a person</li> <li>3. Identify the interrelatedness of society, environment and health</li> <li>4. Understand the role of the community in climate change</li> <li>5. Appreciate the advancement of science and technology as it produce products that help improve the way of living and sustainability of human needs</li> <li>6. Reinforce and evaluate students' understanding of the course content and main ideas</li> </ol>	<p>Research Paper</p> <p>Reflection Paper and Oral Presentation</p> <p>Multi- Media Presentation</p> <p>Slide Presentation</p> <p>Documentation</p> <p>Midterm and Final Examination</p>	<p>In this output, the students are required to submit a paper that presents the significant contribution of science in nation building.</p>

## LEARNING PLAN

Desired Learning Outcomes (DLO)	Course Contents / Subject Matter	Textbooks / References	Teaching and Learning Activities (TLAs)	Assessment of Tasks (ATs)	Resource Materials	Time Table
<ul style="list-style-type: none"> <li>• Discuss the interactions between Science, Technology and society throughout history</li> <li>• Discuss how scientific and technological developments affect society and the environment</li> <li>• Identify the paradigm shift in history</li> </ul>	<p>Historical Antecedents in Which Social Considerations Changed the Course of Science and Technology</p> <p>a. In the World: Ancient, Middle and Modern Ages</p> <p>b. In the Philippines</p>	<ul style="list-style-type: none"> <li>• Philosophy of Science ( Encyclopedia) Scientific Progress, Scientific Revolutions</li> <li>• Caoili, History of Science and Technology</li> <li>• Stephen Colbert’s interview with Neil Tyson <a href="https://www.youtube.com/watch">https://www.youtube.com/watch</a></li> <li>• The World’s Greatest Inventions <a href="https://www.youtube.com/watch">https://www.youtube.com/watch</a></li> <li>• Philippine Great Inventions <a href="https://www.youtube.com">https://www.youtube.com</a></li> <li>• <a href="https://explorable.com/what-is-a-paradigm">https://explorable.com/what-is-a-paradigm</a></li> <li>• <a href="http://www.history.com/topics/enlightenment/videos/mankind-the-story-of-all-of-us-scientific-revolution">http://www.history.com/topics/enlightenment/videos/mankind-the-story-of-all-of-us-scientific-revolution</a></li> <li>• Kuhn, Structure of Scientific Revolution</li> </ul>	<p>Pawtoon Presentation</p> <p>Picture Analysis</p>	<p>Quiz- Kahoot</p>	<p>Laptop</p> <p>Google meet</p> <p>Reference materials</p>	<p><b>Week 1-3</b></p>

<ul style="list-style-type: none"> <li>• Articulate ways by which society is transformed by science and technology</li> </ul>	Intellectual Revolutions That Defined Society	<ul style="list-style-type: none"> <li>• <a href="http://www.flowofhistory.com.r">http://www.flowofhistory.com.r</a> readings</li> <li>• Flowcharts/revival-west/the-age-enlightenment</li> <li>• <a href="http://hti.osu.ed/scientific-revolution/lesson-plans">http://hti.osu.ed/scientific-revolution/lesson-plans</a></li> <li>• Powerpoint presentation on the individual scholars and great works</li> </ul>	Powerpoint Presentation	Quiz Graded Activity Recitation	Laptop Google Forms	<b>Week 4</b>
<ul style="list-style-type: none"> <li>• Discuss the role of Science and Technology in Philippine nation building</li> <li>• Evaluate government policies pertaining to science and technology in terms of their contribution to nation building</li> <li>• Identify actual science and technology policies of the government and appraise their</li> </ul>	Science and Technology And Nation Building	<ul style="list-style-type: none"> <li>• Government Documents 1. NEDA, National Development Agenda: Regional Agenda</li> <li>• Filipino Great Men and Women</li> <li>• Great Filipino Inventions</li> </ul>	Small Group Activity Group Research Activities: <ul style="list-style-type: none"> <li>• Filipino Scientists: Their Lives and Achievements</li> <li>• Science Programs in the Philippines</li> </ul>	Group Project Presentation	Film	<b>Week 5-6</b>

