

SRI VENKATESWARA UNIVERSITY COLLEGE OF ENGINEERING: TIRUPATI – 517 502

Department of Civil Engineering

Scheme of Instruction- (CBCS)

Effective from the batch of students admitted from the academic year 2023-24)

M.Tech (PG) Specialization: ENVIRONMENTAL ENGINEERING

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

I Semester

Course Code	List of Programme Elective Course I (EE14L)	Course Code	List of Programme Elective Course II (EE15L)
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

*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.

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	20	20	18	240	60	300

Open Electives (MOOCs)	
1.	Business Analytics
2.	Industrial Safety
3.	Waste to Energy
4.	Cost Management of Engineering Projects
5.	Composite Materials
6.	Cyber security

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	160	100

*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.

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

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

I Semester

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

II Semester

*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.

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

III Semester

*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.

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	20	20	18	240	60	300

Open Electives (MOOCs)	
1.	Business Analytics
2.	Industrial Safety
3.	Waste to Energy
4.	Cost Management of Engineering Projects
5.	Composite Materials
6.	Cyber security

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	160	100

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M.Tech (PG) Specialization: WATER RESOURCE ENGINEERING

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

I Semester

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

*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	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

*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.

4	Coastal Engineering	4	Theory of Seepage and groundwater movement
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** Value Added course - Cyber Security

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	20	20	18	240	60	300
Open Electives (MOOCs)										
		1. Business Analytics								
		2. Industrial Safety								
		3. Waste to Energy								
		4. Cost Management of Engineering Projects								
		5. Composite Materials								
		6. Cyber security								

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	0	0	20	20	10 + 06 =	40	60	100

*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.

		and Viva-Voce					16			
	Total		0	0	20	20	16	40	160	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

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

I Semester

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

*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.

3	Theory of Structural Stability	3	Maintenance and Rehabilitation of Structures
4	Advanced Steel Design	4	Fracture Mechanics of Concrete Structures

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	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 (SE23L)	Course Code	List of Programme Elective Courses IV (SE24L)
1	Theory 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

*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.

4	Design of Earthquake Resistant Structures	4	Design of Industrial Structure
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** Value Added course - Cyber Security

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	20	20	18	240	60	300
			Open Electives (MOOCs)							
1.			Business Analytics							
2.			Industrial Safety							
3.			Waste to Energy							
4.			Cost Management of Engineering Projects							
5.			Composite Materials							
6.			Cyber security							

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	0	0	20	20	10 + 06 =	40	60	100

*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.

		and Viva-Voce					16			
	Total		0	0	20	20	16	40	160	100

*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.