Government College of Engineering Jalgaon

“Globally Accepted Engineers with Human Skills”

(An Autonomous Institute of Government of Maharashtra)

Civil Engineering Department

Third Year BTech Syllabus (Option II)

2018-19

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

Scheme for Semester I of B. Tech. (Elect/Comp/Civil) with effect from academic year 2018-19

Course Code	Name of the Course	Group	Teaching Scheme* Hrs /Week				Evaluation Scheme						Credits
							Theory			Practical		Total	
			L	T	P	Total	MSE	ISA	ESE	ICA	ESE		
SH100AU	**Induction Program**	**Mandatory audit course of three weeks duration as per AICTE model curriculum**											**AU**
SH101U	Differential Calculus	BS	3	1	--	4	30	10	60	--	--	100	4
SH102U	Engineering Chemistry	BS	3	--	--	3	30	10	60	--	--	100	3
EE101U	Elements of Electrical Engineering	BE	2	--	--	2	30	10	60	--	--	100	2
CO101U	Programming for Problem Solving	BE	3	--	--	3	30	10	60	--	--	100	3
SH104U	Communication Skills	HM	1	--	--	1	15	05	30	--	--	50	1
SH105U	Communication Skills Lab	HM	--	--	2	2	--	--	--	50	--	50	1
ME101U	Mechanical Workshop Practices	BE	--	--	2	2	--	--	--	50	--	50	1
SH103U	Engineering Chemistry Lab	BS	--	--	2	2	--	--	--	50	--	50	1
EE102U	Elements of Electrical Engineering Lab	BE	--	--	2	2	--	--	--	50	--	50	1
CO102U	Programming for Problem Solving Lab	BE	--	--	2	2	--	--	--	50	--	50	1
		Total	**12**	**1**	**10**	**23**	**45**	**135**	**270**	**250**	**--**	**700**	**18**

*** Commencement of first semester of UG engineering program is generally delayed by 4 - 5 weeks as compared with higher semesters due to admission procedure. In addition, as per AICTE directives there is Induction Program of three weeks at the beginning of first semester. Thus the effective teaching in first semester may be only for 8 – 9 weeks. Therefore, one hour per week theory / laboratory teaching should be added in the regular load shown in the curriculum structure so that the syllabus can be completed in 8 - 9 weeks available in first semester of UG program.**

L: Lecture **T: Tutorial** **P: Practical** **ISA: Internal Sessional Assessment**
MSE: Mid Semester Examination **ESE: End Semester Examination,** **ICA: Internal Continuous Assessment**

Note: 1. ESE (TH) duration for SH104U is two hours and that for all other theory courses is three hours.
2. MSE (TH) duration for SH104U is one hours and that for all other theory courses is two hours
3. Group indicates curriculum component as defined earlier.

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

Scheme for Semester II of B. Tech. (Elect/Comp/Civil) with effect from academic year 2018-19

Course Code	Name of the Course	Group	Teaching Scheme Hrs /Week				Evaluation Scheme						Credits
							Theory			Practical		Total	
			L	T	P	Total	MSE	ISA	ESE	ICA	ESE		
SH151U	Integral Calculus	BS	3	1	--	4	30	10	60	--	--	100	4
SH152U	Engineering Physics	BS	3	--	--	3	30	10	60	--	--	100	3
ME151U	Engineering Drawing and Drafting	BE	3	--	--	3	30	10	60	--	--	100	3
ET151U	Basic Electronics and Measurement Techniques	BE	3	--	--	3	30	10	60	--	--	100	3
CE151U	Engineering Mechanics	BE	3	1	--	4	30	10	60	--	--	100	4
ME152U	General Workshop Practices	BE	--	--	2	2	--	--	--	50	--	50	1
SH153U	Engineering Physics Lab	BS	--	--	2	2	--	--	--	50	--	50	1
ME153U	Engineering Drawing and Drafting Lab	BE	--	--	2	2	--	--	--	50	--	50	1
ET152U	Basic Electronics and Measurement Techniques Lab	BE	--	--	2	2	--	--	--	50	--	50	1
CE152U	Engineering Mechanics Lab	BE	--	--	2	2	--	--	--	50	--	50	1
SH150AU	**Environment Science**		**-**	**--**	**--**	**--**	**NA**	**NA**	**60**	**--**	**--**	**60**	**AU**
Total			**15**	**2**	**10**	**27**	**150**	**50**	**400**	**250**	--	**810**	**22**

L: Lecture **T: Tutorial** **P: Practical** **ISA: Internal Sessional Assessment**
MSE: Mid Semester Examination **ESE: End Semester Examination,** **ICA: Internal Continuous Assessment**

Note: 1. ESE (TH) duration for ME151U is four hours and that for all other theory courses is three hours.

