

SRI VENKATESWARA UNIVERSITY COLLEGE OF ENGINEERING: TIRUPATI – 517 502
Department of Civil Engineering-Scheme of Instruction- (CBCS) effective from the Academic Year 2023-2024

M.Tech (PG) Specialization: ENVIRONMENTAL ENGINEERING

I Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	EE11C	Advanced Water Treatment	3	1	0	4	4	40	60	100
PCC	EE12C	Air Pollution and Control	3	1	0	4	4	40	60	100
PCC	EE13C	Environmental Microbiology	3	1	0	4	4	40	60	100
PEC	EE14C	Programme Elective Course – I*	3	0	0	3	3	40	60	100
PEC	EE15C	Programme Elective Course – II*	3	0	0	3	3	40	60	100
PCC	EE11L	Environmental Engineering Lab - I	0	0	3	3	1.5	40	60	100
PCC	EE12L	Environmental Engineering Lab - II	0	0	3	3	1.5	40	60	100
MC	PG11C	Research Methodology and IPR	3	0	0	3	3	40	60	100
	Total		18	3	6	27	24	320	480	800

Course Code	List of Programme Elective Course I (EE14C)	Course Code	List of Programme Elective Course II (EE15C)
1	Environmental Chemistry	1	Climate Change
2	Environmental Quality and Pollution Monitoring Techniques	2	Noise Pollution and Control
3	Rural Water Supply and Onsite Sanitation System	3	Ground Water Contamination
4	Ecological Engineering and Stream Ecology	4	Transport of Water and Wastewater



*Students of a particular specialization of a department can also take Core/Elective courses of other specializations offered in the same department as Elective courses.

II Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	EE21C	Advanced Wastewater Treatment	3	1	0	4	4	40	60	100
PCC	EE22C	Municipal Solid Waste Management	3	1	0	4	4	40	60	100
PEC	EE23C	Programme Elective Course – III*	3	0	0	3	3	40	60	100
PEC	EE24C	Programme Elective Course – IV*	3	0	0	3	3	40	60	100
PCC	EE21L	Environmental Modeling Lab	0	0	3	3	1.5	40	60	100
PCC	EE22L	Unit Operations and Processes laboratory	0	0	3	3	1.5	40	60	100
MC	PG21C	Value Added course**	2	0	2	4	3	100	-	100
PCC	MP21C	Mini Project with Seminar	1	1	0	2	2	100	-	100
	Total		15	3	8	26	22	440	360	800

Course Code	List of Programme Elective Courses III (EE23C)	Course Code	List of Programme Elective Courses IV (EE24C)
1	Industrial Wastewater Treatment	1	Environmental Impact Assessment
2	Urban Water Management	2	Sustainable Engineering and Technology
3	Hazardous Waste Management	3	Bioremediation
4	Wastewater Reclamation and Reuse	4	Environmental Legislation and Audit

** Value Added course - Cyber Security



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III Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
OEC	PG31C	Open Elective Course (MOOCs)	0	0	0	0	3	100	-	100
PCC	SE32S	Industrial/ Research Internship (Min of 4 Weeks)	0	0	0	0	3	100	-	100
PCC	DW31C	Dissertation Work Phase-I	0	0	24	24	12	40	60	100
	Total		0	0	24	24	18	240	60	300

IV Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	DW41C	Dissertation Work Phase-II and Viva-Voce	0	0	20	20	10 + 06 = 16	40	60	100
	Total		0	0	20	20	16	40	60	100



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SRI VENKATESWARA UNIVERSITY COLLEGE OF ENGINEERING: TIRUPATI – 517 502
Department of Civil Engineering-Scheme of Instruction- (CBCS) effective from the Academic Year 2023-2024

M.Tech (PG) Specialization: GEOTECHNICAL ENGINEERING

I Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	GE11C	Advanced Soil Mechanics	3	1	0	4	4	40	60	100
PCC	GE12C	Advanced Foundation Engineering	3	1	0	4	4	40	60	100
PCC	GE13C	Earth Retaining Structures	3	1	0	4	4	40	60	100
PEC	GE14C	Programme Elective- I	3	0	0	3	3	40	60	100
PEC	GE15C	Programme Elective- II	3	0	0	3	3	40	60	100
PCC	GE11L	Geotechnical Engineering Lab - 1	0	0	3	3	1.5	40	60	100
PCC	GE12L	Geotechnical Engineering Lab - 2	0	0	3	3	1.5	40	60	100
MC	PG11C	Research Methodology and IPR	3	0	0	3	3	40	60	100
	Total		18	3	6	27	24	320	480	800

