2nd Semester, S.Y 2020 – 2021

COURSE GUIDE

COURSE DESCRIPTION AND OVERVIEW

The course deals with interactions between science and technology and social, cultural, political, and economic contexts that shape and are shaped by them. (CMO No. 20, series of 2013).

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 ethical decision making in the face of scientific and technological advancement.

This course includes mandatory topics on climate change and environmental awareness.

Science, Technology, and Society is a 3-unit pure–lecture course offered to Bachelor of Secondary Education students. It is a General Education course that is concerned with the interplay between science, technology, and society. This course is divided into three sections: General Concepts and Historical Development, which will give an overview of the impacts of science and technology to society and vice-versa in a historical perspective; Science, Technology, and Society and the Human Condition, which will give philosophical foundations in the study of science, technology, and society; and Specific Issues in Science, Technology, and Society, which will deal with relevant and specific issues in science and technology that impact human lives.

The course contents will be delivered through a remote learning modality. Remote classes will be done online and offline and may be conducted synchronously or asynchronously. Learning materials such as modules and e-books will be given for offline activities and assessments. Learning materials and assessments will be assigned and be accessed through the official Learning Management System (LMS) of Pangasinan State University. Learning materials will be provided ahead of time. Thus, you should prepare for the discussions by reading these pre-assigned materials.

BASIC COURSE INFORMATION

COURSE CODE	GE 6
COURSE TITLE	Science, Technology, and Society
COURSE CREDIT	3 units
PRE-REQUISITE / CO-REQUISITE COURSE	None
CLASS HOURS	3 hours
COURSE SCHEDULE	Tuesday-Wednesday, 7:30-9:00 AM (BPED II-1); 10:30-12:00 (BECED II-1)

FACULTY INFORMATION

NAME	**NELDA J. GARCIA**
ACADEMIC RANK/ DESIGNATION	Associate Professor V
EMAIL ADDRESS	neldagarcia@psu.edu.ph
OPTIONS FOR OR PREFERRED METHOD OF CONTACT	E-mail and Messenger
CONSULTATION SCHEDULE	Tuesday, 9:00-10:30 AM

OFFICE LOCATION	Pangasinan State University – Quezon Blvd. Zone VI, Bayambang, Pangasinan

COURSE GOALS AND LEARNING OUTCOMES

At the end of this course, you are expected to:

1. Articulate the impacts of science and technology on society, specifically Philippine society (knowledge)
2. Explain how science and technology affect society and the environment and its role in nation-building (knowledge)
3. Analyze the human condition in order to deeply reflect and express philosophical ramifications that are meaningful to the student as a part of society (knowledge)
4. Define and demonstrate the impact of social media on the students' life and Philippine society in general (knowledge)
5. Imbibe the importance of science and technology in the preservation of the environment and the development of the Filipino nation (values)
6. 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 good life (values)
7. Foster the value of a healthy lifestyle toward the holistic and sustainable development of society and the environment (values)
8. Creatively present the importance and contributions of science and technology to society (skills)
9. 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 (skills)
10. Illustrate how social media and information age impact their lives and their understanding of climate change (skills)