2. MSE (TH) duration for all theory courses is two hours

3. Group indicates curriculum component as defined earlier.

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

Scheme for SEM III of B. Tech. (Civil Engineering) 2018-19

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme						Credit
							Theory			Practical		Total	
			L	T	P	Total	ISA	MSE	ESE	ICA	ESE		
CE201U	Introduction to Civil Engineering	HM	2	--	--	2	10	30	60	--	---	100	2
CE202U	Basic Surveying	PC	3	--	---	3	10	30	60	---	---	100	3
CE203U	Concrete Technology	PC	3	--	---	3	10	30	60	---	---	100	3
CE204U	Building Planning and Construction	PC	3	--	---	3	10	30	60	---	---	100	3
CE205U	Strength of Materials	PC	3	--	---	3	10	30	60	---	---	100	3
CE206U	Engineering Geology	BS	3	--	---	3	10	30	60	---	---	100	3
CE207U	Basic Surveying Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE208U	Concrete Technology Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE209U	Building Planning and Construction Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE210U	Computer Aided Civil Engineering Drawing Lab	PC		--	2	2	--	--	--	50	--	50	1
CE211U	Engineering Geology Lab	BS	--	--	2	2	--	--	--	25	25	50	1
SH200AU	Essence of Indian Traditional Knowledge	HM	--	--	--	--	NA	NA	60	0	0	60	AU
Total			**17**	**--**	**10**	**27**	**60**	**180**	**420**	**150**	**100**	**910**	**22**

L: Lecture **T: Tutorial** **P: Practical** **ISA: Internal Sessional Assessment**
MSE: Mid Semester Examination **ESE: End Semester Examination,** **ICA: Internal Continuous Assessment**

Note: 1.ESE (TH) duration for CE204U is four hours and for all other theory courses is three hours.
2.MSE (TH) duration for all theory courses is two hours
3. Group indicates curriculum component as defined earlier.

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

Scheme for SEM IV of B. Tech. (Civil Engineering) 2018-19

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme						Credit
							Theory			Practical		Total	
			L	T	P	Total	ISA	MSE	ESE	ICA	ESE		
SH296U	Advanced Engineering Mathematics	HM	3	--	---	3	10	30	60	---	---	100	3
CE251U	Fluid Mechanics	PC	3	--	---	3	10	30	60	---	---	100	3
CE252U	Water Treatment and Processes	PC	3	--	-	3	10	30	60	---	---	100	3
CE253U	Basic Theory of Structures	PC	3	-	---	3	10	30	60	---	---	100	3
CE254U	Hydrology and Irrigation	PC	3	--	--	3	10	30	60	---	---	100	3
CE255U	Civil Engineering- Societal and Global Impact	HM	2	--	---	2	10	30	60	---	---	100	2
CE256U	Fluid Mechanics Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE257U	Water Treatment and Processes Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE258U	Testing of Materials Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE259U	Hydrology and Irrigation Lab	PC	--	--	2	2	--	--	--	25	25	50	1
SH299U	Effective Technical Communication	HM		--	2	2	--	--	--	25	25	50	1
SH250AU	Introduction to the Constitution of India	CM	--	--	--	--	NA	NA	60	--	--	60	AU
		Total	**17**	**-**	**10**	**27**	**60**	**180**	**420**	**125**	**125**	**910**	**22**

L: Lecture **T: Tutorial** **P: Practical** **ISA: Internal Sessional Assessment**
MSE: Mid Semester Examination **ESE: End Semester Examination,** **ICA: Internal Continuous Assessment**

Note: 1.ESE (TH) duration for all theory courses is three hours.
2.MSE (TH) duration for all theory courses is two hours
3. Group indicates curriculum component as defined earlier.
4. Professional Internship of minimum 6 week duration (minimum 2 weeks in one visit) shall be completed during summer and winter vacation after the IV semester onward and will be asses in VIII semester.

