

**Course structure of M. Tech. (Dam Safety and Rehabilitation)**

**INTERNATIONAL CENTRE FOR DAMS**

**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: XX M. Tech. (Dam Safety and Rehabilitation)

Year: I

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Semester- I (Autumn)</b>														
1.	DS-501	Assessing and Managing Risks Associated with Dams	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
2.	DS-502	Basics of Disaster Management and its Implementation Concepts	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
3.	DS-503	Hydrologic Safety Evaluation of dams	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
4.		Programme Elective Course -I	PEC	4										
5.		Programme Elective Course -I	PEC	4										
		Total		20	9	3								

**Note: \* Weightage of the CWS, PRS, MTE, and PREE may vary in accordance with the prevailing rule of the Institute.**

Semester-II (Spring)														
1.	DS-504	Sediment Management in Reservoirs	PCC	4	3	1	-	3	-	20-35	-	20-30	40-50	0
2.	DS-505	Dam Safety Surveillance, Instrumentation and Monitoring	PCC	4	2	1	2/2	3	-	15-30	20	15-25	30-40	0
3.	DS-701	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-
4.		Programme Elective Course -I	PEC	4										
5.		Programme Elective Course -II	PEC	4										
6.		Programme Elective Course -III	PEC	4										
		Total		22	5	2	1							

\*Credit requirement for PG Diploma/ I<sup>st</sup> year M. Tech is 42 credits.

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**INTERNATIONAL CENTRE FOR DAMS****INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: XX M. Tech. (Dam Safety and Rehabilitation)

Year: II

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Semester- I (Autumn)</b>														
1.	DS-701A	Dissertation Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
Note: Students can take 1 or 2 audit courses as advised by the supervisor if required.														

<b>Semester-II (Spring)</b>														
1.	DS-701B	Dissertation Stage–II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

<b>Summary</b>				
Semester	1	2	3	4
<b>Semester-wise Total Credits</b>	<b>20</b>	<b>22</b>	<b>12</b>	<b>18</b>
<b>Total Credits</b>	<b>72</b>			

### List of Programme of Electives Courses

Teaching Scheme					Contact Hours/ Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	DS-511	Seepage through Dams	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
2.	DS-512	Assessment and Management of Environmental issues in Reservoirs	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
3.	DS-513	Earthquake Geotechnical Engineering	PEC	4	2	1	2/2	3	-	15-30	20	15-25	30-40	-
4.	DS-514	Study tour/ Case studies	PEC	4	2	1	2/2	3	-	15-30	20	15-25	30-40	-
5.	DS-515	Geo-Mechanics	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
6.	DS- 516	Geospatial Technology for Monitoring of Dams	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
7.	DS- 517	Hydraulic and structural design of dams, spillways and energy dissipators	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-

8.	DS-518	Ground Improvement and Geosynthetics	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
9.	DS-519	Contract and Financial Management	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
10.	DS-520	Sustainable Tourism around Dams	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
11.	DS-521	Earth Retaining Structures and Dams (Concrete, RCC, CFRD, Arch, Earth, Rockfill dams & Barrages)	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
12.	DS- 522	Seismic Safety of Embankment Dams	PEC	4	2	1	2/2	3	-	15-30	20	15-25	30-40	-
13.	DS-523	Concepts of Planning & Design of Hydro-Mechanical Components in Dams	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-
14.	DS-524	Engineering Seismology and Hazard Assessment for dams	PEC	4	3	1	-	3	-	20-35	-	20-30	40-50	-

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