

Sanjivani College of Engineering, Kopargaon

(An Autonomous Institute) Affiliated to Savitribai Phule Pune University.

At Sahajanandnagar, Post Shingnapur-423603, Ta.: Kopargaon, Dist.: Ahmednagar (MS)

Approved by AICTE, ISO 9001-2015 Certified, Accredited by NBA, Accredited 'A' Grade by NAAC,

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Department of Structural Engineering

B.Tech. (Structural Engineering) - Course Structure

w.e.f. 2020-21

List of Abbreviations			
Abbreviation	Full Form	Abbreviation	Full Form
ES	Engineering Science	HS	Humanity Science
PC	Professional Core	CA	Continuous Assessment
PE	Professional Elective	OR	Oral Examination
OE	Open Elective	PR	Practical Examination
ISE	In-Semester Evaluation	TW	Continuous Term work Evaluation
ESE	End-Semester Evaluation	MLC	Mandatory Learning Course
BSC	Basic Science Course	PRJ	Project/Seminar/Internship/Online Course

Second Year B.Tech

Semester-I

Cat	Course Code	Course Title	Teaching Scheme (Hrs./Week)			Credits	Evaluation Scheme (Marks)						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PRJ	ST201	Professional Internship-I	-	-	-	2	-	-	-	50	-	-	50
BSC	ES202	Vector Calculus and Differential Equaion	3	1	-	4	30	50	20	-	-	-	100
PC	ST203	Mechanics of Solids	4	-	-	4	30	50	20	-	-	-	100
PC	ST204	Civil Engineering Materials	3	-	-	3	30	50	20	-	-	-	100
PC	ST205	Architectural Planning and Drawing	3	-	-	3	30	50	20	-	-	-	100
HS	HS206	Universal Human Values and Ethics.	3	-	-	3	30	50	20	-	-	-	100
PC	ST207	Mechanics of Solids Lab.	-	-	2	1	-	-	-	50	-	25	75
PC	ST208	Civil Engineering Materials	-	-	2	1	-	-	-	50	-	-	50
PC	ST209	Architectural Planning and Drawing	-	-	2	1	-	-	-	-	50	25	75
MLC	MLC210	Mandatory learning Course-III- (Constitution of India)	2	-	-	Pass/Fail	-	-	-	-	-	-	-
Total			18	1	6	22	150	250	100	150	50	50	750

Semester-II

Cat	Course Code	Course Title	Teaching Scheme (Hrs./Week)			Credits	Evaluation Scheme (Marks)						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PC	ST211	Object Oriented Programming (C++, JAVA)	4	1	-	5	30	50	20	-	-	-	100
PC	ST212	Geotechnical Aspects of Foundations	3	-	-	3	30	50	20	-	-	-	100
PC	ST213	Mechanics of Fluids	3	-	-	3	30	50	20	-	-	-	100
PC	ST214	Infrastructural Engineering	3	-	-	3	30	50	20	-	-	-	100
PC	ST215	Structural Analysis-I	3	-	-	3	30	50	20	-	-	-	100
PC	ST216	Computer Aided Bldg. Drawing (AutoCAD) Lab	-	-	2	1	-	-	-	-	50	-	50
PRJ	ST217	Seminar	-	-	4	2	-	-	-	25	-	25	50
PC	ST218	Geotechnical Aspects of Foundations Lab.	-	-	2	1	-	-	-	50	-	25	75
PC	ST219	Mechanics of Fluids Lab.	-	-	2	1	-	-	-	50	-	25	75
MLC	MLC20	Mandatory Learning Course-IV (Innovation)	2	-	-	Pass/Fail	-	-	-	-	-	-	-
Total			18	1	10	22	150	250	100	125	50	75	750

Third Year B.Tech (Course Structure)

Semester-I

Cat	Course Code	Course Title	Teaching Scheme (Hrs./Week)			Credits	Evaluation Scheme (Marks)						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PRJ	ST301	Professional Internship-II	-	-	-	2				50			50
PC	ST302	Structural Analysis-II	4	-	-	4	30	50	20	-	-	-	100
PC	ST303	Design of Steel Structures	3	-	-	3	30	50	20	-	-	-	100
PE	ST304	Professional Elective-I	3	-	-	3	30	50	20	-	-	-	100
PC	ST305	Management of Engineering Projects	3	-	-	3	30	50	20	-	-	-	100
PC	ST306	Software Based Design of Steel Structures (STAAD Pro.)	2	-	-	2	30	50	20	-	-	-	100
PC	ST307	Software Based Design of Steel Structures Lab	-	-	4	2	-	-	-	50	-	-	50
PC	ST308	Professional Elective-I Lab	-	-	2	1	-	-	-	-	-	25	25
PC	ST309	Management of Engineering Projects Lab	-	-	2	1	-	-	-	-	-	25	25
PRJ	ST310	Skill based credit course	1	-	-	1	-	-	-	-	-	50	50
MLC	MLC311	Mandatory learning Course-V	1	-	-	Pass/Fail	-	-	-	-	-	-	-
Total			18	0	08	22	150	250	100	100	00	100	700

