

## National Institute of Technology Meghalaya

An Institute of National Importance

**CURRICULUM** 

467	TITUTE OF TECHNOLOGY	, F															
Programm		e Master of Technology									Year of Regulation				2025		
Dep	partmen	nt Civil Engineering Semester										ster					
Cou	<b>I</b>			Co	ourse Name	Pre req	uisite	ite (		redit Structure					stribution		
Code								L	T	P	С	INT	MID	END	Total	_	
CE	588	Simulation & Modelling Lab-II NIL  1. To build advanced modelling skills for simulating complex						0	1	2	2			100	100	-	
			environn	nental sys	stems.			CO1	Able to Develop and simulate environmenta systems using advanced software tools.					ntal			
Course Objectives				-	tant fate and transport in air, water tware tools.	, and soil	Co		CO2	Able to Model the dispersion of pollutants in water bodies and atmosphere.							
		<ol> <li>To apply decision-making models for sustainable engineering solutions.</li> </ol>						Outcomes		Able to Simulate hydrological models and contaminant transport.							
							-		Able to Perform scenario analysis for environmental management.								
		CO5 Able to Integrate mul predictive modelling															
		Mapping with Program Outcomes (POs)											Mapping with PSOs			]	
No.	COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
1	CO1	0	3	3	2	3	2	0	0	3	0	3	3	0	3	2	
2	CO2	0	0	0	2	0	0	0	0	3	0	3	3	0	3	2	
3	CO3	0	3	3	2	3	0	0	0	3	0	3	3	0	3	2	
4	CO4	0	3	3	2	3	0	0	0	3	0	3	3	0	3	2	
5	CO5	0	3	3	2	3	2	0	0	3	0	3	3	0	3	2	
	·	SYLLABUS														_	
No.													COs	_			
I		ulation of atmospheric pollutant dispersion using AERMOD  CO1, CO CO5															
II					nant transport using MODFLOW &	& MT3DMS							3	(	CO1	_	
III					rs/lakes using WASP HEC-HMS or SWAT								3		CO1	_	
IV															l, CO3,	_	
VI					using system dynamics tools vironmental prediction (optional ad	dvanced task	)				-		3		l, CO3, 3, CO4		
VII	Pytho	on or MATLAB scripting for custom simulations  3 CO3, CO4													3, CO4		
VIII	Sensit	sitivity analysis and model validation using field data													3 CO3, CO4		
					Total Hours								24			_	
	L. A.		n, EPAN	 VET 2: Us	sers Manual, Cincinnati, OH, USA	: U.S. Envir	onmental	Protecti	on Agen	cy, 2000							
2.	C. S. 3	Rao, En	vironme	ntal Pollu	tion Control Engineering, 2nd ed.,	, New Delhi,	India: N	ew Age	Internation	onal, 200	)6.						
3.	U.S. I	Invironr	nental Pi	rotection	Agency, Storm Water Managemer	nt Model (SV	WMM) U	ser's Ma	ınual Ver	rsion 5.1	, Cincini	nati, OH	, USA: E	PA, 2015	5.		
4.	Venta	na Syste	ems Inc.,	Vensim	User Guide, Harvard, MA, USA:	Ventana Sys	tems, [Or	nline]. A	vailable:	https://v	ensim.co	om/docu	mentatio	n/		-	
5.	isee s	ystems I	nc., STE	LLA Pro	fessional User Guide, Lebanon, N	H, USA: ise	e systems	, [Online	e]. Availa	able: http	os://wwv	v.iseesy:	stems.coi	n/resourc	es/help/		

6. K. Chang, Introduction to Geographic Information Systems, 9th ed., New York, NY, USA: McGraw-Hill Education, 2021.