

**Walchand College of Engineering, Sangli**

(An Autonomous Institute)



**Curriculum (Structures)**

for

**M.Tech. Programme in**

**Civil Environmental Engineering**

**Academic Year 2016-17**



## Walchand College of Engineering, Sangli

(An Autonomous Institute)

### Teaching and Evaluation Scheme Effective from 2016-17 M.Tech. Program in Civil (Environmental Engineering) Semester I

Course Code	Course	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max. Marks	Min. for Passing	
2IC503 (3CV633)	Project Management for Civil Engineers	2	--	--	2	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2IE5** (2EE623)	Institute Elective -I	3	--	--	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV5** (2CE6**)	Professional Elective-I	3	--	--	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV501 (2CE601)	Municipal Solid Waste Management	3	--	--	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV502 (2CE602)	Environmental chemistry and Instrumental methods	3	0	--	4	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV503 (2CE603)	Unit operations and processes in Environmental Engineering - I	3	1	--	4	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV551 (2CE651)	Environmental Monitoring Laboratory I	--	--	4	2	ISE	50	20	
						ESE (POE)	50	20	
2EV552 (2CE652)	Treatability studies Laboratory I	--	--	2	1	ISE	50	20	
						ESE (POE)	50	20	
2EV541 (2CE653)	Industrial Seminar	2 <sup>#</sup>			1	ISE	100	40	
Total		17	1	6	23	Total Credit: 23 Total Contact Hours/Week: 26 hrs			

*Note: Course code in the bracket indicates pre-revised code*



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Teaching and Evaluation Scheme Effective from 2016-17  
**M.Tech. Program in Civil (Environmental Engineering)**  
Semester II

Course Code	Course	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max Marks		Min for Passing
2IC504 (3CV634)	Research Methodology for Civil Engineers	2	--	--	2	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2IE5** (2IE6**)	Institute Elective - II	3	--	--	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV5** (2CE6**)	Professional Elective - II	3	--	--	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV521 (2CE621)	Unit operations and processes in Environmental Engineering - II	3	1	--	4	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV522 (2CE622)	Air pollution and control	3	0	--	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV523 (2CE623)	Environmental management systems	3	--	--	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2EV571 (2CE671)	Environmental Monitoring Laboratory II	--	--	4	2	ISE	50	20	
						ESE (POE)	50	20	
2EV572 (2CE672)	Treatability studies Laboratory II	--	--	4	2	ISE	50	20	
						ESE (POE)	50	20	
2EV542 (2CE673)	Pre-Dissertation Seminar	2 <sup>#</sup>			1	ISE	100	40	
Total		17	1	8	23	Total Credit: 23 Total Contact Hours/Week: 28 hrs			

**List of Professional Electives:**

Course Code	Course name
2EV511 (2CE631)	Geo-Environmental Engineering
2EV512 (2CE632)	Water Quality Modeling
2EV513 (2CE633)	Hydraulics of Transport Systems in Environmental Engineering
2EV514 (2CE634)	Hazardous Waste Management
2EV515 (2CE635)	Emerging Technologies in Water and Wastewater Treatment
2EV531 (2CE636)	Energy and Buildings
2EV532 (2CE637)	Operation and Maintenance of Environmental Facilities

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 Teaching and Evaluation Scheme for Year 2016-17  
**M.Tech. Program in Civil (Environmental Engineering)**  
 Semester III

Course Code	Course	Teaching Scheme			Evaluation Scheme			
		L	T	P	Component	Credits	Practical (Marks )	
							Max	Min for Passing
2EV 690 (2CE643)	Industrial Training (During Summer Term)				ISE	1	100	40
2EV691 (2CE691)	Dissertation Phase 1 ISE	--	--	5	ISE 1	3	100	40
2EV692 (2CE692)	Dissertation Phase 2 ISE	--	--		ISE 2	2	100	40
2EV 693 (2CE 692)	Dissertation Phase 2 ESE				ESE 1	4	100	40
Total		--	--	5	Total Credits: 10 Average Contact hours/week/student: 5 Hrs			

**Semester IV**

Course Code	Course	Teaching Scheme			Evaluation Scheme			
		L	T	P	Component	Credits	Practical (Marks %)	
							Max	Min for Passing
2EV694 (2CE693)	Dissertation Phase 3 ISE	--	--	5	ISE 3	5	100	40
2EV695 (2CE694)	Dissertation Phase 4 ISE	--	--		ISE 4	5	100	40
2EV 696 (2CE 694)	Dissertation Phase 4 ESE				ESE 2	10	100	40
Total		--	--	5	Total Credits: 20 Average Contact hours/week/student: 5 Hrs			

