CEEY 260	CONSTRUCTION DEMOLITION AND WASTE MANAGEMENT	L	T	P	C
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SDG: 11

COURSE OBJECTIVES: The course will impart knowledge on

COB1: waste Generation in construction

COB2: treatment on demolition waste

COB3: processing of demolition waste

COB4: tools used for waste estimation

COB 5: environment degradation due to waste

MODULE I INTRODUCTION 9

Environmental Impact of Building Materials Embodied energy of materials; impact on the local environment; toxicity of the material; Nature and Source Direct and indirect waste; site types and origins; composition; quantity; current recycling/reuse potential of building materials - C & D waste – definition, applicability and waste generating activities – Quantity of Waste generated- Quantifying C & D Waste – Composition – C & D Waste Utilization – Initiatives to promote recycling of C & D waste in India – Codal Provisions

MODULE II WASTE MANAGEMENT 9

Construction and Demolition Waste Management Plans International good practice; planning requirements; demolition plans; site implementation; supplier agreements; sub−contractor management; role of waste management contractor; training; auditing; current markets; current disposal options; health and safety; reporting to local authorities. Hierarchy in waste management - Treatment of Construction and Demolition Waste, waste permits; waste licenses; waste transfer facilities; landfills; treatment technologies; hazardous waste facilities

MODULE III WASTE PROCESSING 9

Designing for Waste Prevention and Minimisation Waste prevention and minimization; client, contractor and designer attitudes; proper maintenance of existing buildings; reuse of existing building structure; design flexibility; design for reuse and recycling; Recycling – Process involved – Centralised/ Decentralised –Barriers - dimensional co−ordination and standardization; modular design; material selection and control.

MODULE IV WASTE FORECASTING TOOL 9

Waste Forecasting Tools Application of WRAP's designing out waste tool for buildings and civil engineering; WRAP net waste tool; BRE SMART Waste; WRAP Site Waste Management Plan Tracker

MODULE V ENVIRONMENTAL DEGRADATION 9

Environmental degradation due to indiscriminate disposal of C & D wastes in cities - Effective C & D Waste Management – Opportunities for resource conservation & employment generation - Dust Generation – Dust Mitigation - Future developments Potential future markets; 'smart' materials; use of eco−materials – Case Studies

L – 45 TOTAL HOURS – 45

TEXTBOOKS:

1. Greg Winkler, "Recycling Construction and Demolition waste: A LEED-Base Toolkit, Mc Grew Hill Professional,2010
2. Springer, "Recycling and Resource Recovery Engineering", Springer-Verlag Berlin Heidelberg (1996)

REFERENCES:

1. Tam.V.M, Chi Ming Tam, "Reuse of Construction and Demolition Waste in Housing Development", Nova Science Publishers, 2008.

COURSE OUTCOMES: On completion of the course, students will be able to

CO1: quantify the construction and demolition waste

CO2: select the type of treatment to be executed

CO3: minimize the waste using different methods

CO4: apply Tools for waste management

CO5: recognize the degradation of environment.

Board of Studies (BoS) : **Academic Council:**

17th BoS of Civil held on 10.08.2022 **19th AC held on 29.09.2022**

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	H		H		L	H	H	H	-		-	-	-	M	H
CO2	H		H		L	H	H	H	-		-	-	-	M	H
CO3	H		H		L	H	H	H	-		-	-	-	M	H
CO4	H		H		L	H	H	H	-		-	-	-	M	H
CO5	H		H		L	H	H	H	-		-	-	-	M	H