COURSE MATERIALS

A. Required Readings

1. Aristotle. Nicomachean Ethics. Bartlett, R. and Collins C. (Trans.). Chicago, IL: The University of Chicago Press. Retrieved from http://classics.mit.edu/Aristotle/nicomachaen.html
2. Brown, J. S. and Duguid P. (2001). A Response to Bill Joy and the Doom-and-Gloom Technofuturist. Retrieved from http://nook.cs.ucdavis.edu/~koehl/Teaching/ECS188/Reprints/Response_to_BillJoy.pdf
3. Caoili, O. (1986). A History of Science and Technology of the Philippines. In Analysis of Conditions for National Scientific and Technological Self-Reliance: The Philippine Situation. Quezon City: University of the Philippines. Retrieved from https://www.academia.edu/40192220/A_HISTORY_OF_SCIENCE_AND_TECHNOLOGY_IN_THE_PHILIPPINES
4. Carr, N. (2008, July). Is Google Making Us Stupid?: What the Internet is doing to our brains. The Atlantic. Retrieved from https://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868/
5. Evans, D. (2007, March 9). The ethical dilemmas of robotics. BBC News. Retrieved from http://news.bbc.co.uk/2/hi/technology/6432307.stm
6. Heidegger, M. (1977). The Question Concerning Technology. In The Question Concerning Technology and Other Essays. (pp. 3-36). New York, NY: Harper and Row Publishers, Inc. Retrieved from https://simondon.ocular-witness.com/wp-content/uploads/2008/05/question_concerning_technology.pdf
7. Hickel, J. (2015, September 23) Forget 'developing' rich countries, it's time to 'de-develop' rich countries. The Guardian. Retrieved from https://www.theguardian.com/global-development-professionals-network/2015/sep/23/developing-poor-countries-de-develop-rich-countries-sdgs
8. Joy, W. (2000, April 1) Why The Future Doesn't Need Us. Wired. Retrieved from https://www.wired.com/2000/04/joy-2/
9. National Economic and Development Authority. (2017). Philippine Development Plan 2017-2022. Pasig City. Retrieved from http://www.neda.gov.ph/wp-content/uploads/2017/12/Abridged-PDP-2017-2022_Final.pdf
10. Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. Quezon City: C&E Publishing
11. Shuttleworth, M. and Wilson, L. (2008, October 24). What Is A Paradigm?. Explorable.com. Retrieved from https://explorable.com/what-is-a-paradigm
12. Sunderland, T. (2011). Food security: why is biodiversity important? *International Forestry Review*. 13(3), pp. 265-274. Retrieved from http://www.legato-project.net/NPDOCS/13-3-IFR-copy.pdf
13. Wolpert, L. (2005). The Medawar Lecture 1998 Is Science Dangerous? In Philosophical Transactions B. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1569503/
14. Zhang, B. et al. (2011). Environmental Impacts of Nanotechnology and Its Products. Midwest Section Conference of the American Society for Engineering Education. Retrieved from https://faculty.atu.edu/cgreco/ASEEmw_2011/ASEE_2011_Proceedings/Peer_Reviewed_Papers/ASEE-

MIDWEST_0030_c25dbf.pdf

B. Multimedia Resources

1. TEDx Talks (2015, June 13). The Big History of Modern Science | Hannu Rajaniemi | TEDxDanubia. [Video file]. Retrieved from https://www.youtube.com/watch?v=ZcWsjlGPPFQ
2. TheScienceFoundation. (2011, November 28). Stephen Colbert Interviews Neil deGrasse Tyson at Montclair Kimberley Academy - January 29th 2010. [Video file]. Retrieved from https://www.youtube.com/watch?v=ers2SPaTFTg
3. Lewis, C. (2012, November 18). The Magician's Twin: C.S. Lewis and the Case against Scientism. [Video file]. Retrieved from https://www.youtube.com/watch?v=FPeyJvXU68k
4. TED. (2010, July 19). Julian Assange: Why the world needs WikiLeaks. [Video file]. Retrieved from https://www.youtube.com/watch?v=HNOnvp5t7Do
5. Putin, O. (2014, July 30). Science, Technology, and Information on the Modern Battlefield (Full Documentary). [Video File]. Retrieved from https://www.youtube.com/watch?v=hUtfXuKQ7us
6. Newest Documentaries (2018, January 21). The Internet Revolution and Digital Future Technology [Video File]. Retrieved from https://www.youtube.com/watch?v=V9xZFZO7USA
7. Irishstemcell. (2012, August 22). Science Friction: Stem Cell Research. Retrieved from https://www.youtube.com/watch?v=mPy7NFkJ-TQ
8. TED. (2009, February 17). The next species of human | Juan Enriquez. [Video file]. Retrieved from https://www.youtube.com/watch?v=JNcLKbJs3xk
9. TED. (2011, April 19). Susan Lim: Transplant cells, not organs. [Video file]. Retrieved from https://www.youtube.com/watch?v=EU15c9hnftE
10. Torres, E. and Domingo, R. (2016, July 28). SC reverses ruling on BT 'talong' tests. In Inquirer.net. retrieved from https://newsinfo.inquirer.net/800262/sc-reverses-ruling-on-bt-talong-tests
11. TED. (2007, January 12). The accelerating power of technology | Ray Kurzweil. [Video file]. Retrieved from https://www.youtube.com/watch?v=IfbOyw3CT6A
12. Core-Dekaron Snow (2013, December 13). Typhoon Haiyan Eye Of The Storm. [Video file]. Retrieved from https://www.youtube.com/watch?v=-BnahLG_DmQ
13. Legarda, L. (2011, August 16). LOREN LEGARDA: BUHOS, A Climate Change Documentary FULL. [Video file]. Retrieved from https://www.youtube.com/watch?v=ESW_S8ZHS80&t=958s
14. TBPI / The Artistshop Company, Inc. (2009, July 1). PANAHON NA! Ang Hamon sa Pinoy at Climate Change. [Video file]. Retrieved from https://www.youtube.com/watch?v=iOjyCHA_PeA

