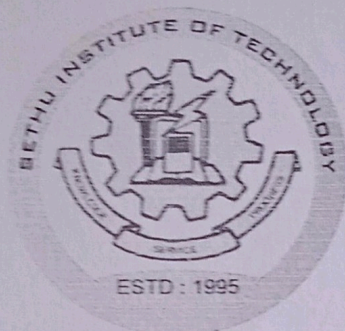


SETHU INSTITUTE OF TECHNOLOGY

Pulloor, Kariapatti – 626 115.

(An Autonomous Institution)

DEPARTMENT OF CIVIL ENGINEERING



B.E. CIVIL ENGINEERING

Curriculum & Syllabus

REGULATION 2019

CHOICE BASED CREDIT SYSTEM

Approved in the

Academic Council Meeting on 25.09.2021

B. Jayaraman

Chairperson/BOS

Chairperson
Board of Studies
Civil Engineering
Sethu Institute of Technology
Kariapatti - 626 115

[Signature]

Chairman

Academic Council
CHAIRMAN
ACADEMIC COUNCIL
Sethu Institute of Technology
Pulloor, Kariapatti - 625 115

SETHU INSTITUTE OF TECHNOLOGY

Pulloor, Kariapatti – 626 119

(An Autonomous Institution)

B.E. Degree Programme

CURRICULUM - Regulations 2019

Bachelor of Engineering in Civil Engineering

OVERALL COURSE STRUCTURE

Category	Total No. of Courses	Credits	Percentage
Humanities and Social Sciences (HS)	5	9.5	6
Basic Sciences (BS)	10	28.5	16
Engineering Sciences (ES)	9	24.5	14
Professional Core (PC)	24	67.5	38
Professional Electives (PE)	6	18	10
Open Electives (OE)	4	12	7
Project (P)	6	16	9
Mandatory Courses (MC)	5	0	0
TOTAL	69	176	100

COURSE CREDITS – SEMESTER WISE

Branch	I	II	III	IV	V	VI	VII	VIII	TOTAL
Civil Engineering	23	20.5	24	24.5	25	25	20	14	176

Employability Courses

Skill Development Courses

Entrepreneurship Development Courses

Any two or all of the above

SEMESTER– I

Course Code	Name of the Course	L	T	P	C	Category
THEORY						
19UEN101	English for Technical Communication	2	0	0	2	HS
19UMA102	Engineering Mathematics – I	3	1	0	4	BS
19UPH103	Engineering Physics	3	0	0	3	BS
19UCY106	Chemistry for Civil Engineers	3	0	0	3	BS
19UCS108	Problem Solving and Python Programming	3	0	0	3	ES
19UME109	Engineering Graphics	3	1	0	4	ES
PRACTICAL						
19UGS113	Basic Sciences Laboratory	0	0	2	1	BS
19UME111	Engineering Practices Laboratory	0	0	3	1.5	ES
19UCS110	Problem Solving and Python Programming Laboratory	0	0	3	1.5	ES
MANDATORY COURSE						
19UGM131	Induction Program (45 periods)	0	0	0	P/F	MC
	TOTAL	17	2	8	23	
Total No. of Credits – 23						

SEMESTER– II

Course Code	Name of the Course	L	T	P	C	Category
THEORY						
19UEN201	Communication Skills for Professionals	1	0	1	1.5	HS
19UMA206	Differential Equations, Complex Analysis and Transform Techniques for Civil Engineering	3	1	0	4	BS
19UPH206	Building Physics	3	0	0	3	BS
19UCY204	Environmental Science	3	0	0	3	HS
19UCE205	Introduction to Civil Engineering	3	0	0	3	ES
19UEE226	Basic Electrical and Electronics Engineering	3	0	0	3	ES
PRACTICAL						
19UGS210	Energy and Environmental Science Laboratory	0	0	3	1.5	BS
19UCE211	Computer Aided Building Drawing	0	0	3	1.5	ES
	TOTAL	16	1	7	20.5	
Total No. of Credits – 20.5						

