

JEE 696 Greenhouse gas Measurement, Monitoring and Mitigation (Semester 2/2025)

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Lecture #	Topics	Content	Expected outcome	Instructor
Modul 1 : Energy sector (5 lectures, 1 credit) 22, 29 Jan. 5, 12, 19 Feb. 2026	1. Basic understanding of state of knowledge and current development related to climate change and climate actions	1. State of Knowledge on Climate Change 2. Climate change policy, greenhouse gas emission and reduction targets (UNFCCC, IPCC, and related international agreements) 3. GHG Emissions: Sources, Sinks and Sectors, IPCC Guidelines for national GHG inventories	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.	AC
			Understand the mechanism and aims that the world communities are using to drive cooperations towards emission mitigation.	AC
	2. Energy sector	Energy sector: Basic data needs	Understand and able to apply the methodology to measure and estimate greenhouse gas emissions from sources in energy sector.	AP
		Energy sector: emission estimate		AP
		Energy sector: Mitigation-baseline, measures, and impacts		AP
Modul 2: IPPU and Waste sector (5 lectures, 1 credit) 26 Feb. 5, 12, 19, 26 Mar. 2026	Topic 1 + 3. IPPU and waste sector	Waste sector: Basics and emission estimate	Understand and able to apply the methodology to measure and estimate greenhouse gas emissions from sources in IPPU and waste sector.	KW
		Waste sector: Mitigation measures and impacts		KW
		Industrial process sector: Basics and emission estimate		AC/Invited
Modul 3: AFOLU and Foot printing (5 lectures, 1 credit) 2, 9, 23, 30 Apr., 7 May 2026	Topic 1 + 4. AFOLU sector + Topic 5	AFOLU sector: Basics and emission estimate	Identify key sources and how to estimate greenhouse emissions from AFOLU sector.	AC
		AFOLU sector: Basics and emission estimate		
		AFOLU sector: Basics and emission estimate		
		AFOLU: Mitigation measures and its impacts		
		AFOLU: Mitigation measures and its impacts		
	5. Market and mechanisms	Carbon neutrality, net zero emission concepts	Applied the knowledge to estimate carbon credit, estimate the baseline and mitigation impacts	
		Carbon footprint: Scope and estimate		
		Carbon credit: Concept and implications		