Course Code	List of Programme Elective Course I (GE14C)	Course Code	List of Programme Elective Course II (GE15C)
1	Soil Structure Interaction	1	Earth & Rockfill Dams
2	Ground Improvement Techniques	2	Environmental Geotechnology
3	Pavement Analysis and Design	3	Critical State Soil Mechanics
4	Physical and Constitutive Modelling in Geomechanics	4	Deep Foundations

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II Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	GE21C	Dynamics of Soils and Foundations	3	1	0	4	4	40	60	100
PCC	GE22C	Subsurface Investigations and Instrumentation	3	1	0	4	4	40	60	100
PEC	GE23C	Programme Elective Course – III*	3	0	0	3	3	40	60	100
PEC	GE24C	Programme Elective Course – IV*	3	0	0	3	3	40	60	100
PCC	GE21L	Sub Soil Exploration Lab	0	0	3	3	1.5	40	60	100
PCC	GE22L	Numerical Analysis Lab	0	0	3	3	1.5	40	60	100
MC	PG21C	Value Added course**	2	0	2	4	3	100	-	100
PCC	MP21C	Mini Project with Seminar	1	1	0	2	2	100	-	100
	Total		15	3	8	26	22	440	360	800

Course Code	List of Programme Elective Courses III (GE23C)	Course Code	List of Programme Elective Courses IV (GE24C)
1	Marine Geotechnics	1	Design of underground excavations
2	Computational Geomechanics	2	Foundation on Expansive Soils
3	Engineering rock mechanics	3	Stability Analysis of Slopes
4	Geotechnical Earthquake Engineering	4	Foundations on Weak Rocks

** Value Added course - Cyber Security



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III Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
OEC	PG31C	Open Elective Course (MOOC _s)	0	0	0	0	3	100	-	100
PCC	SE32S	Industrial/ Research Internship (Min of 4 Weeks)	0	0	0	0	3	100	-	100
PCC	DW31C	Dissertation Work Phase-I	0	0	24	24	12	40	60	100
	Total		0	0	24	24	18	240	60	300

IV Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	DW41C	Dissertation Work Phase-II and Viva-Voce	0	0	20	20	10 + 06 = 16	40	60	100
	Total		0	0	20	20	16	40	60	100

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SRI VENKATESWARA UNIVERSITY COLLEGE OF ENGINEERING: TIRUPATI – 517 502
Department of Civil Engineering-Scheme of Instruction- (CBCS) effective from the Academic Year 2023-2024

M.Tech (PG) Specialization: WATER RESOURCE ENGINEERING

I Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	WR11C	Advanced Fluid Mechanics	3	1	0	4	4	40	60	100
PCC	WR12C	Free Surface Flows	3	1	0	4	4	40	60	100
PCC	WR13C	Watershed management and Modelling	3	1	0	4	4	40	60	100
PEC	WR14C	Programme Elective- I*	3	0	0	3	3	40	60	100
PEC	WR15C	Programme Elective- II*	3	0	0	3	3	40	60	100
PCC	WR11L	Advanced Fluid Mechanics Lab	0	0	3	3	1.5	40	60	100
PCC	WR12L	Advanced Hydrology Lab	0	0	3	3	1.5	40	60	100
MC	PG11C	Research Methodology and IPR	3	0	0	3	3	40	60	100
	Total		18	3	6	27	24	320	480	800

Course Code	List of Programme Elective Course I (WR14C)	Course Code	List of Programme Elective Course II (WR15C)
1	Fluvial Hydraulics	1	Water Resources System Planning
2	Hydraulic Structures	2	Irrigation and Drainage
3	Systems Engineering	3	Water Power Engineering
4	Hydraulic Modeling and Experimental techniques	4	Urban Hydrology



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II Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	WR21C	Advanced Hydrology	3	1	0	4	4	40	60	100
PCC	WR22C	Groundwater Engineering	3	1	0	4	4	40	60	100
PEC	WR23C	Programme Elective Course – III*	3	0	0	3	3	40	60	100
PEC	WR24C	Programme Elective Course – IV*	3	0	0	3	3	40	60	100
PCC	WR21L	Computational Fluid Dynamics Lab	0	0	3	3	1.5	40	60	100
PCC	WR22L	Open Chanel Flow Lab	0	0	3	3	1.5	40	60	100
MC	PG21C	Value Added course**	2	0	2	4	3	100	-	100
PCC	MP21C	Mini Project with Seminar	1	1	0	2	2	100	-	100
Total			15	3	8	26	22	440	360	800

