



EST 202: INTRODUCTION TO SCIENCE, TECHNOLOGY, AND SOCIETY STUDIES

Instructor: Professor Gerald M. Stokes

Office: A309

Office Hours: Tuesday: 1330-1500
Wednesday: 1000-1130
Thursday: 1330-1500

Dates: February 25 – June 8

Time: 1530-1650

Class Location: TBD

Email: gerald.stokes@sunykorea.ac.kr

Things to think about when emailing your professor:

<http://www.wellesley.edu/socialcomputing/Netiquette/netiquetteprofessor.html>

Teaching Assistant: Saebom Jin

Office: A301

Office Hours: TBD

COURSE DESCRIPTION

This course is an introduction to the interrelationship among science, technology and society, which are portrayed as being dynamic and inseparable. It provides the concepts, framework, and context for science-technology-society studies. It includes ethical issues, social influences, and public policies as they influence and interact with the societal management of science and technology.

COURSE OBJECTIVES

- Understand the role and purpose of Science and Technology Society Studies
- Understand the **basic four physical forces** (Electromagnetic, Gravity, Strong nuclear forces, Weak nuclear forces) shaping the development of science and technology – and the fifth force ...
- Distinguish between **Moore's Law** and Metcalfe's Law
- Understand the stages of technology development and deployment
- Learn to analyze a new technology using the **4Cs (computers, criminality, corporeality, corporation)** criteria
- Understand how the **five capitals (natural, built, human, social and financial)** come together in a technological system
- Understand the role of new technologies in bringing about the **4 Smarts (Smart education, smart development, smart communities and smart ethics)**

DEVELOP AND USE SKILLS

- Mind-mapping
- Presentation skills and styles
- Five-sentence paragraph
- Fundamentals of group work
- Technical report writing

HOW YOUR COURSE GRADE WILL BE DETERMINED

You can obtain a maximum of 100 points in this class.

Notebook (20 pts.)

The Research Project (50 pts.)

1. Group Presentation on a chapter in *Physics of Future* (10 pts.)
2. Expertise paper applying the 4Cs to a specific technology in your assigned chapter (20 pts.)
3. Group Paper integrating all the expertise papers from your group members (15 pts.)
4. Final Presentation (5 pts.)

Test on Intro, Computers, and AI (20 pts.)

Quizzes (5) (10 pts total)

Extra credit – up to 10 points divided among the team for a poster version of the final project presentation.

* Points to letter grade conversion

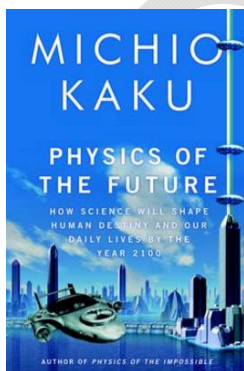
(93-100 = A, 90-92 = A-, 86-89 = B+, 83-85 = B, 80-82 = B-, 76-79 = C+, 73-75 = C, 70-72 = C-, 60-69 = D, 0-59 = F)

Total 100 pts.

RESOURCES

Required Book

Physics of the Future: How Science Will Shape Human Destiny and Our Daily Lives by the Year 2100 is a (2011 book) by theoretical physicist Michio Kaku. Kaku discusses possible future technological developments over the next 100 years in areas such as artificial intelligence, computing, energy, medicine, and nanotechnology. <http://www.brautech.co.za/info/FuturePhysics.pdf>



DETAILS OF THE ASSIGNMENTS

Notebook (20 points)

You will **maintain a written notebook of ideas, lists, drawings, discussions, reflections, dialogue, mind-maps, cartoons, charts, sketches, ruminations, criticisms, goals, etc.** 15 pages minimum. Date each entry for credit. No laptops may be used during class unless a specific assignment has been made which requires their use. Phones are allowed for limited use.

You will paste a QR code on the front cover of the notebook that links to a webpage with your name and picture. This may be used for attendance.



The research project (50 Points)

The context for the research project is that you and your team have been invited By Michio Kaku to assist in updating his book – “Physics of the Future”

- A group presentation on the assigned chapter from *Physics of the Future*.
 - Each team member will be involved in the actual presentation that **summarizes key points** from the relevant chapter.
- An individually written “expertise” paper analyzing your assigned chapter within the context (assigned) of
 - The 4 Cs: Computers, Corporations, Corporeality, Criminality, or
 - The five Capitals: Natural, Built, Human, Social and Financial, or
 - The 4 Smarts (Education, Development, Communities, Ethics
 - This paper will be between 14 and 20 paragraphs long.

Your paper will identify things that you would recommend changing in the chapter, identifying things that have gone faster, new things that have appeared, and things that appear to be going slower than originally suggested by Kaku. The focus should be on the near term but pointing to mid-term and long term consequences is encouraged.

- Groups will organize the expertise papers into one final report examining the near future (next 15 years) of the technological area using the 4 C’s, 5 capitals and 4 Smarts.
 - A title, introduction (4-6 paragraphs) and conclusion is needed.
 - All endnotes and styles need to be coordinated within the group.