C. Supplementary Readings

1. _____ (2015, May 20) Scientists tackle mystery of thunderstorms that strike at night. In *National Science Foundation.* Retrieved from https://www.nsf.gov/news/news_summ.jsp?cntn_id=135046
2. Agence France-Presse (2018). Facebook says 87 million may be affected by data privacy scandal. Rappler. Retrieved from https://www.rappler.com/technology/news/199588-facebook-data-affected-cambridge-analytica-scandal
3. Bandarlipe, M. C. B. (2019). Science, Technology, and Society. Bulacan: IPM Publishing.
4. Bautista, D. H. S. et al. (2019). Science, Technology, and Society. Malabon City: Mutya Publishing House, Inc.
5. Colvin V. (2003). The potential environmental impact of engineered nanomaterials. Nature Biotechnology, 21(10), pp. 1166-1170. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.423.7263&rep=rep1&type=pdf
6. De Regla, E. N., Duay, B. S. C. and Taguiling, M. L. G. (2019). Bulacan: St. Andrew Publishing House.
7. Dubock, A. (2014). The politics of golden rice. GM Crops & Food, 5(3), 210-222. Retrieved from http://www.goldenrice.org/PDFs/Dubock-Politics_of_GR-2014.pdf
8. Duguet, A. et al. (2013). Ethics in Research with Vulnerable Populations and Emerging Countries: The Golden Rice Case. *Journal of International Law and Commercial Regulations,* 38(4), 979-1013. Retrieved from https://scholarship.law.unc.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1978&context=ncilj
9. Ecker, D. (2014). *Germ Catcher*. Scientific American. Retrieved from https://www.researchgate.net/publication/263779261_Germ_Catcher
10. Fiske, S.J., et al. (2014). Changing the Atmosphere. Anthropology and Climate Change. Final report of the AAA Global Climate Change Task Force. Arlington, VA: American Anthropological Association. Retrieved from http://s3.amazonaws.com/rdcms-aaa/files/production/public/FileDownloads/pdfs/cmtes/commissions/upload/GCCTF-Changing-the-Atmosphere.pdf
11. Geddes, L. (2013, October 30). 'Bubble kid' success puts gene therapy back on track. In New Scientist. Retrieved from https://www.newscientist.com/article/mg22029413-200-bubble-kid-success-puts-gene-therapy-back-on-track/

12. Hardin, G. (1968). The Tragedy of the Commons. *Science*, 162(2859), 1243-1248, DOI: 10.1126/science.162.3859.1243 Retrieved from https://science.sciencemag.org/content/162/3859/1243
13. MacNamara, D., Valverde, V., and Beleno, R. (2018). Science, Technology, and Society. Quezon City: C&E Publishing.
14. National Economic and Development Authority. (2017). Philippine Development Plan 2017-2022. Pasig City. Retrieved from http://www.neda.gov.ph/wp-content/uploads/2017/12/Abridged-PDP-2017-2022_Final.pdf
15. Serafica, J., et al. (2018) Science, technology and society. Quezon City: Rex Bookstore.
16. Shuttleworth, M. (2008, April 15). Scientific Reductionism. Explorable.com. Retrieved from https://explorable.com/scientific-reductionism
17. Silici, Laura. (2014). Agroecology. What it is and what it has to offer. IIED Issue Paper. Retrieved from https://www.researchgate.net/publication/264245203_Agroecology_What_it_is_and_what_it_has_to_offer
18. Taguiling, M. L. G. (2019). Science, Technology, and Society. Bulacan: St. Andrew Publishing House.
19. The Scientific Revolution: Science & Society from the Renaissance to the Early Enlightenment: Lesson Plans. (n.d.). Retrieved from https://hti.osu.edu/scientificrevolution/lesson_plans
20. Torres, E. and Domingo, R. (2016, July 28). SC reverses ruling on BT 'talong' tests. In Inquirer.net. retrieved from https://newsinfo.inquirer.net/800262/sc-reverses-ruling-on-bt-talong-tests
21. Unit 15: The Age of Enlightenment. (n.d.). Retrieved from http://flowofhistory.com/category/export/html/44
22. United Nations Environment Programme (2011). Towards a green economy: pathways to sustainable development and poverty eradication. Retrieved from https://sustainabledevelopment.un.org/content/documents/126GER_synthesis_en.pdf
23. Webster, D. (2008, June 6). Harnessing the Weather. *Discover.* Vol. 29, Issue 6. Retrieved from http://discovermagazine.com/2008/jun/06-harnessing-the-weather
24. Woodward A. (2017). How climate change affects the building blocks for health. In *The Conversation*. Retrieved from https://theconversation.com/how-climate-change-affects-the-building-blocks-for-health-86202

COURSE REQUIREMENTS, ASSESSMENTS, AND GRADING

Course Requirements

Your grade in GE 6 will be based on a number of course requirements as indicated below which are done an online setting.