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Teaching and Evaluation Scheme Effective from 2016-17

**M.Tech. Program in Civil Structural Engineering**

Semester I

Course Code	Course	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max Marks	Min for Passing	
2IC502 (2IC602)	Project Management	2	-	-	2	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2IE5** (2AM***)	Institute Elective-I	3	-	-	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST5** (2AM7**)	Professional Elective-I	3	1	-	4	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST501 (2AM701)	Theory of Elasticity and Plasticity	3	1	-	4	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST502 (2AM702)	Mechanics of Structures	3	-	-	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST503 (2AM703)	Dynamics of structures	3	-	-	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST551 (2AM751)	Mechanics of Structures Lab	-	-	2	1	ISE	50	20	
						ESE (OE)	50	20	
2ST552 (2AM752)	Structural Dynamics Lab	-	-	2	1	ISE	50	20	
						ESE (OE)	50	20	
2ST541 (2AM755)	Seminar	2 <sup>#</sup>			1	ISE	100	40	
Total		17	2	4	22	Total Credits: 22; Total Contact Hours/Week : 25 hrs			

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**M.Tech. Program in Civil Structural Engineering**

**Semester II**

Course Code	Course	Teaching Scheme				Evaluation Scheme			
		L	T	P	Credits	Component	Marks		
							Max Marks	Min for Passing	
2IC501 (2IC601)	Research Methodology	2	-	-	2	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2IE5** (2AM***)	Institute Elective-II	3	-	-	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST5** (2AM7**)	Professional Elective-II	3	1	-	4	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST521 (2AM721)	Theory of Plates and Shells	3	1	-	4	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST522 (2AM722)	Advanced Design of Steel Structures	3	-	-	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST523 (2AM723)	Earthquake Engineering	3	-	-	3	ISE 1	10	20	40
						MSE	30		
						ISE 2	10		
						ESE	50		
2ST571 (2AM761)	Advanced Design of Steel Structures Lab	-	-	2	1	ISE	50	20	
						ESE (OE)	50	20	
2ST572 (2AM762)	Earthquake Engineering Lab	-	-	2	1	ISE	50	20	
						ESE (OE)	50	20	
2ST542 (2AM756)	Pre-Dissertation Seminar			2 <sup>#</sup>	1	ISE	100		40
Total		17	2	4	22	Total Credit: 22 Total Contact Hours/Week : 25 hrs			

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Semester III

Course Code	Course	Teaching Scheme			Evaluation Scheme			
		L	T	P	Component	Credits	Marks	
							Max	Min for Passing
2ST691 (2AM 781)	Dissertation Phase ISE 1	--	--	5	ISE 1	4	100	40
2ST692 (2AM 782)	Dissertation Phase ISE 2	--	--		ISE 2	2	100	40
2ST693 (2AM 782)	Dissertation Phase ESE 1				ESE 1	4	100	40
Total		--	--	5	Total Credits: 10 Average Contact hours/week/student: 5 Hrs			

**Semester IV**

Course Code	Course	Teaching Scheme			Evaluation Scheme			
		L	T	P	Components	Credits	Marks	
							Max	Min for Passing
2ST694 (2AM 783)	Dissertation Phase ISE 3	--	--	5	ISE 3	5	100	40
2ST695 (2AM 784)	Dissertation Phase ISE 4	--	--		ISE 4	5	100	40
2ST696 (2AM 784)	Dissertation Phase ESE 2				ESE 2	10	100	40
Total		--	--	5	Total Credits: 20 Average Contact hours/week/student: 5 Hrs			

**List of Electives**

Course Code	Professional Elective I	Course Code	Professional Elective II
2ST511 (2AM 711)	Advanced Design of Reinforced Concrete Structures	2ST531 (2AM 731)	Design of R.C.C. Bridges
2ST512 (2AM 712)	Advances in Concrete Composites	2ST532 (2AM 732)	Computer Aided Design
2ST513 (2AM 713)	Design of Tall Structures	2ST533 (2AM 733)	Stability of Structures
2ST514 (2AM 714)	Reliability Analysis and Design	2ST534 (2AM 734)	Design Optimization