SEMESTER– III

Course Code	Name of the Course	L	T	P	C	Category
THEORY						
19UMA325	Probability, Statistics and Transform Techniques	3	1	0	4	BS
19UCE302	Engineering Geology and Construction Materials	3	0	0	3	ES
19UCE303	Basics of Engineering Mechanics	3	1	0	4	ES
19UCE304	Water Supply Engineering	3	0	0	3	PC
19UCE305	Fluid Mechanics	3	0	0	3	PC
19UCE306	Surveying	3	0	0	3	PC
PRACTICAL						
19UCE307	Seminar	0	0	2	1	P
19UCE308	Material Testing Laboratory	0	0	3	1.5	PC
19UCE309	Surveying Laboratory	0	0	3	1.5	PC
MANDATORY COURSE						
19UGM331	Biology for Engineers	2	0	0	P/F	MC
	TOTAL	20	2	8	24	
Total No. of Credits – 24						

SEMESTER– IV

Course Code	Name of the Course	L	T	P	C	Category
THEORY						
19UMA423	Numerical Methods	3	1	0	4	BS
19UCE402	Soil Mechanics	3	0	0	3	PC
19UCE403	Strength of Materials	3	1	0	4	PC
19UCE404	Waste Water Engineering	3	0	0	3	PC
19UCE405	Highway Engineering	3	0	0	3	PC
19UCE406	Applied Hydraulic Engineering	3	0	0	3	PC
PRACTICAL						
19UCE407	Water and Waste Water Analysis Laboratory	0	0	3	1.5	PC
19UCE408	Hydraulic Engineering Laboratory	0	0	3	1.5	PC
19UCE409	Soil Mechanics Laboratory	0	0	3	1.5	PC
MANDATORY COURSE						
19UGM431	Gender Equality	1	0	0	P/F	MC
	TOTAL	19	2	9	24.5	
Total No. of Credits – 24.5						

SEMESTER– V

Course Code	Name of the Course	L	T	P	C	Category
THEORY						
19UCE501	Structural Analysis – I	3	1	0	4	PC
19UCE502	Foundation Engineering	3	0	0	3	PC
19UCE503	Design of Reinforced Concrete Elements	3	1	0	4	PC
19UCE504	Water Resources and Irrigation Engineering	3	0	0	3	PC
	Professional Elective – I	3	0	0	3	PE
	Open Elective – I	3	0	0	3	OE
PRACTICAL						
19UCE507	Creative Thinking & Innovation	0	0	2	1	P
19UCE508	Concrete and Highway Engineering Laboratory	0	0	3	1.5	PC
19UCE509	Survey Camp (4 th Semester Summer Vacation - 2 Weeks)	0	0	0	1	P
19UGS533	Interpersonal Skills Laboratory	0	0	3	1.5	HS
	TOTAL	18	2	8	25	
Total No. of Credits – 25						

SEMESTER– VI

Course Code	Name of the Course	L	T	P	C	Category
THEORY						
19UCE601	Structural Analysis – II	3	1	0	4	PC
19UCE602	Design of Steel Structures	3	1	0	4	PC
	Professional Elective – II	3	0	0	3	PE
	Professional Elective – III	3	0	0	3	PE
	Open Elective – II	3	0	0	3	OE
19UGS631	Logical Reasoning & Aptitude	1	0	0	1	BS
PRACTICAL						
19UCE607	Product Development Project	0	0	8	4	P
19UCE608	Software Applications Laboratory	0	0	3	1.5	PC
19UGS632	Soft Skills and Communication Lab	0	0	3	1.5	HS
MANDATORY COURSE						
19UGM631	Indian Constitution	1	0	0	P/F	MC
	TOTAL	17	2	14	25	
Total No. of Credits – 25						

SEMESTER– VII

Course Code	Name of the Course	L	T	P	C	Category
THEORY						
19UME701	Project Management and Finance	3	0	0	3	PC
19UCE702	Estimating and Costing	3	0	2	4	PC
19UCE703	Smart City Technologies	3	0	0	3	PC
	Professional Elective – IV	3	0	0	3	PE
	Professional Elective – V	3	0	0	3	PE
	Open Elective – III	3	0	0	3	OE
PRACTICAL						
19UCE707	Summer Internship	0	0	0	1	P
MANDATORY COURSE						
19UGM731	Professional Ethics and Human Values	2	0	0	P/F	MC
	TOTAL	20	0	2	20	
Total No. of Credits – 20						