Formative assessments such as class participations, quizzes, activities and exercises will be used to evaluate your comprehension and progress during the unit or lesson. **Summative assessment** comprises the major examinations (Midterm and Final examinations).

- **Major Exams** – These include Midterm and Final term exams which will be administered face-to-face for one hour. The exams are departmental, and will be given as multiple choice exams.
- **Quizzes** – These are 10 to 30 point-tests which may be announced or unannounced.
- **Class Participation/Recitation** – These will be based on the assigned readings or home-based assignments and will be used for thoughtful discussions during the face-to-face and remote discussions. A rubric will be used for grading the class participation with the criteria frequency of participation, level of engagement, understanding and delivery, and substance of comments/ answers.
- **Home-based Assignments** – These papers, activities, worksheets, or presentations are activities for assessment of your home-based learning. These are self-learning activities in which you are provided with guidelines. These are also assigned to you for harmonious and productive discussions and participation during online and residential classes.
- **Attendance** – Class attendance is compulsory for discussion, participation and examinations.
- **Portfolio** – A portfolio is a collection of your submitted and marked activities in GE 6. You must keep and compile all activities because these will be submitted at the end of the semester.

The illustration below summarizes the assessment and grading system for the course:

SEMESTRAL GRADE	=	50% of Mid-Term Grade	Midterm Exam (40%)
			Attendance/ Recitation/ Quizzes (30%)
			Home Based Requirements (30%)
			100%
	+		

50% of Final Term Grade	Final Exam	(40%)
	Attendance/ Recitation/ Quizzes	(30%)
	Home Based Requirements	(30%)
		100%

COURSE POLICIES AND PROCEDURES

Class Attendance (Article 2, Section 14 of PSU Student Handbook)

1. If you have a record of ten (10) unapproved absences from the class, and/or has been absent for more than 20 percent of the required number of hours without any valid reason,you will be automatically dropped from the subject.
2. Approved absences are limited only to illness as certified by a physician, death of a family member, official and authorized representation of Campus/University in official function/ activities and other reasons as may be deemed justified by your instructor.
3. For excused absences, it is your responsibility to seek out missed assignments. You should check the official PSU LMS, official class FB page/group messenger and your classmates for notes, handouts, etc.

Classroom Expectations

4. **Be Prepared.** Your grade is your sole responsibility. Earn the good grade you deserve by attending to class prepared. Complete reading assignments and other homework before class so that you can understand the lecture and participate in discussion. Have your homework ready to submit and always prepare your book, notebook, paper and writing materials. Also, each of you is assigned to be the prayer leader for the day. If you are assigned to lead, please be ready with your prayer. (**Accountability, Credibility and Integrity, Spirituality**)
5. **Be Participative.** Be ready and willing to participate in classroom discussions. Contribute proactively to class discussions. Do not hesitate to ask questions during class discussions. Remember, you came to school to learn. (**Competence and Commitment to Achieve Excellence**)
6. **Be Punctual.** Attendance will be checked regularly. Submit your homeworks/problem sets/ class activities on time too. (**Accountability, Competence and Commitment to Achieve Excellence)**
7. **Be Respectful.** Any action that bothers another student or the teacher, or any disruptive behavior in class, is considered disrespectful. Demonstrate proper respect for teachers, your classmates, other university personnel and all university property. Listen to others and evaluate ideas on their own merit. (**Social Responsiveness**)
8. **Be Tidy.** Cleanliness is next to Godliness. Your activities must be clean and organized. Your clean work reflects that homeworks/problem sets are well-prepared. (**Accountability, Credibility and Integrity, Competence and Commitment to Achieve Excellence, Social and Environmental Responsiveness**)

Technology Agreement

9. Electronic devices such as laptops, tablets and cell phones should be used for the sole purpose of class-related matters during class time. Please make sure they are fully charged before bringing them to class.
10. To prevent disruption of classes, observe proper online class etiquette.

Academic Honesty and Class Conduct

11. Plagiarism and other forms of intellectual dishonesty will not be tolerated. An automatic grade of 5.00 will be given to submitted homework, laboratory report and research.
12. For cheating in examination and quizzes, the provisions of Article 14, Section 1-n of PSU Handbook will be enforced:
    - 1st Offense: Automatic grade of 5.00 in the particular examination where cheating occurred; referral to guidance counselor.
    - 2nd offense: Automatic grade of 5.0 if done on the same subject and/or other subjects and suspension for one semester.
    - 3rd offense: Automatic grade of 5.0 in the subject/s and suspension of one semester to dismissal from the institution.