- Final presentation on group project using Pecha Kucha style.

COMMUNICATIONS STRATEGY

- Email is the best way to communicate with me. My email is gerald.stokes@stonybrook.edu
- Office hours and visits: I will be in my office for office hours; however, I urge you to make an appointment if you want to make sure that you will see me. I also run an “open door” policy. This means if my office door is open or ajar, you should feel free to knock and come in to talk.

Course Schedule

Class	Date	Notes	Topics	Reading etc.
1	25-Feb-2020		Introduction	Syllabus
2	27-Feb-2019		Forces and energy	Phys of future - intro
3	3-Mar-2019	Finalize group assignments	Stages of Technology	Phys of future - intro
4	5-Mar-2019		5 capitals	Forum for the Future
5	10-Mar-2019		4 C's and 4 Smarts	
6	12-Mar-2019		Computer	Phys of future - chapter 1
7	17-Mar-2019		Computer	Phys of future - chapter 1
	19-Mar-2019	No class	No class	
8	24-Mar-2019		Computer	Phys of future - chapter 1
9	26-Mar-2019		Computer	Phys of future - chapter 1
10	31-Mar-2019		AI	Phys of future - chapter 2
11	2-Apr-2019		AI	Phys of future - chapter 2
12	7-Apr-2019		Medicine	Phys of future - chapter 3
13	9-Apr-2019	Exam	Exam	
14	14-Apr-2019		Nanotechnology	Phys of future - chapter 4
15	16-Apr-2019		Nanotechnology	Phys of future - chapter 4
16	21-Apr-2019		Energy	Phys of future - chapter 5
17	23-Apr-2019		Energy	Phys of future - chapter 5
18	28-Apr-2019		Energy	Phys of future - chapter 5
	30-Apr-2019	No class	No class	
	5-May-2019	No class	No class	
19	7-May-2019		Air travel	Phys of future - chapter 6
20	12-May-2019		Brain	Phys of future - chapter 3
21	14-May-2019		Space Travel	Phys of future - chapter 6
22	19-May-2019		Space Travel	Phys of future - chapter 6
23	21-May-2019		Robotic Capitalism	Phys of future - chapter 7
24	26-May-2019		Robotic Capitalism	Phys of future - chapter 7
25	28-May-2019		Wealth	Phys of future - chapter 7
26	2-Jun-2019		Presentations	Phys of future - chapter 8
27	4-Jun-2019		Presentations	Phys of future - chapter 8
28	8-Jun-2019	Adjustment	Presentations	Phys of future - chapter 8
	9-Jun-2019	Reading Day		
	11-Jun-2019	Reading Day		

ACADEMIC INTEGRITY

Note that the University's Academic Integrity Policy will be strictly enforced. Please adhere to SUNY Korea's honor code.

Any student caught plagiarizing or cheating will be reprimanded and may fail the course. Before turning in your work, please edit and proofread it. One way of not being accused of plagiarism is to cite your sources. See writing criteria at <http://apennings.com/writing-criteria/> Please contact me if you have any problems related to the course.

Attendance

Excessive disruption of the class or inattention may result in an absence recorded for that day. Talking out of turn, or excessive attention to an electronic device will result in first an expressed "warning," and if another occasion, dismissal from the day's class with an unexcused absence.

I will allow up to **three unexcused absences before subtracting a letter grade** from your final grade. Please communicate in advance when you expect to miss a class. Three late instances will result in one absence. According to the SUNY Korea requirements, any student missing 20 percent of the class will get an automatic F grade for the class.

WRITTEN WORK

Assignments over six pages must conform to APA or other established guidelines and styles. *Pocket Guide to APA Style* by Robert Perrin is a useful reference to check APA citations and styles. All assignments may be submitted via "TurnItIn" or be subject to other types of copyright/plagiarism analysis. Use endnotes or footnotes.¹ (e.g. Below)

Electronic copies must contain appropriate metadata and file names. The file nomenclature for this class will be discussed as part of the assignment but must contain your first initial and last name, course number, assignment, and date, For example, Moon_Jae-in_EST202_expertisepaper_Oct5.docx.

Just make sure you have your own name in the beginning and NOT MINE. PDFs are accepted along with a Word file if you feel it will maintain the integrity of your document layout and design.

If you have a medical, psychiatric or learning disability and require accommodations in this class, please let me know early in the semester or as soon as you are eligible for testing support.

BRIEF GUIDELINES FOR SUCCESS

- 1) Come to class on time
- 2) Pay attention to the lecture and your fellow students
- 3) Avoid distractions such as conversations with friends and cell phone or other electronic equipment.
- 4) Take good notes.

¹ Pennings, A. (2015, April 17). Diffusion and the Five Characteristics of Innovation Adoption. Retrieved from <http://apennings.com/characteristics-of-digital-media/diffusion-and-the-five-characteristics-of-innovation-adoption/>