Semester-II

Cat	Course Code	Course Title	Teaching Scheme (Hrs./Week)			Credits	Evaluation Scheme (Marks)						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PC	ST312	Design of Reinforced Concrete Structures.	4	-	-	4	30	50	20	-	-	-	100
PC	ST313	Design of Industrial Structures.	3	-	-	3	30	50	20	-	-	-	100
PE	ST314	Professional Elective-II	3	-	-	3	30	50	20	-	-	-	100
OE	ST315	Open Elective-I	3	-	-	3	30	50	20	-	-	-	100
HS	HS316	Employability Skill Development	1	-	2	2	-	-	-	-	-	50	50
PC	ST317	Design of Reinforced Concrete Structure Lab	-	-	2	1	-	-	-	50	-	25	75
PC	ST318	Design of Industrial Structures Lab	-	-	2	1	-	-	-	50	-	25	75
PC	ST319	Professional Elective-II Lab	-	-	2	1	-	-	-	-	-	50	50
PRJ	ST320	IPR and EDP	1	-	2	2	-	-	-	-	-	50	50
MLC	MLC321	Mandatory learning Course-VI	1	-	-	Pass/Fail	-	-	-	-	-	-	-
Total			16	-	10	20	120	200	80	100	-	200	700

Final Year B.Tech (Course Structure)

Semester-I

Cat	Course Code	Course Title	Teaching Scheme (Hrs./Week)			Credits	Evaluation Scheme (Marks)						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PRJ	ST401	Professional Internship-III	-	-	-	2				50			50
PC	ST402	Software Based Design of RCC Structures. (ETABs Software)	3	-	-	3	30	50	20	-	-	-	100
PC	ST403	Design of Advanced Reinforced Concrete Structures	3	-	-	3	30	50	20	-	-	-	100
PE	ST404	Professional Elective-III	3	-	-	3	30	50	20	-	-	-	100
OE	ST405	Open Elective-II	3	-	-	3	30	50	20	-	-	-	100
PC	ST406	Design of Advanced RCC Structures Lab	-	-	2	1	-	-	-	50	-	-	50
PC	ST407	Sanction Drawings and Documentation (AutoCAD)	-	-	2	1	-	-	-	-	-	50	50
PRJ	ST408	Project Stage-I	-	-	4	2	-	-	-	50	-	-	50
OE	ST409	Open Elective-III (Online)	-	-	-	2	-	-	-	-	-	50	50
MLC	MLC410	Mandatory learning Course-VII	1	-	-	Pass/Fail	-	-	-	-	-	-	-
Total			13	-	08	20	120	200	80	150	00	100	650

Semester-II

Cat	Course Code	Course Title	Teaching Scheme (Hrs./Week)			Credits	Evaluation Scheme (Marks)						
			L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PC	ST411	Structural Audit	3	-	-	3	30	50	20	-	-	-	100
PC	ST412	National and International Standards for Structures.	3	-	-	3	30	50	20	-	-	-	100
PC	ST413	Pavement Analysis and Design	3	-	-	3	30	50	20	-	-	-	100
PE	ST414	Professional Elective-IV	3	-	-	3	30	50	20	-	-	-	100
PC	ST415	Structural Audit Lab.	-	-	2	1	-	-	-	-	-	50	50
PC	ST416	Pavement Analysis and Design Lab	-	-	2	1	-	-	-	50	-	-	50
PRJ	ST417	Project Stage-II	-	-	8	4	-	-	-	50	-	100	150
MLC	MLC418	Mandatory Learning Course-VIII	1	-	-	Pass/Fail	-	-	-	-	-	-	-
		Total	13	-	12	18	120	200	80	100	00	150	650

<p>Professional Elective -I</p> <ol style="list-style-type: none"> 1. Composite and Smart Material 2. Advanced Concrete Technology 3. Foundation Engineering 4. Environmental Engineering 	<p>Professional Elective -II</p> <ol style="list-style-type: none"> 1. Matrix Methods of Structural Analysis 2. Structural Safety 3. Design of Scaffolding 4. Dams and Hydraulic Structures
<p>Professional Elective -III</p> <ol style="list-style-type: none"> 1. Theory of Elasticity 2. Design of Water Distribution System 3. Quantity Surveying and Estimating 4. Design of Sewage Treatment Plant 	<p>Professional Elective -IV</p> <ol style="list-style-type: none"> 1. Finite Element Method. 2. Structural Health Monitoring 3. Design of Precast and Prestressed Structures. 4. Irrigation and Water Resource Engineering