Guidelines on Late Submissions of Requirements and Late Examinations

13. The dates of the submission for all home-based requirements are indicated in the Instructional Delivery Plan. Five points will be deducted for every day of failure to submit said requirements (except for approved absences).
14. You are only allowed to take missed examinations due to approved absence. Please fill up the Request for Special Examination before taking the missed exam.

Class Policies (Online Class)

15. Wear decent clothing during web conference.
16. No foul words during online discussions.
17. Observe punctuality.
18. Private conversations during web conferencing are not allowed.
19. Respect shall be observed for the teacher and students.
20. Cheating and plagiarism are not tolerated.
21. Submit requirements as agreed during class orientation.

COURSE SCHEDULE

Week / Date	Module and Topic	Learning Resources	Activities, Assessment and Deadline
WEEK 1 (February 22 – 26, 2021)	**Orientation** Vision, Mission, Goals and Core Values Quality Policy Policies inside the classroom; LMS Orientation; Remote Learning Preference of Students		**Activity:** Orientation and Student Survey
	Module 1: Introduction to Science, Technology and Society A. General Concepts Related to Science, Technology, and Society B. Historical Roots of STS as an Academic Field C. The Importance of the Study of STS **D.** Ethical Dilemmas that Reinforce the Study of STS	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 2-14. Quezon City: C&E Publishing. Wolpert, L. (2005). The Medawar Lecture 1998 Is Science Dangerous? In Philosophical Transactions B. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1569503/ **Supplemental Reading:** Sarkar, S. and Pfeifer, J. Eds. (2016) *The philosophy of science: an encyclopedia.* pp. 749-753. USA: Taylor and Francis Group. Retrieved from http://fitelson.org/probability/sarkar_philosophy_of_science_encyclopedia.pdf	**Activity:** Online lecture-discussion Reading activity **Assessment:** Poster-making **Deadline:** March 1
WEEK 2 – 3 (March 1 – 12, 2021)	**Module 2:** Historical Antecedents	**Required Reading:** Quinto, Edward Jay M.	**Activity:** Online lecture-discussion

	of Science and Technology A. Historical Antecedents Defined B. Ancient Period C. Medieval Ages D. Modern Period E. Inventions by Filipino Scientists	and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 15-34. Quezon City: C&E Publishing. **Supplemental Reading:** Anderson, P. (2001). More is Different—One More Time. In Ong, N. P. and Bhatt, R. N. Eds. *More is Different: Fifty Years of Condensed Matter Physics*. (pp. 1-8). USA: Princeton University Press. Retrieved from: https://www.tkm.kit.edu/downloads/TKM1_2011_more_is_different_PWA.pdf Shuttleworth, M. (2008, April 15). Scientific Reductionism. Explorable.com. Retrieved from https://explorable.com/scientific-reductionism **Video clip viewing:** TEDx Talks (2015, June 13). The Big History of Modern Science | Hannu Rajaniemi | TEDxDanubia. [Video file]. Retrieved from https://www.youtube.com/watch?v=ZcWsjlGPPFQ TheScienceFoundation. (2011, November 28). Stephen Colbert Interviews Neil deGrasse Tyson at Montclair Kimberley Academy - January 29th 2010. [Video file]. Retrieved from https://www.youtube.com/watch?v=ers2SPaTFTg	Video clip viewing **Assessment:** Poster Making Quiz (March 12) **Deadline:** March 11
WEEK 4 (March 15 – 19, 2021)	**Module 3:** Intellectual Revolutions and Society A. What is a Intellectual Revolution?	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 35-46.	**Activity:** Online lecture-discussion Reading activity **Assessment:**

	B. Copernican Revolution C. Darwinian Revolution D. Freudian Revolution	Quezon City: C&E Publishing. Shuttleworth, M. and Wilson, L. (2008, October 24). What Is A Paradigm?. Explorable.com. Retrieved from https://explorable.com/what-is-a-paradigm Berra, T. (2008). *Charles Darwin's Paradigm Shift.* The Beagle, Records of the Museums and Art Galleries of the Northern Territory, 2008 24: 1–6. Retrieved from https://dtsc.nt.gov.au/__data/assets/pdf_file/0009/254934/Berra_2008.pdf **Supplemental Reading:** The Scientific Revolution: Science & Society from the Renaissance to the Early Enlightenment: Lesson Plans. (n.d.). Retrieved from https://hti.osu.edu/scientificrevolution/lesson_plans Unit 15: The Age of Enlightenment. (n.d.). Retrieved from http://flowofhistory.com/category/export/html/44	Metacognitive reading report **Deadline:** March 22
WEEK 5 – 6 (March 22 – 26, 2021)	**Module 4:** Science and Technology and Nation Building A. Brief Historical Background of Science and Technology in the Philippines B. Government Policies on Science and Technology C. Famous Filipinos in the Field of Science D. Science Education in	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 47-60. Quezon City: C&E Publishing. National Economic and Development Authority. (2017). Philippine Development Plan 2017-2022. Pasig City. Retrieved from http://www.neda.gov.ph/wp-content/uploads/2017/1	**Activity:** Online lecture-discussion **Assessment:** Quiz (March 26) Assignment **Deadline:** March 29

