

JEE696 Greenhouse Gas Measurement, Mitigation and Monitoring Technology (Semester 1/2026)**Assoc. Prof. Dr. Amnat Chidthaisong****Monday: 9.30-12.30 hrs**

Lecture #	Topic	Expected learning points
1	1. State of Knowledge on Climate Change 2. Climate change policy, greenhouse gas emission and reduction targets (UNFCCC, IPCC, and related international agreements)	Understand the objectives and expected outcomes of the course, big picture of climate change and how the knowledge gained from the class fits into that big picture of climate change solution.
2	GHG Emissions: Sources, Sinks and Sectors, IPCC Guidelines for national GHG inventories	Understand the mechanism and aims that the world communities are using to drive cooperations towards emission mitigation.
3	IPCC methodology: Overview and understanding the concept	Understand and able to apply the methodology to measure and estimate greenhouse gas emissions.
4	IPCC methodology: Principle and practices-Land use & forestry	Able to estimate emission and removal in forestry sector
5	IPCC methodology: Principle and practices-Livestock methane & Manure management	Able to estimate emission from livestock
6	IPCC methodology: Principle and practices-Rice cultivation	Able to estimate emission from rice cultivation
7	IPCC methodology: Principle and practices-Managed soils N ₂ O & other non-CO ₂	Able to estimate emission from managed soil
8	Direct measurement: Chamber method-Principle understanding	Understand the concept and basic principle of close chamber method
9	Direct measurement: Chamber method-Lab practice and gas sampling, analysis by using GC and flux calculation	Demonstrate the capacity for close chamber method deployment, gas sampling and analysis and flux calculation.
9	Flux calculation from close chamber method data	Able to estimate fluxes and emissions from the gas analysis data
10	Direct measurement: Eddy covariance technique	Understand the principle and basic concept of Eddy covariance method
11	GHG inventory used in real world: CBAM	Able to apply and link the knowledge gained in the class to solve realistic problem, including the ability to propose solutions for greenhouse emission reduction
12	GHG inventory used in real world: Carbon footprint for organization	
13	GHG inventory used in real world: Carbon footprint of a product	
14	GHG inventory used in real world: Carbon credit	
15	GHG mitigation measures and technology	