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

Scheme for SEM V of B. Tech. (Civil Engineering) 2018-19

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme						Credit
							Theory			Practical		Total	
			L	T	P	Total	ISA	MSE	ESE	ICA	ESE		
CE301U	Dams and Hydraulic Structures	PC	3	--	---	3	10	30	60	---	---	100	3
CE302U	Design of RCC Structures	PC	3	--	---	3	10	30	60	---	---	100	3
CE303U	Transportation Engineering	PC	3	--	---	3	10	30	60	---	---	100	3
CE304U	Professional Elective -I	PE	3	--	---	3	10	30	60	---	---	100	3
CE305U	Open Elective-I	OE	3	--	---	3	10	30	60	---	---	100	3
CE306U	Construction Management	PC	3	--	--	3	10	30	60	--	--	100	3
CE307U	Design of RCC Structures-Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE308U	Dams and Hydraulic Structures Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE309U	Transportation Engineering Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE310U	Professional Elective –I Lab	PE	--	--	2	2	--	--	--	25	25	50	1
SH496U	**Organizational Behavior /Finance & Accounting / Other equivalent management course**	**HM**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**60**	**3**
	Total		18	--	8	26	60	180	360	100	100	860	25

L: Lecture **T: Tutorial** **P: Practical** **ISA: Internal Sessional Assessment**

MSE: Mid Semester Examination **ESE: End Semester Examination,** **ICA: Internal Continuous Assessment**

Professional Elective -I

A. Hydraulic Engineering
B. Construction Practice
C. Earthquake Engineering
D. Architectural Planning and Interior Designing

Open Elective I

X. Building Construction Practice
Y. Repair and Rehabilitation of Buildings

Note: 1. ESE (TH) duration for CE302U is four hours and for all other theory courses is three hours.

2.MSE (TH) duration for all theory courses is two hours

3. Group indicates curriculum component as defined earlier.

4. SH 496U - Credit transferred from Online NPTEL / SWAYAM /MOOC advance course offered by Indian institute and approved by BoS (Civil) Chairman

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

Scheme for SEM VI of B. Tech. (Civil Engineering) 2018-19

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme						Credit
							Theory			Practical		Total	
			L	T	P	Total	ISA	MSE	ESE	ICA	ESE		
CE351U	Advance Theory of Structures	PC	3	--	--	3	10	30	60	---	---	100	3
CE352U	Geotechnical Engineering	PC	3	--	---	3	10	30	60	---	---	100	3
CE353U	Design of Steel Structures	PC	3	--	---	3	10	30	60	---	---	100	3
CE354U	Professional Elective -II	PE	3	--	---	3	10	30	60	---	---	100	3
CE355U	Open Elective - II	OE	3	--	---	3	10	30	60	---	---	100	3
CE356U	Disaster Preparedness & Planning Management	HM	3	--	---	3	10	30	60	---	---	100	3
CE357U	Geotechnical Engineering-Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE358U	Design of Steel Structures Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE359U	Professional Elective –II-Lab	PE	--	--	2	2	--	--	--	25	25	50	1
CE360U	Software Engineering -Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE361U	Minor Project	PS	--	--	2	2	--	--	--	50		50	1
CE451U	**Professional Elective -IV**	**PE**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**60***	**60***	**3**
		Total	**18**	**--**	**10**	**28**	**60**	**180**	**360**	**150**	**100**	**850**	**26**

L: Lecture **T: Tutorial** **P: Practical** **ISA: Internal Sessional Assessment**

MSE: Mid Semester Examination **ESE: End Semester Examination,** **ICA: Internal Continuous Assessment**

Professional Elective -II

A. Advanced Surveying
B. Rehabilitation of Structures
C. Prestressed Concrete
D. Irrigation Systems

Professional Elective -IV

A. Railway, Tunnel and Airport Engineering
B. Geo-synthetic Engineering
C. Environmental Geo-Technology
D .Construction Equipment and Automation
E. Other course offered by NPTL/MOOC/SWAYAM and approved by department

Open Elective II

X. Industrial Pollution and Control
Y. Safety and Disaster Management

Note: 1. ESE (TH) duration for CE353U is four hours and for all other theory courses is three hours.

2.MSE (TH) duration for all theory courses is two hours.

3. Group indicates curriculum component as defined earlier.

4. CE451U - Credit transferred from Online NPTEL / SWAYAM /MOOC advance course offered by Indian institute and approved by BoS (Civil) Chairman