	the Philippines E. Indigenous Science and Technology in the Philippines	2/Abridged-PDP-2017-2022_Final.pdf Caoili, O. (1986). A History of Science and Technology of the Philippines. In Analysis of Conditions for National Scientific and Technological Self-Reliance: The Philippine Situation. Quezon City: University of the Philippines. Retrieved from https://www.academia.edu/40192220/A_HISTORY_OF_SCIENCE_AND_TECHNOLOGY_IN_THE_PHILIPPINES **Supplemental Reading:** Gripaldo, R. (2007). The concept of the public good: A view from a Filipino philosopher. Philosophia. 36. 141-154. Retrieved from https://ejournals.ph/article.php?id=4340	
SECTION 2: SCIENCE, TECHNOLOGY, AND SOCIETY AND THE HUMAN CONDITION			
WEEK 7 (March 29 – April 2, 2021)	**Module 5:** Technology as a Way of Revealing A. Instrumental and Anthropological View of Technology B. The Four Causes and the Concept of *Poiesis* C. The Essence of Modern Technology and the Concept of Enframing D. The Dangers of Technology E. Art as the Saving Power	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 62-80. Quezon City: C&E Publishing. Agence France-Presse (2018). Facebook says 87 million may be affected by data privacy scandal. Rappler. Retrieved from https://www.rappler.com/technology/news/199588-facebook-data-affected-cambridge-analytica-scandal Heidegger, M. (1977). The Question Concerning Technology. In The Question Concerning Technology and Other Essays. (pp. 3-36). New York, NY: Harper	**Activity:** Online lecture-discussion **Assessment:** Reflection **Deadline:** April 5

		and Row Publishers, Inc. Retrieved from https://simondon.ocular-witness.com/wp-content/uploads/2008/05/question_concerning_technology.pdf	
WEEK 8 (April 5 – 9, 2021)	**Module 6:** Human Flourishing in Progress and De-development A. Human Flourishing B. The Concept of De-Development	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 81-94. Quezon City: C&E Publishing. Hickel, J. (2015, September 23) Forget 'developing' rich countries, it's time to 'de-develop' rich countries. The Guardian. Retrieved from https://www.theguardian.com/global-development-professionals-network/2015/sep/23/developing-poor-countries-de-develop-rich-countries-sdgs **Video clip Viewing:** Lewis, C. (2012, November 18). The Magician's Twin: C.S. Lewis and the Case against Scientism. [Video file]. Retrieved from https://www.youtube.com/watch?v=FPeyJvXU68k	**Activity:** Online lecture-discussion Video clip viewing **Assessment:** Quiz (April 9) Video Analysis of *The Magician's Twin: C.S. Lewis and the Case against Scientism* **Deadline:** April 12
WEEK 9 (April 12 – 16, 2021)	**Module 7:** The Good Life A. Aristotle and his Philosophy B. *Nicomachean Ethics* and the Good Life C. The Concept of *Eudaimonia* D. Attaining *Eudaimonia*	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 95-109. Quezon City: C&E Publishing. Aristotle. Nicomachean Ethics. Bartlett, R. and Collins C. (Trans.). Chicago, IL: The University of Chicago Press. Retrieved from http://classics.mit.edu/Aristotle/nicomachaen.html	**Activity:** Online lecture-discussion **Assessment:** Reflection **Deadline:** April 19

		Supplemental Reading: United Nations Environment Programme (2011). Towards a green economy: pathways to sustainable development and poverty eradication. Retrieved from https://sustainabledevelopment.un.org/content/documents/126GER_synthesis_en.pdf	
	MIDTERM EXAMINATION		
WEEK 10 (April 19 – 23, 2021)	**Module 8:** When Technology and Humanity Cross A. Human Rights-Based Approach to Science and Technology B. Key Documents and their Principles that Ensure the Well-being of Humans C. Humans and Robots D. Humans, Technology, and the Internet	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 111-122. Quezon City: C&E Publishing. Mukherjee, S. R. (2012). *Linking Science and Human Rights: Facts and Figures.* SciDevNet. Retrieved from https://www.scidev.net/global/human-rights/feature/linking-science-and-human-rights-facts-and-figures.html#:~:text=A%20human%20rights%2Dbased%20approach%20to%20science%2C%20technology%20and%20development,engages%20with%20urgent%20global%20challenges. Carr, N. (2008, July). Is Google Making Us Stupid?: What the Internet is doing to our brains. The Atlantic. Retrieved from https://www.theatlantic.com/magazine/archive/2008/07/is-google-making-us-stupid/306868/ Evans, D. (2007, March 9). The ethical dilemmas of robotics. BBC News. Retrieved	**Activity:** Online lecture-discussion **Assessment:** Document Analysis **Deadline:** April 26