impact on the development of the Filipino nation			<ul style="list-style-type: none"> <li>Filipino Indigenous Knowledge</li> </ul> <p>Discussion</p>			
<b>Science, Technology and Society and the Human Condition</b>						
<ul style="list-style-type: none"> <li>Analyze the human condition in order to deeply reflect and express philosophical ramifications that are meaningful to the students as a part of society</li> </ul>	The Human Person Flourishing in terms of science and technology	<p>The Question Concerning Technology by Martin Heidegger</p> <p>A Return to the Beginning by Daniel J. McNamara, in Stellar Origins, Human Ways (2011)</p>	<p><b>Discussion</b></p> <p>Group Activity</p> <ul style="list-style-type: none"> <li>Presentation of Human Interventions</li> <li>Small Discussion of Astrology</li> <li>Brainstorming on alternatives for growth and development</li> </ul>	<b>Summative Test</b>	<b>Digital Learning Resources</b>	<b>Week 7</b>
<ul style="list-style-type: none"> <li>Critique human flourishing vis-à-vis the progress of science and technology so that</li> </ul>	Technology as a Way of Revealing	<p>Movie Clip ( YouTube): The Magician's Twin: CS Lewis and the case against Scientism</p> <p>Film: Akira Kurosawa's Dreams "</p>	<p>Discussion</p> <p>Philosophical Debate</p>	<b>Reflection Paper</b>	Laptop	<b>Week 8</b>

<p>the student can define for himself/herself the meaning of good life</p>		<p>Village of the Watermills”</p> <p>Forget ‘ developing’ rich countries, it’s time to ‘de-develop’ rich countries by Jason Hickel</p> <p><a href="http://www.theguardian.com/global-development-professionals-network/2015/sep/23/developing-poor-countries-de-develop-rich-countries-sdgs">http://www.theguardian.com/global-development-professionals-network/2015/sep/23/developing-poor-countries-de-develop-rich-countries-sdgs</a></p> <p>Sustainable Development: An Evolving Paradigm for the 21<sup>st</sup> Century by Fabian Dayrit in Stellar Origins, Human Ways (2011)</p>		<p>Quiz via LMS</p>	<p>Movie clips</p>	
<ul style="list-style-type: none"> <li>Examine shared concerns that make up the good life in order to come up with innovative, creative solutions to contemporary issues guided by ethical standards</li> </ul>	<p>The Good Life</p>	<p>Book VI and Book X Nichomachean ethics of Aristotle</p> <p>The Concepts of the Public Good: A View from the Filipino Philosopher by Rolando Gripaldo in the Making of a Filipino philosopher and other Essays, 2009, National Book Store pp 82-101</p> <p>Eudaimonia and Human Flourishing in Ethics and Human Dignity by Christopher Ryan Maboloc. Manila, 2010. Rex Book Store pp. 15-23</p>	<p>Discussion</p> <p>Think – Pair-Share: Technology Advancement and good life</p>	<p>Good Life Collage (with rubric)</p>	<p>Pictures Art Materials Laptop</p>	<p><b>Week 9</b></p>



		The Sugar Film ( 2015) documentary				
<ul style="list-style-type: none"> <li>Examine human rights in order to uphold such rights in technological ethical dilemmas</li> </ul>	When Technology and Humanity Cross	<p>The ethical dilemmas of robotics  <a href="http://news.bbc.co.uk/2/hi/technology/6432307.stm">http://news.bbc.co.uk/2/hi/technology/6432307.stm</a>          Is google making us stupid? 2008, Nicholas Carr</p> <p><a href="http://www.theatlantic.com/magazine/archive/2008/07/is google making us stupid/306868/">http://www.theatlantic.com/magazine/archive/2008/07/is google making us stupid/306868/</a></p>	Reflection and Discussion	<b>Quiz</b>	<b>Laptop</b>  <b>Multimedia</b>	<b>Week 10</b>
<ul style="list-style-type: none"> <li>Evaluate contemporary human experience in order to strengthen and enlighten the human person functioning in society</li> </ul>	Why does the future not need us?	<p>Why The Future Doesn't Need Us (2000)-Bill Joy, Chief Scientist and Corporate Executive Officer of Sun Microsystems</p> <p><a href="http://www.cc.gatech.edu/computing/nano/documents">http://www.cc.gatech.edu/computing/nano/documents</a></p> <p>Movie " AI" and "I Robot"</p>	Reflection and Discussion	<b>Case Study</b>	<b>Laptop</b>  <b>Writing Materials</b>	<b>Week 11-12</b>
<b>Specific Issues in Science Technology and Society</b>						
<ul style="list-style-type: none"> <li>Link learned concepts to the development of the information age and its impact on society</li> <li>Illustrate how the social media and the information age have impacted our lives</li> </ul>	The Information Age ( Gutenberg to Social Media)	<p>Book: " Alan Turing:The Enigma"Andrew Hodges and Douglas Hofstadter</p> <p>TED Talk: Julian Assenge on " Why the World Needs Wikileaks"</p> <p>Nature's Longest Threads by Janaki</p> <p>How we decide by Jonah Lehrer</p> <p>Information: The New Language of</p>	Discussion and Presentation	<p>Activity : A day without technology</p> <p>Activity: Timing your Technology</p> <p>Activity: Technology and Past (interviews</p>	<b>Laptop</b>  <b>Multimedia</b>	<b>Week 13</b>

