

**PG-Curriculum Structure (Water Resources Engg.)**  
**1<sup>st</sup> Semester**

S.No.	Course Code	Course Name	L	T	P	Credits
1	CEN 541	Programme Core-I (Advanced Fluid Mechanics)	3	0	0	3
2	CEN542	Programme Core-II (Free Surface Flow)	3	0	0	3
3	CEN 599	Programme Open Core-I (Numerical Methods and Optimization Techniques)	3	0	0	3
4		Programme Elective-I	3	0	0	3
5		Programme Elective-II	3	0	0	3
6	CEN 553P	Programme Lab-I(Hydraulic Engineering Lab-I)	0	0	3	2
<b>Total</b>						<b>17</b>

**2<sup>nd</sup> Semester**

S.No.	Course Code	Course Name	L	T	P	Credits
1	ENN505	Design of Experiments & Research Methodology (Open Core-II)	3	0	0	3
2	CEN 543	Programme Core-III (Advanced Hydrology)	3	0	0	3
3	CEN 544	Programme Core-IV (Water Resources Planning & Management)	3	0	0	3
4		Programme Elective-III	3	0	0	3
5		Open Elective *	3	0	0	3
6	CEN554P	Programme Lab-II**(Hydraulic Engineering Lab-II)	0	0	3	2
<b>Total</b>						<b>17</b>

- \*It could be intra/inter departmental ME course.
- \*\*To include minimum of 2 industrial visits of half day duration to nearby industries.

### 3<sup>rd</sup> Semester

S.No.	Course Code	Course Name	L	T	P	Credits
1.	CEN601	Case Studies and Industrial/ Field visits *	0	0	2	1
2.	CEN602	Seminar	0	0	2	1
3.	CEN698	Project/Industry-based Project	0	0	24	12
<b>Total</b>						<b>14</b>

\* to include 4-5 invited lectures from Industry Experts

### 4<sup>th</sup> Semester

S.No.	Course Code	Course Name	L	T	P	Credits
1	CEN 699	Project/Industry-based Project-II	0	0	36	18
<b>Total</b>						<b>18</b>

**Total Credits: 17+17+14+18 = 66**

**Program Elective-I (Any One)**

Course Code	Course Name	L T P	Credits
CEN 545	Irrigation and Drainage Design	3-0-0	3
CEN 549	Hydro Power Engineering	3-0-0	3
CEN 551	Flood Control and River Training Works	3-0-0	3
CEN 552	Watershed Management	3-0-0	3
<b>Total</b>			<b>03</b>

**Program Elective-II (Any One)**

Course Code	Course Name	L T P	Credits
CEN 546	Ground Water Engineering	3-0-0	3
CEN 550	Embankment Dams	3-0-0	3
CEN 534	Advance Soil Engineering	3-0-0	3
CEN 535	Advance Engineering Geology	3-0-0	3
<b>Total</b>			<b>03</b>

**Program Elective-III (Any One)**

Course Code	Course Name	L T P	Credits
CEN 547	Fluvial Hydraulics	3-0-0	3
CEN 548	Design of Hydraulic Structures	3-0-0	3
CEN 510	Bridge Engineering	3-0-0	3
CEN 514	Advanced Foundation Engineering	3-0-0	3
<b>Total</b>			<b>03</b>
<b>Program Elective Total</b>		<b>9-0-0</b>	<b>09</b>

**Open Elective**

Course Code	Course Name	L T P	Credits
CEN 548	Design of Hydraulic Structures	3-0-0	3
<b>Total</b>			<b>03</b>