		from http://news.bbc.co.uk/2/hi/technology/6432307.stm	
WEEK 11 (April 26 – 30, 2021)	**Module 9:** Why the Future Does Not Need Us A. *Why the Future Does not Need Us* B. Criticisms on Joy's Views	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 123-130. Quezon City: C&E Publishing. Brown, J. S. and Duguid P. (2001). A Response to Bill Joy and the Doom-and-Gloom Technofuturist. Retrieved from http://nook.cs.ucdavis.edu/~koehl/Teaching/ECS188/Reprints/Response_to_BillJoy.pdf Joy, W. (2000, April 1) Why The Future Doesn't Need Us. Wired. Retrieved from https://www.wired.com/2000/04/joy-2/	**Activity:** Online lecture-discussion (November 17) **Assessment:** Quiz (April 30) Assignment **Deadline:** May 3
SECTION 3: SPECIFIC ISSUES IN SCIENCE, TECHNOLOGY, AND SOCIETY			
WEEK 12 (May 3 – 7, 2021)	**Module 10:** Information Age A. History and Emergence of the Information Age B. Issues of the Information Age	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 132-146. Quezon City: C&E Publishing. **Supplemental Reading:** Ecker, D. (2014). *Germ Catcher*. Scientific American. Retrieved from https://www.researchgate.net/publication/263779261_Germ_Catcher **Video clip viewing:** TED. (2010, July 19). Julian Assange: Why the world needs WikiLeaks. [Video file]. Retrieved from https://www.youtube.com/watch?v=HNOnvp5t7Do Putin, O. (2014, July 30). Science,	**Activity:** Online lecture-discussion **Assessment:** Position paper **Deadline:** May 10

		Technology, and Information on the Modern Battlefield (Full Documentary). [Video File]. Retrieved from https://www.youtube.com/watch?v=hUtfXuKQ7us Newest Documentaries (2018, January 21). The Internet Revolution and Digital Future Technology [Video File]. Retrieved from https://www.youtube.com/watch?v=V9xZFZO7USA	
WEEK 13 (May 10 – 14, 2021)	**Module 11:** Biodiversity and a Healthy Society A. Biodiversity and its Types B. Human Health and Biodiversity C. Food and Biodiversity D. Energy and Biodiversity E. Biodiversity, Water Storage, and Flood Control F. Biodiversity, Air, and Water Treatment	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 147-162. Quezon City: C&E Publishing. Sunderland, T. (2011). Food security: why is biodiversity important? *International Forestry Review*. 13(3), pp. 265-274. Retrieved from http://www.legato-project.net/NPDOCS/13-3-IFR-copy.pdf **Supplemental Reading:** Silici, Laura. (2014). Agroecology. What it is and what it has to offer. IIED Issue Paper. Retrieved from https://www.researchgate.net/publication/264245203_Agroecology_What_it_is_and_what_it_has_to_offer	**Activity:** Online lecture-discussion **Assessment:** Quiz (May 14) Proposal plan **Deadline:** May 17
WEEK 14 – 15 (May 17 – 28, 2021)	**Module 12:** Genetically Modified Organisms (GMOs) and Gene Therapy A. Genetically Modified Organisms B. Roles, Benefits, and Potential Risks of GMOs C. Initiatives on Safety from GMOs	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 163-180. Quezon City: C&E Publishing. Dubock, A. (2014). The politics of golden rice. GM Crops & Food, 5(3), 210-222.	**Activity:** Online lecture-discussion **Assessment:** Position paper **Deadline:** May 31