		<p>Science by Hans Christian von Baeyer</p> <p>Rodriguez, S. M. (1996) Philippine Science and Technology: Economic, Political and Social Events Shaping Their Development</p> <p>Ecker, D.J. (2014) . Germ Catcher. Scientific American vol 310, issue 6 pp. 50-55</p> <p>Kaku, Michio (2011) Physics of the Future <a href="https://futurism.com">https://futurism.com</a></p>		with elders)		
<ul style="list-style-type: none"> <li>Determine the interrelatedness of society, environment and health</li> <li>Discuss the ethics and implications of GMOs and potential future impacts</li> </ul>	<p>Biodiversity and the Health Society</p> <p>Genetically Modified Organisms: Science, Health and Politics</p>	<p>Life and Biodiversity <a href="http://www.skinnersbiology.co.uk/powerpoint/Biodiversity">www.skinnersbiology.co.uk/powerpoint/Biodiversity</a></p> <p>Dubock, A. (2014). The Politics of Golden Rice. GM Crops and Food. Taylor and Francis Group.</p> <p>Duguet, AM et.al.(2013) "Ethics in Research with Vulnerable Populations and Emerging Countries: The Golden Rice Case". Journal of International law and Commercial Regulations vol 38 Issue 4, p979-1013.</p> <p>Agroecology:concepts, principles and applications retrieved from <a href="http://www.agroeco.org">www.agroeco.org</a></p>	<p>Discussion</p> <p>Venn Diagram Charting</p> <p>Group Activity: Advocacy Writing on Biodiversity</p> <p>Group Debate</p> <p>Individual Research Work</p>	<p>Graded Recitation</p> <p>Debate</p> <p>Action Plan (with rubric)</p> <p>Research paper</p>	<p>Laptop</p> <p><b>Multimedia</b></p>	<p><b>Week 14</b></p> <p><b>Week 15</b></p>

<ul style="list-style-type: none"> <li>• Discuss the major impacts (both potential and realized) of nanotechnology on society</li> <li>• Analyze the issue through the conceptual STS lenses</li> <li>• Critique the issue on its costs and benefits to society</li> </ul>	The Nano World	<p>TED Talk by Ray Kurzweil on “ How Technology Will Transform Us</p> <p>Lin, P. and Allhof, F.(2007) “Nanoethics the Ethical and Social Implications of Nanotechnology”. New Jersey: John Wiley and Sons Inc.</p> <p>Misak,Z.H. et. al (2011). “ Environmental Impacts of Nanotechnology and It’s Products” AI Proceedings of the 2011 Midwest Section of the American Society for Engineering Education.</p>	Presentation and Discussion	Group presentation on the Impact of nanotechnology to society	Laptop <b>Multimedia</b>	<b>Wee k 16</b>
<ul style="list-style-type: none"> <li>• Describe gene therapy and its various format</li> <li>• Assess the issue’s potential benefits and detriments to global health</li> </ul>	Gene Therapy ( stem cells)	<p>Science Fiction: Stem Cell Research</p> <p>TED TALK: Susan Lim on “ Transplant Cells Not Organs”</p> <p>TED TALK: Juan Enriquez on “ The Next Species of Human”.</p>	Discussion Debate	Panel Discussion ( with rubric)	<b>Online Learning resources</b>	Wee k 17
<ul style="list-style-type: none"> <li>• Identify the causes of climate change</li> <li>• Assess the various impacts of climate change including,</li> </ul>	Climate Change and the Energy Crisis	Al Gore “ An Inconvenient Truth: The Planetary Emergence of Global Warming and What We can do about It” www. youtube.com	Discussion Group work: Infomercial	Peer Teaching ( with rubric)	<b>Docu Films</b>	Wee k 18

<p>economic, geopolitical, biological, meteorological, etc.</p> <ul style="list-style-type: none"> <li>• Apply STS concepts to the issue of climate change</li> </ul>		<p>Legarda, L. (2010) "BUHOS": A Climate Change Documentary</p> <p>Hardin, G. (1968). "The Tragedy of the Commons" Science Partner Journal. science mag. org.</p> <p>Donovan, W.(2008)."Reigning in the Weather". Discover 02747529 vol. 29, issue</p>	<p>Advocacy campaign about climate change</p>			
<ul style="list-style-type: none"> <li>•</li> </ul>						