



CLIMATE CHANGE MITIGATION AND ADAPTATION (4.5 ECTS)

Fall semester, 2021-2022

Coordinator	College of Environment and Natural Resources
Credits	4.5 ECTS
Lecturers	Nguyen Hieu Trung
Level	Master
Host institution	Can Tho University
Course duration	35 hours in-class, 100 hours self-study (total 135)

Summary

This course aims to provide students with knowledge and information on of climate change mitigation and adaptation concepts and practices. The course will focus on main contains:

- Understanding climate change, it causes and impacts (concepts such as adaptation and mitigation, causes and risks) and implications for food security, agriculture, aquaculture and natural resource management;
- Concepts and assessment of vulnerability, resilience, coping strategies and sustainable development processes;
- Informatics throughout grid eco-system evaluation and management
- Social system innovation to climate change; and
- Practice on design sustainable society

Target student audiences

Master in Climate Change & Delta Management

Prerequisites

Required courses (or equivalents): NO

Aims and objectives

- Have capacity and skills to initiate researches or projects relate to climate change,
- Contribute to the debate in the policy process for climate change mitigation and adaptation

Authentic Tasks:

Desired learning outcomes:

It is expected that students after finishing the course will:





Knowledge	<ul style="list-style-type: none"> • Have full understanding of climate change mitigation and adaptation concepts
Comprehensive	<ul style="list-style-type: none"> • Have capacity and skills to initiate researches or projects relate to climate change
Application	<ul style="list-style-type: none"> • Contribute to the debate in the policy process for climate change mitigation and adaptation.

Overview of sessions and teaching methods

The course will make most of interactive and self-reflective methods of teaching and learning and, where possible, avoid standing lectures and presentations.

Learning methods

- Project Based Learning
- Literature review
- Stakeholder analysis / customer consultation

Literature

[1] FAO, 2012. Climate change adaptation and mitigation. Challenges and opportunity in food sector. Food and Agriculture Organization of the United Nations.

<http://www.fao.org/docrep/016/i2855e/i2855e.pdf>

[2] Climate Change 2014: Impacts, Adaptation, and Vulnerability

<http://www.ipcc.ch/report/ar5/wg2/> ; in Fifth Assessment Report (AR5) by the IPCC

<http://www.ipcc.ch/report/ar5/>

[3] SUSTAINABLE DEVELOPMENT KNOWLEDGE PLATFORM

<https://sustainabledevelopment.un.org>

[4] Global Leadership for Climate Action, 2009. Facilitating an International Agreement on Climate Change: Adaptation to Climate Change.

http://www.unfoundation.org/assets/pdf/adaptation_to_climate_change.pdf

[5] The Global Competitiveness Report 2014–2015 (Full Data Edition

http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf

[6] Guide to the Millennium Assessment Reports

<https://www.millenniumassessment.org/en/index.html>

[7] 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4. Agriculture, Forestry and Other Land Use: <https://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>

[8] REDD+ Reducing Emissions from Deforestation and Forest Degradation

<http://www.fao.org/redd/en/>

[09] Future Earth- Research, Innovation, Sustainability, <http://www.futureearth.org/about>

[10] “Future City” Initiative: <http://www.kantei.go.jp/jp/singi/tiiki/kankyo/en/about/index.html>, FINAL-2018-TCFD-Status-Report-092518

[11] 2018 Status Report: Task Force on Climate-related Financial Disclosures: Status Report

<https://www.fsb-tcfd.org/wp-content/uploads/2018/08/FINAL-2018-TCFD-Status-Report-092518.pdf#search=%27FINAL2018TCFDStatusReport092518%27>

Course workload





The table below summarizes course workload distribution:

Activities	Learning outcomes	Assessment	Estimated workload (hours)
In-class activities (30 hours and 5 hours of group presentations)			
Lectures	- Have full understanding of climate change mitigation and adaptation concepts; - Have capacity and skills to initiate researches or projects relate to climate change; Contribute to the debate in the policy process for climate change mitigation and adaptation.	Join the class	30 hours/ 5 Topic
Moderated in-class discussions	Discuss each case of the lesson	Class participation and preparedness for discussions	4 hours
In-class assignments, homework assignment	Completed individually	Class participation and preparedness for assignments	4 hours
Reading and discussion of assigned papers for preparation for lectures	Depending on the number of academies and topics, groups of exercises will be appropriate	Class participation, creative and active contribution to discussion	2 hours
Presentation group	Depending on the number of academies and topics, the group will group the appropriate presentation	Quality group exercises and individual presentations	5 hours
Independent work (100 hours)			
Working group: - Contribution to group case studies projects - Contribute to the preparation and delivery of personalized presentations - Contribute to web application		Quality group exercises and individual presentations	25 hours
Course group exercises			70 hours
Presentation group		Quality group	5 hours



		exercises and individual presentations	
Total			135

Course outline

Week	Topics
Week 1&2 Week 3&4	Topic 1: CLIMATE CHANGE MITIGATION AND ADAPTATION Topic 2: VULNERABLE, RESILIENCE, AND COPING STRATEGY
Week 5&6	Topic 3: GRID ECO-SYSTEM EVALUATION AND MANAGEMENT
Week 7&8	Topic 4: GOVERNANCE AND SOCIAL SYSTEM
Week 9-11	Topic 5: PROJECT DESIGN FOR FUTURE SOCIETY
Week 12-13	Exercise
Week 14-15	Practice