	D. The Philippines and GMOs E. Gene Therapy and Stem Cells F. Applications of Stem Cells G. Gene Therapy Concerns	Retrieved from http://www.goldenrice.org/PDFs/Dubock-Politics_of_GR-2014.pdf Duguet, A. et al. (2013). Ethics in Research with Vulnerable Populations and Emerging Countries: The Golden Rice Case. *Journal of International Law and Commercial Regulations,* 38(4), 979-1013. Retrieved from https://scholarship.law.unc.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1978&context=ncilj Geddes, L. (2013, October 30). 'Bubble kid' success puts gene therapy back on track. In New Scientist. Retrieved from https://www.newscientist.com/article/mg22029413-200-bubble-kid-success-puts-gene-therapy-back-on-track/ Torres, E. and Domingo, R. (2016, July 28). SC reverses ruling on BT 'talong' tests. In Inquirer.net. retrieved from https://newsinfo.inquirer.net/800262/sc-reverses-ruling-on-bt-talong-tests **Video clip viewing:** Irishstemcell. (2012, August 22). Science Friction: Stem Cell Research. Retrieved from https://www.youtube.com/watch?v=mPy7NFkJ-TQ TED. (2009, February 17). The next species of human | Juan Enriquez. [Video file]. Retrieved from	

		https://www.youtube.com/watch?v=JNcLKbJs3xk TED. (2011, April 19). Susan Lim: Transplant cells, not organs. [Video file]. Retrieved from https://www.youtube.com/watch?v=EU15c9hnftE	
WEEK 16 (May 31 – June 4, 2021)	**Module 13:** Nanotechnology A. What is Nanotechnology? B. Applications of Nanotechnology C. Challenges of Nanotechnology D. Ethical Dilemmas of Nanotechnology	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D. (2019). *Science, Technology, and Society*. pp 181-192. Quezon City: C&E Publishing. Zhang, B. et al. (2011). Environmental Impacts of Nanotechnology and Its Products. Midwest Section Conference of the American Society for Engineering Education. Retrieved from https://faculty.atu.edu/cgreco/ASEEmw_2011/ASEE_2011_Proceedings/Peer_Reviewed_Papers/ASEE-MIDWEST_0030_c25dbf.pdf Colvin V. (2003). The potential environmental impact of engineered nanomaterials. Nature Biotechnology, 21(10), pp. 1166-1170. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.423.7263&rep=rep1&type=pdf **Video clip viewing:** TED. (2007, January 12). The accelerating power of technology | Ray Kurzweil. [Video file]. Retrieved from https://www.youtube.com/watch?v=IfbOyw3CT6A	**Activity:** Online lecture-discussion **Assessment:** Quiz (June 4)
WEEK 17 – 18 (June 7 - 18, 2021)	**Module 14:** Climate Change and Environmental	**Required Reading:** Quinto, Edward Jay M. and Nieva, Aileen D.	**Activity:** Online lecture-discussion

	Awareness A. What is Climate Change? B. Environmental Awareness C. Disaster Risk Management	(2019). *Science, Technology, and Society*. pp 193-210. Quezon City: C&E Publishing. Woodward A. (2017). How climate change affects the building blocks for health. In *The Conversation*. Retrieved from https://theconversation.com/how-climate-change-affects-the-building-blocks-for-health-86202 _____ (2015, May 20) Scientists tackle mystery of thunderstorms that strike at night. In *National Science Foundation.* Retrieved from https://www.nsf.gov/news/news_summ.jsp?cntn_id=135046 **Supplemental Reading:** Hardin, G. (1968). The Tragedy of the Commons. *Science*, 162(2859), 1243-1248, DOI: 10.1126/science.162.3859.1243 Retrieved from https://science.sciencemag.org/content/162/3859/1243 Webster, D. (2008, June 6). Harnessing the Weather. *Discover.* Vol. 29, Issue 6. Retrieved from http://discovermagazine.com/2008/jun/06-harnessing-the-weather Fiske, S.J., et al. (2014). Changing the Atmosphere. Anthropology and Climate Change. Final report of the AAA Global Climate Change Task Force. Arlington, VA: American Anthropological	**Assessment:** Portfolio **Deadline:** June 18

		Association. Retrieved from http://s3.amazonaws.com/rdcms-aaa/files/production/public/FileDownloads/pdfs/cmtes/commissions/upload/GCCTF-Changing-the-Atmosphere.pdf **Video clip viewing:** Core-Dekaron Snow (2013, December 13). Typhoon Haiyan Eye Of The Storm. [Video file]. Retrieved from https://www.youtube.com/watch?v=-BnahLG_DmQ Legarda, L. (2011, August 16). LOREN LEGARDA: BUHOS, A Climate Change Documentary FULL. [Video file]. Retrieved from https://www.youtube.com/watch?v=ESW_S8ZHS80&t=958s TBPI / The Artistshop Company, Inc. (2009, July 1). PANAHON NA! Ang Hamon sa Pinoy at Climate Change. [Video file]. Retrieved from https://www.youtube.com/watch?v=iOjyCHA_PeA	
	FINAL EXAMINATION		