SEMESTER– VIII

Course Code	Name of the Course	L	T	P	C	Category
THEORY						
	Professional Elective – VI	3	0	0	3	PE
	Open Elective – IV	3	0	0	3	OE
PRACTICAL						
19UCE803	Project Work	0	0	16	8	P
	TOTAL	6	0	16	14	
Total No. of Credits – 14						

LIST OF PROFESSIONAL ELECTIVES

S. No.	Course Code	Name of the Course	L	T	P	C
1.	19UCE901	Modern Surveying	3	0	0	3
2.	19UCE902	Traffic Engineering and Management	3	0	0	3
3.	19UCE903	Housing Planning and Management	3	0	0	3
4.	19UCE904	Ground Water Engineering	3	0	0	3
5.	19UCE905	Environmental Impact Assessment	3	0	0	3
6.	19UCE906	Municipal Solid Waste Management	3	0	0	3
7.	19UCE907	Ground Improvement Techniques	3	0	0	3
8.	19UCE908	Bridge Engineering	3	0	0	3
9.	19UCE909	Tall Structures	3	0	0	3
10.	19UCE910	Prefabricated Structures	3	0	0	3
11.	19UCE911	Finite Element Methods	3	0	0	3
12.	19UCE912	Repair and Rehabilitation of Structures	3	0	0	3
13.	19UCE913	Prestressed Concrete Structures	3	0	0	3
14.	19UCE914	Railway Airport and Harbour Engineering	3	0	0	3
15.	19UCE915	Urban Planning and Management	3	0	0	3
16.	19UCE916	Coastal Engineering	3	0	0	3
17.	19UCE917	Structural Dynamics and Earthquake Engineering	3	0	0	3
18.	19UCE918	Construction Techniques, Equipments and Practices	3	0	0	3
19.	19UCE919	Concrete Technology	3	0	0	3
20.	19UCE920	Disaster Preparedness and Planning	3	0	0	3
21.	19UCE921	Structural Design and Drawing	2	0	2	3
22.	19UCE922	Environmental Laws and Policies	3	0	0	3
23.	19UCE923	Environmental Quality Monitoring	3	0	0	3
24.	19UCE924	Sustainable Construction	3	0	0	3
25.	19UCE925	Air and Noise Pollution Control and Management	3	0	0	3
26.	19UCE926	Valuation Engineering	3	0	0	3
27.	19UCE927	Application of Remote Sensing & GIS in Civil Engineering	3	0	0	3
28.	19UCE928	Instrumentation and Sensor Technology for Civil Engineering	3	0	0	3
29.	19UCE929	Design of Formwork	3	0	0	3
30.	19UCE930	Masonry Structures	3	0	0	3

List of Open Electives

S. No.	Course Code	Name of the Course	L	T	P	C
1.	19UCE971	Remote Sensing and GIS	3	0	0	3
2.	19UCE972	Air Pollution and Control Engineering	3	0	0	3
3.	19UCE973	Environmental and Social Impact Assessment	3	0	0	3
4.	19UCE974	Disaster Management	3	0	0	3
5.	19UCE975	Environmental Science and Engineering	3	0	0	3
6.	19UCE976	Metro Systems and Engineering	3	0	0	3
7.	19UCE977	Road Safety	3	0	0	3
8.	19UCE978	Solid Waste Management	3	0	0	3

List of Inter Disciplinary Courses

S. No.	Course Code	Name of the Course	L	T	P	C
1.	19UGM954	Smart Buildings (Civil & EEE)	3	0	0	3
2.	19UGM955	Waste to Energy Conversion (Civil & Chemical)	3	0	0	3

List of Mandatory Courses

S. No.	Course Code	Name of the Course	L	T	P	C
1.	19UGM131	Induction Program (45 periods)	0	0	0	P/F
2.	19UGM332	Biology for Engineering Applications	2	0	0	P/F
3.	19UGM431	Gender Equality	1	0	0	P/F
4.	19UGM634	Indian Constitution	1	0	0	P/F
5.	19UGM731	Professional Ethics and Human Values	2	0	0	P/F

List of One Credit Courses (With Industry Collaboration)