Course Schedule

Chapter 1: CLIMATE CHANGE MITIGATION AND ADAPTATION	
Learning objectives	Understanding climate change, its causes and impacts (concepts such as adaptation and mitigation, causes and risks) and implications for food security, agriculture, aquaculture and natural resource management;
Learning outcomes	Have full understanding of climate change mitigation and adaptation concepts
Student deliverables	Exercise:
Topic materials	Lesson In order to understand well this chapter, students should read references of [1], [2], and [3]
Outline	1.1. International action on climate change, its causes and impacts 1.2. Climate change mitigation and adaptation 1.3. Linking adaptation and mitigation with sustainable development goals (SDGs) 1.4. Climate change mitigation and adaptation in Mekong Delta
Chapter 2: VULNERABLE, RESILIENCE, AND COPING STRATEGY	
Learning objectives	Concepts and assessment of vulnerability, resilience, coping strategies and sustainable development processes
Learning outcomes	Have full understanding of climate change mitigation and adaptation concepts,



	Have capacity and skills to initiate researches or projects relate to climate change
Student deliverables	Exercise:
Topic materials	Lesson In order to understand well this chapter, students should read references of [4], and [5]
Outline	1.1. Climate change impacts on vulnerability and resilience of eco-environment system 1.2. Building resilience and reducing vulnerability in Mekong Delta
Chapter 3: GRID ECO-SYSTEM EVALUATION AND MANAGEMENT	
Learning objectives	Informatics throughout grid eco-system evaluation and management
Learning outcomes	Have full understanding of climate change mitigation and adaptation concepts, Have capacity and skills to initiate researches or projects relate to climate change
Student deliverables	Exercise:
Topic materials	Lesson In order to understand well this chapter, students should read references of [6], [7], and [8]
Outline	1.1. Model Eco-system management by the Millennium Assessment 1.2. IPCC guideline 1.3. Integrated Measuring, Reporting, Verification (MRV) system 1.4. Eco-system management in Mekong Delta
Chapter 4: GOVERNANCE AND SOCIAL SYSTEM	
Learning objectives	Social system innovation to climate change and Practice on design sustainable society
Learning outcomes	· Have capacity and skills to initiate researches or projects relate to climate change, · Contribute to the debate in the policy process for climate change mitigation and adaptation
Student deliverables	Exercise:
Topic materials	Lesson In order to understand well this chapter, students should read references of [9], [10], and [11]

Outline	1.1. Sustainability Governance 1.2. Future Earth Program, FutureCity Project and energy farming 1.3. Sustainability Development Goals (SDGs) in Mekong Delta
Chapter 5: PROJECT DESIGN FOR FUTURE SOCIETY	
Learning objectives	Social system innovation to climate change and Practice on design sustainable society
Learning outcomes	<ul style="list-style-type: none"> · Have capacity and skills to initiate researches or projects relate to climate change, · Contribute to the debate in the policy process for climate change mitigation and adaptation
Student deliverables	Exercise:
Topic materials	Lesson Note: research topics: wetland/peat land, biomass, silviculture/forestry/mangrove, fishery/aquaculture, MRV, ground surface management, SDG, financial mechanism, etc.
Outline	1.1. Guidance of this chapter 1.2. Students Workshop and Presentation 1.3. Discussion

Course Assignments

Course assignments will constitute a multi-part project:

- Assignment #1 -(in-class) – A case of climate change mitigation and adaptation and building resilience and reducing vulnerability in Mekong Delta
- Assignment #2 – Integrated Measuring, Reporting, Verification (MRV) system and
- Assignment #3 – Sustainability Development Goals (SDGs) in Mekong Delta
- Assignment #4: Students Workshop and Presentation (nhóm)

Grading

The students' performance will be based on the following:

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| Assessment | <ul style="list-style-type: none"> • Midterm exam: 20% • Seminar: 30% • Final exam: 50% |
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| Evaluation | <ul style="list-style-type: none"> A (8,5 – 10) B (7,0 – 8,4) C (5,5 - 6,9) D (4,0 – 5,4) |
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Co-funded by the
Erasmus+ Programme
of the European Union