Course Code	List of Programme Elective Courses III (WR23C)	Course Code	List of Programme Elective Courses IV (WR24C)
1	Computational Methods in Fluid Mechanics	1	Environmental Hydraulics
2	Theory and Applications of GIS	2	Advanced Numerical Analysis
3	Hydrogeology and Geophysical exploration of groundwater	3	River Water Management
4	Coastal Engineering	4	Theory of Seepage and groundwater movement

** Value Added course - Cyber Security



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III Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
OEC	PG31C	Open Elective Course (MOOCs)	0	0	0	0	3	100	-	100
PCC	SE32S	Industrial/ Research Internship (Min of 4 Weeks)	0	0	0	0	3	100	-	100
PCC	DW31C	Dissertation Work Phase-I	0	0	24	24	12	40	60	100
	Total		0	0	24	24	18	240	60	300

IV Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	DW41C	Dissertation Work Phase-II and Viva-Voce	0	0	20	20	10 + 06 = 16	40	60	100
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Department of Civil Engineering-Scheme of Instruction- (CBCS) effective from the Academic Year 2023-2024

M.Tech (PG) Specialization: STRUCTURAL ENGINEERING

I Semester

Category	Course Code	Course Title	Scheme of Instruction (Hours/Week)				No. of Credits	Scheme of Evaluation		
			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	SE11C	Advanced Structural Analysis	3	1	0	4	4	40	60	100
PCC	SE12C	Advanced Solid Mechanics	3	1	0	4	4	40	60	100
PCC	SE13C	Design of Pre-stressed Concrete Structures	3	1	0	4	4	40	60	100
PEC	SE14C	Programme Elective- I	3	0	0	3	3	40	60	100
PEC	SE15C	Programme Elective- II	3	0	0	3	3	40	60	100
PCC	SE11L	Structural Design Lab	0	0	3	3	1.5	40	60	100
PCC	SE12L	Advanced Solid Mechanics Lab	0	0	3	3	1.5	40	60	100
MC	PG11C	Research Methodology and IPR	3	0	0	3	3	40	60	100
Total			18	3	6	27	24	320	480	800

Course Code	List of Programme Elective Course I (SE14C)	Course Code	List of Programme Elective Course II (SE15C)
1	Analytical and Numerical Methods for Structural Engineering	1	Structural Health Monitoring
2	Theory and Applications of Cement Composites	2	Quality Control and Safety Management
3	Theory of Structural Stability	3	Maintenance and Rehabilitation of Structures
4	Advanced Steel Design	4	Fracture Mechanics of Concrete Structures

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			Lecture	Tutorial	Practical	Total		Sessional Marks	Semester End Examination Marks	Total
PCC	SE21C	FEM in Structural Engineering	3	1	0	4	4	40	60	100
PCC	SE22C	Structural Dynamics	3	1	0	4	4	40	60	100
PEC	SE23C	Programme Elective Course – III	3	0	0	3	3	40	60	100
PEC	SE24C	Programme Elective Course - IV	3	0	0	3	3	40	60	100
PCC	SE21L	Model Testing Lab	0	0	3	3	1.5	40	60	100
PCC	SE22L	Numerical Analysis Lab	0	0	3	3	1.5	40	60	100
MC	PG21C	Value Added course	2	0	2	4	3	100	-	100
PCC	MP21C	Mini Project with Seminar	1	1	0	2	2	100	-	100
	Total		15	3	8	26	22	440	360	800

Course Code	List of Programme Elective Courses III (SE23C)	Course Code	List of Programme Elective Courses IV (SE24C)
1	Design of Thin Plates and Shells	1	Design of Advanced Concrete Structures
2	Design of Bridges	2	Advanced Construction Techniques
3	Design of High-Rise Structures	3	Low cost Housing Techniques
4	Design of Earthquake Resistant Structures	4	Design of Industrial Structure

** Value Added course - Cyber Security

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PCC	SE32S	Industrial/ Research Internship (Min of 4 Weeks)	0	0	0	0	3	100	-	100
PCC	DW31C	Dissertation Work Phase-I	0	0	24	24	12	40	60	100
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PCC	DW41C	Dissertation Work Phase-II and Viva-Voce	0	0	20	20	10 + 06 = 16	40	60	100
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