

Maulana Azad National Institute of Technology, Bhopal – 462003
Civil Engineering Department

M Tech in Water Resources Engineering

SCHEME OF STUDY (January 2021)

First Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
WR 101	Computational Techniques in Water Resources Engineering	3	-	-	3
WR 102	Applied Hydrology	3	-	-	3
WR 103	Irrigation and Drainage Engineering	3	-	-	3
WR 104	Advanced Hydraulics	3	-	-	3
	Elective-1 (A)	3	-	-	3
	Elective -2 (B)	3	-	-	3
WR 105	Lab-1	-	-	2	1
WR 106	Seminar-1	-	-	2	1
WR 107	Computational Skills NPTEL/ MOOC/ Humanities Deptt.	2	-	-	2
Total Hours: 24 Total Credits: 22		Total Semester Credit			22

Second Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
WR 201	Hydraulic Structures	3	-	-	3
WR 202	Water Resources Systems	3	-	-	3
WR 203	Ground Water Engineering	3	-	-	3
	Elective -3 (A)	3	-	-	3
	Elective -4 (A)	3	-	-	3
	Elective -5 (C)	3	-	-	3
WR 204	Lab-2	-	-	2	1
WR 205	Research Methodology, Technical Report and Paper Writing	-	2	-	2
WR 206	Seminar-2	-	-	2	1
Total Hours: 24 Total Credits: 44		Total Semester Credit			22

Third Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
WR 301	Dissertation Phase-1	-	-	32	16
Total Hours: 32 Total Credits: 60		Total Semester Credit			16

Fourth Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
WR 401	Dissertation Phase-2	-	-	40	20
Total Hours: 40 Total Credits: 80		Total Semester Credit			20

List of Electives A		List of Electives B	
WR501	Flood Measurement and Management	GI103	Basics of Remote Sensing Technology
WR502	Integrated Watershed Management	HY103	Hydro Power Potential Assessment
WR503	Transient Flow Analysis	HY101	Computational Fluid Dynamics
WR504	Modeling and Simulation in Water Resources	GE103	Advanced Foundation Engg.
WR505	Design of spillways and Hydraulic Energy Dissipaters	List of Electives C	
WR506	Sediment Transportation	ID203	Advanced Product Design
WR507	Reservoir Planning and Management	IT202	Failure Analysis & Prevention
WR508	Finite Element Method	AM202	Advanced Composite Materials
WR509	Rainwater Harvesting Recycling and Reuse	SV203	Theory of Vibration II
WR510	Impact of Climate Change on Water Resources	TH202	Thermal Environmental Engineering
WR511	Dam Engineering	PS201	Modern Control Systems
		ED202	Advanced Control Systems
		VE202	VLSI Technology
		DC203	Digital Image Processing
		AC203	Optimization Techniques
		AI202	Deep Learning
		CN203	Graph Theory & Network Algorithm
		IS201	Applied Cryptography
		MS202	Deformation Behavior of Materials
		CH203	Industrial Safety & Hazard Management
		HS1204	Housing Finance
		UP1203	Infrastructure Planning
		NT201	Nano Structures Characterization Techniques
		BI203	Optimization Techniques & Graph
		CSB201	Mathematical Modeling & Simulation of Biological Systems
		RE202	Solar Energy Systems
		ES202	Energy Management in Buildings
		BIO201	Cheminformatics & Drug Designing

Group A: Program Electives.

Group B: Departmental Electives.

Group C: Open Electives.

{It may also be opted as NPTEL Course after approval from Chairman Senate}