S. No.	Course Code	Name of the Course	L	T	P	C
1.	19UCE861	Green Building Concepts	1	0	0	1
2.	19UCE862	Practical Aspects of Architecture.	1	0	0	1
3.	19UCE863	Water Conservation Techniques	1	0	0	1
4.	19UCE864	Construction Safety	1	0	0	1
5.	19UCE865	Effluent Treatment Plant	1	0	0	1
6.	19UCE866	Corrosion of Steel in Concrete and Preventive Measures	1	0	0	1
7.	19UCE867	Building Planning and Byelaws	1	0	0	1
8.	19UCE868	Automation in Construction	1	0	0	1
9.	19UCE869	Building Energy Audit	1	0	0	1
10.	19UCE870	Health Monitoring of Structures	1	0	0	1
11.	19UCE871	Artificial Intelligence in Civil Engineering	1	0	0	1
12.	19UCE872	Design of Scaffolding	1	0	0	1
13.	19UCE873	Applications of Robotics in Civil Engineering	1	0	0	1
14.	19UCE874	Drone surveying	1	0	0	1
15.	19UCE875	Recycled Construction Materials	1	0	0	1
16.	19UCE876	Practical Building Information Modeling	1	0	0	1
17.	19UCE877	Building Safety	1	0	0	1
18.	19UCE878	Bar Bending and Ductile detailing	1	0	0	1
19.	19UCE879	Global Climate Change and Vulnerability Assessment	1	0	0	1
20.	19UCE880	Paver Block Manufacturing as per IS code	0	0	2	1

LIST OF WINTER COURSES

S. No	Course Code	Name of the Course	L	T	P	C	Category
1.	19UEN101	English for Technical Communication	2	0	0	2	HS
2.	19UMA102	Engineering Mathematics – I	3	1	0	4	BS
3.	19UPH103	Engineering Physics	3	0	0	3	BS
4.	19UCY106	Chemistry for Civil Engineers	3	0	0	3	BS
5.	19UCS108	Problem Solving and Python Programming	3	0	0	3	ES
6.	19UME109	Engineering Graphics	3	1	0	4	ES
7.	19UGS113	Basic Sciences Laboratory	0	0	2	1	BS
8.	19UME111	Engineering Practices Laboratory	0	0	3	1.5	ES
9.	19UCS110	Problem Solving and Python Programming Laboratory	0	0	3	1.5	ES
10.	19UGM131	Induction Program (45 periods)	0	0	0	P/F	MC
11.	19UMA325	Probability, Statistics and Transform Techniques	3	1	0	4	BS
12.	19UCE302	Engineering Geology and Construction Materials	3	0	0	3	ES
13.	19UCE303	Basics of Engineering Mechanics	3	1	0	4	ES
14.	19UCE304	Water Supply Engineering	3	0	0	3	PC
15.	19UCE305	Fluid Mechanics	3	0	0	3	PC
16.	19UCE306	Surveying	3	0	0	3	PC
17.	19UCE307	Seminar	0	0	2	1	P
18.	19UCE308	Material Testing Laboratory	0	0	3	1.5	PC
19.	19UCE309	Surveying Laboratory	0	0	3	1.5	PC
20.	19UGM332	Biology for Engineering Applications	2	0	0	P/F	MC
21.	19UCE501	Structural Analysis – I	3	1	0	4	PC
22.	19UCE502	Foundation Engineering	3	0	0	3	PC
23.	19UCE503	Design of Reinforced Concrete Elements	3	1	0	4	PC
24.	19UCE504	Water Resources and Irrigation Engineering	3	0	0	3	PC
25.	19UCE507	Creative Thinking & Innovation	0	0	2	1	P
26.	19UCE508	Concrete and Highway Engineering Laboratory	0	0	3	1.5	PC
27.	19UCE509	Survey Camp (2 Weeks)	0	0	0	1	P
28.	19UGS533	Interpersonal Skills Laboratory	0	0	3	1.5	HS
29.	19UME701	Project Management and Finance	3	0	0	3	PC
30.	19UCE702	Estimating and Costing	3	0	2	4	PC
31.	19UCE703	Smart City Technologies	3	0	0	3	PC
32.	19UCE707	Summer Internship	0	0	0	1	P
33.	19UGM731	Professional Ethics and Human Values	2	0	0	P/F	MC