



MAULANA AZAD

NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL – 462003

M.Tech in Water Resource Engineering and Management

SCHEME M.Tech (w.e.f. July 2024)

First Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
CE WM 1101	Applied Hydrology	3	-	-	3
CE WM 1102	Computational Techniques in Water Resources	3	-	-	3
CE WM 1103	Advanced Hydraulics	3	-	-	3
	Program Elective - 1	3	-	-	3
	Program Elective - 2	3	-	-	3
CE WM 1104	Lab-I: Hydraulics Laboratory	-	-	2	1
CE WM 1105	Lab-II: Computational Laboratory I	-	-	2	1
CE WM 1106	Seminar-I	-	-	2	1
CE WM 1107	Minor Project-1 (Self Learning)				2
HS PG	Communications Skill	-			-
Total Hours: 23		Total Semester Credits			20
Total Credits: 20					

Second Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
CE WM 1201	Water Resources Systems Planning and Management	3	-	-	3
CE WM 1202	Integrated Watershed Management	3	-	-	3
	Program Elective – 3	3	-	-	3
	Program Elective - 4	3	-	-	3
	Open Elective	3	-	-	3
CE WM 1203	Lab-I: Hydrology Laboratory	-	-	2	1
CE WM 1204	Lab-II: Computational Laboratory II	-	-	2	1
CE WM 1205	Seminar-II	-	-	2	1
CE WM 1206	Minor Project-2 (Self Learning)				2
Total Hours: 23+2 (Minor Project)		Total Semester Credits			20
Total Credits: 40					

*CE WM 1175/ CE WM 1275 Research Methodology proposed to be included in Elective

Third Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
CE WM 2101	Dissertation Phase-I	-	-	40	20
Total Hours: 40 Total Credits: 60		Total Semester Credits			20

Fourth Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
CE WM 2201	Dissertation Phase-II	-	-	40	20
Total Hours: 40 Total Credits: 80		Total Semester Credits			20



Codes of Open Elective will be provided by respective department

List of Program Electives		List of Open Electives	
CE WM 1151 / CE WM 1251	Stochastic Hydrology		Introduction to Urban Planning
CE WM 1152 / CE WM 1252	Disaster Management		Bioprocess Engineering
CE WM 1153 / CE WM 1253	Urban Water Management		Biophysics Tools and Techniques
CE WM 1154 / CE WM 1254	Water Conveyance System Development and Operation		Analytical Techniques
CE WM 1155 / CE WM 1255	Design of Hydraulic Structures		Green Technology & Processes
CE WM 1156 / CE WM 1256	Irrigation Management for Sustainable Development		Machine Learning
CE WM 1157 / CE WM 1257	Reservoir Planning and Management		Advanced Data Structures and Algorithms
CE WM 1158 / CE WM 1258	AI/ML Based Applications in Civil Engineering		Nanotechnology and Nanoscience
CE WM 1159 / CE WM 1259	Introduction to Flow and Transport in Porous Media		Electric Machines & Applications
CE WM 1160 / CE WM 1260	River Engineering		Control and Instrumentation
CE WM 1161 / CE WM 1261	Hydropower Engineering		Introduction to Fuzzy Logic
CE WM 1162 / CE WM 1262	Environmental Impact Assessment of Water Resources Projects		Neural Networks and its Applications
CE WM 1163 / CE WM 1263	Flood Estimation and Control		Energy Resource Technologies
CE WM 1164 / CE WM 1264	Advanced Hydrological Modelling		Intellectual Property Rights for Engineers

CE WM 1165 / CE WM 1265	Impact of Climate Change on Water Resources		Applied Psychology: Human Centered Design and Engineering
CE WM 1166 / CE WM 1266	Dam Engineering		Advanced Operations Research
CE WM 1167 / CE WM 1267	Ecohydroclimatology		Computing Technologies
CE WM 1168 / CE WM 1268	Groundwater Engineering and Management		Value Engineering
CE WM 1169 / CE WM 1269	Optimization Methods		Design Thinking
CE WM 1170 / CE WM 1270	Hydraulics of Sediment Transport		Mechatronics and NDT in Engineering
CE WM 1171 / CE WM 1271	Computational Fluid Dynamics		Advanced Instrumentation Methods for Material Analysis
CE WM 1172 / CE WM 1272	Coastal Engineering		Smart Materials and their Application
CE WM 1173 / CE WM 1273	Environmental Hydraulics		Engineering Startup Management
CE WM 1175 / CE WM 1275	Research Methodology		

