Course number	U-LAS61 10015 LE14				
Course title (and course title in English)	Natural Disaster Science-E2 Natural Disaster Science-E2		Instructor's name, job title, and department of affiliation	Disaster Prevention Research Institute Professor,Sameh Kantoush	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language of instruction	English		Old group	Group B	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture (Face-to-face course)	Year/semesters	2025・Second semester
Days and periods	Tue.4	Target year	All students	Eligible students	For all majors

[Overview and purpose of the course]

This course will give students an introduction to the utilization of natural resources and natural disasters in the earth that impact humanity and life in general. The aim of this course will emphasize the fundamental scientific principles to explain current technical issues and impacts of climate change on water related disasters in the world such as flood, tsunami, landslides, severe weather, and sediment related disasters. Historic catastrophes will be emphasized. Based on these understandings, all students will study causes, effects, and options available to predict, control, and mitigate natural disasters and social scientific approaches. Examples from recent and ancient history will be used and, whenever possible, Japanese examples will be identified. Knowledge gained in this course will allow for a better understand the world around us and a greater appreciation of the potential issues moving forward for humans.

[Course objectives]

By the end of this course student will:
-Understanding of the world around us and a greater appreciation of the potential issues moving forward for humans.
-Be able to distinguish and analyze various types of natural disasters
-Be able to identify causes and assess significance of natural disasters for human
-Be able to gain analytical skills for how to develop strategies for prediction, mitigation of flooding, climate change impacts and sedimentation disasters

[Course schedule and contents)]

Week1: Introduction to Natural Disasters and Hazards
Week2: Disaster Risk Reduction, Management and Risk Assessment
Week3-4: Geological Hazards: Earthquakes Causes, Measurements, Mitigation and Risks
Week5: Climate Change and Global Warming
Week6: Understanding Natural Disasters : Focus on Tropical Cyclones
Week7: Report and Group Presentations
Week8-9: Flooding as a Hazard: Monitoring, Predication, and Mitigation Measures
Week10: Tsunamis: Physics, Modelling, and Engineering Solutions for Hazard Mitigation
Week11: Coastal Hazards
Week12-13: Landslides and Debris Flow Disaster: Monitoring, Predication, and Mitigation
Week14: Warning and Evacuation
Week15: Revision and Summary (group presentation)
Week16: Feedback

Continue to Natural Disaster Science-E2(2)↓↓↓

Natural Disaster Science-E2(2)

[Course requirements]

None

[Evaluation methods and policy]

Grades will be based on participation and collaboration in group work discussions and cooperative activities, writing reports associated with each topic of natural disasters that have occurred during the course. Evaluation will be based on class attendance, active participation (30%) and reports and group presentations on major natural disasters occur during the time period of the course (70%).

[Textbooks]

E.A. Keller and D.E. DeVecchio 『Natural Hazards, Earth's Processes as Hazards, Disasters, and Catastrophes, 』 （Pearson） ISBN:10 0-321-93996-4

[Study outside of class (preparation and review)]

Students are requested to read carefully listed textbook and access to historical case studies on each natural disaster through website and related literatures.

[Other information (office hours, etc.)]

Class participation and questions are very welcome during the lectures or at the end of the lecture. The schedule of office hours will be announced later. Moreover, if you have extra question, students may contact me by email.

[Essential courses]