Academic Year	AY2019/20	**Semester**	1
Course Coordinator	Assistant Professor Shengji WEI		
Course Code	ES8001/7001		
Course Title	Natural Hazards and Society		
Pre-requisites	None		
No of AUs	3		
Contact Hours	Total hours – 39 (Lecture – 39)		
Proposal Date	July/29/2019		

Course Aims

This is an introductory and general education course that aims to provide you with background knowledge on the range of natural hazards that may affect the human society. You will learn about the geological and geographic setting of different natural hazards, the physical processes that create the hazards, their potential social impacts and how or if the impacts can be mitigated. You will also study key hazardous sites and events and gain an insight into hazard and risk assessment, as well as a thorough understanding of the natural hazards threatening humans.

Intended Course Learning Outcomes (CLO)

By the end of this course, you (as a student) would be able to:

1. Identify the range of natural hazards, and explain where they occur, why and how (LO1).
2. Formulate well-reasoned arguments about the assessment and management of past hazards and disasters, based on the literature and your new knowledge of hazards and impacts (LO2).
3. Articulately present to others the hazards expected in any location around the world (LO3).

Course Content

The class content will be organised as learning about the where and why, the physical processes (hazards), their impacts and any possible mitigation strategies for a range of different natural hazards, including Landslide, Volcano, Earthquake, Tsunami, Flood, Typhoon, Climate, Wildfire and human induced hazards. Each topic will be covered by a three-hour formal lecture. In addition to these topic-based lectures, there will be an introductory class will present key terms and concepts around natural hazards. In the middle of each class (except the first two week), students will have 10-20 questions for quiz. 3-10 clicker questions will be asked in each topic based lectures to stimulate critical and out-of-the-box thinking.

Assessment (includes both continuous and summative assessment)

Component	Course LO Tested	Related Programme LO or Graduate Attributes (See Appendix 1)	Weighting	Team/ Individual	Assessment Rubrics
1. Participation in class lecture and clicker questions that aims at stimulating the thinking for the in class lecture content	1,2,3	Programme LO 1,2, 3,4, 5	20%	Individual	N.A.
2. Participation in quiz, which is designed to test the understanding of the lectures in previous week	1, 2	Programme LO 1, 3, 5	30%	Individual	N.A.
3. Final exam	1,2	Programme LO 1, 3, 5	50%	Individual	
Total			100%		

Formative feedback

You will receive oral feedback for Component 1, scores and work through of correct answers for Component 2.

Learning and Teaching approach

Approach	How does this approach support students in achieving the learning outcomes?
Lecture	To effectively convey information on fundamental theories and key concepts and to bring all of you up to similar levels of knowledge (Course LO1)
Clicker question and quiz	Various questions are designed to help you analyze, formulate and communicate a deep understanding of topics that are fundamental to natural hazard and risk assessment (CLO1, CLO2, CLO3)

Reading and References

1) Natural Hazards and Disasters (Paperback) by Donald Hyndman, David Hyndman.
2) A key element of this course is to train students to make effective use of the primary scientific literature, and so they are encouraged to read scientific articles, websites and review articles so that

they can explain to their friends and families the basic features of these natural hazards and what we can do to mitigate the impacts.

Course Policies and Student Responsibilities

(1) General

Students are expected to watch all pre-class videos, attend all lectures and answer clicker questions, and participate in class quiz. Students are expected to take responsibility to follow up with course notes and course related announcements for seminar sessions they have missed. Students are expected to participate in all in-class events and the final exam.

(2) Absenteeism

Absence from any part of the course without a valid reason will affect your overall course grade. Valid reasons include falling sick supported by a medical certificate. There will be limited make-up opportunities. If you miss a lecture or discussion group exercise you must inform me via email (shjwei@ntu.edu.sg) prior to the start of the class.

(3) Compulsory Assignments

You are required to participate in class clicker questions and quiz, unless a valid reason is provided. Valid reasons include falling sick supported by a medical certificate.

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the academic integrity website for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Course Instructors

Instructor	Office Location	Phone	Email
Shengji Wei	N2-01a-08	6592-7743	shjwei@ntu.edu.sg

Planned Weekly Schedule

Week (Aug-Nov)	Topic	Instructor	Course LO	Readings/ Activities
1	Setting the stage and summary of the class	Shengji Wei	1,2,3	Relevant chapter in main text book and video lecture (if applicable)*
2	Plate Tectonics and Earthquakes	Shengji Wei	1,2,3	"
3	Tsunamis	Shengji Wei	1,2,3	"
4	Volcano system	Shengji Wei	1,2,3	"
5	Volcanic hazards	Shengji Wei	1,2,3	"
6	River systems and floodplain hazards	Shengji Wei	1,2,3	"
7	Delta hazards, flooding and urbanization	Shengji Wei	1,2,3	"
8	Recess week		1,2,3	"
9	Cyclones and storms	Shengji Wei	1,2,3	"
10	Climate system	Shengji Wei	1,2,3	"
11	Climate change at different time scales	Shengji Wei	1,2,3	"
12	Human Impact to Climate Change	*TBD*	1,2,3	"
13	Other human-induced natural hazards and space weather	Shengji Wei	1,2,3	"
14	Review session	Shengji Wei	1,2	

* NOTE: A suggested reading list will also be given to the students for certain weeks, and they will be expected to read it before that week's discussion group exercise

Appendix 1. Programme Learning Outcomes

At the completion of your course of study in ASE, you will be able to:

1) Demonstrate intellectual flexibility and critical thinking in order to apply environmental knowledge in the real world.

2) Communicate environmental concepts with enthusiasm to varied audiences both orally and in writing.

3) Formulate scientific questions, and be able to access and analyze quantitative and qualitative information to address them.

4) Exhibit the motivation, curiosity and skills for lifelong learning.

5) Demonstrate ethical values and responsibility.

6) Collaborate and lead by influence.