*** If students fail in online exam, then ESE will be conducted.**

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

Scheme for SEM VII of B. Tech. (Civil Engineering) 2018-19

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme						Credit
							Theory			Practical		Total	
			L	T	P	Total	ISA	MSE	ESE	ICA	ESE		
CE401U	Environmental Engineering	PC	3	--	---	3	10	30	60	---	---	100	3
CE402U	Foundation Engineering	PC	3	--	---	3	10	30	60	---	---	100	3
CE403U	Engineering Economics, Estimate and Costing	PC	3	--	--	3	10	30	60	--	--	100	3
CE404U	Professional Elective -III	PE	3	--	---	3	10	30	60	---	---	100	3
CE405U	Open Elective - III	OE	3	--	---	3	10	30	60	---	---	100	3
CE406U	Environmental Engineering -Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE407U	Foundation Engineering-Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE408U	Engineering Economics, Estimate and Costing - Lab	PC	--	--	2	2	--	--	--	25	25	50	1
CE409U	Professional Elective-III-Lab	PE	--	--	2	2	--	--	--	25	25	50	1
CE410U	Industrial Lectures	PS	1	--	--	1	--	--	--	50	--	50	1
CE452	**Professional Elective -V**	**PE**	**--**	**--**	**--**	**--**	**--**	**--**	**60***		**--**	**60***	**3**
CE453	**Professional Elective - VI**	**PE**	**--**	**--**	**--**	**--**	**--**	**--**	**60***		**--**	**60***	**3**
		Total	**16**	**--**	**8**	**24**	**50**	**180**	**420**	**150**	**100**	**870**	**26**

L: Lecture **T: Tutorial** **P: Practical** **ISA: Internal Sessional Assessment**

MSE: Mid Semester Examination **ESE: End Semester Examination,** **ICA: Internal Continuous Assessment**

Professional Elective -III

A. Pavement Design
B. Advanced R.C.C
C. Air and Noise Pollution
D. Building System and Services

Professional Elective -V

A. Bridge Engineering
B. Advanced Foundation Engineering
C. Advance Design of Steel Structures
D. Solid and Hazardous Waste Management
E. The advance course offered by /SWAYAM and approved by BoS Chairman

Professional Elective -VI

A. Structural Health Monitoring and Auditing
B. Ground Improvement Techniques
C. Finite Element Analysis
D. Formwork and Support System Design
E. The advance course offered by /SWAYAM and approved by BoS Chairman

Open Elective III

X. Interior Design
Y. Metro System and Engineering

Note: 1.ESE (TH) duration for all theory courses is three hours.

2.MSE (TH) duration for all theory courses is two hours

3. Group indicates curriculum component as defined earlier.

4. CE452U and CE453U - Credit transferred from Online NPTEL / SWAYAM /MOOC advance course offered by Indian institute and approved by BoS (Civil) Chairman

*** If students fail in online exam, then ESE will be conducted.**

GOVERNMENT COLLEGEOF ENGINEERING, JALGAON

Scheme for SEM VIII of B. Tech. (Civil Engineering) 2018-19

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme						Credit
							Theory			Practical		Total	
			L	T	P	Total	ISA	MSE	ESE	ICA	ESE		
CE454U	Seminar	PS	---	---	2	2	--	--	--	25	--	25	1
CE456U	Professional Internship	PS	--	--	--	--	--	--	--	50	--	50	2
CE457U	Project#	PS	---	--	6	6	--	--	--	100	200	300	8
CE457AU	Basics of Entrepreneurship	HM	--	--	--	--	--	--	--	50	--	60	AU
CE458AU	Spreadsheet for civil Engineering Applications	HM	--	--	--	--	--	--	--	50	--	60	AU
	Total		---	--	8	8	--	--	--	275	200	475	11

L: Lecture **T: Tutorial** **P: Practical** **ISA: Internal Sessional Assessment**
MSE: Mid Semester Examination **ESE: End Semester Examination,** **ICA: Internal Continuous Assessment**

Note: 1.ESE (TH) duration for all theory courses is three hours.
2. MSE (TH) duration for all theory courses is two hours
3. Group indicates curriculum component as defined earlier. **# - Preferably industry/ field based**

Open Elective List				
Sr No	**BoS**	**Open Elective-I**	**Open Elective-II**	**Open Elective-III**
1	Mechanical Department	Heating Ventilation and Air Conditioning	Mechatronics and Applications	Operations Research and Project Management
		Electric and Hybrid Vehicle	Power Station Engineering	Industrial Robotics
2	E&TC Department	Principles of Communication Systems	Electronics Instruments and Measurements	Biomedical Electronics
		Consumer Electronics	Microprocessor and Microcontroller	Power Devices and Applications
3	Instrumentation Department	Programmable Logic Controller and Distributed Control System	Automotive Instrumentation	Building Automation
		Virtual Instrumentation	Industrial Measurement	Agricultural Instrumentation
4	Electrical Department	Renewable Energy Systems	Energy Audit and Conservation	Electrification of Buildings
		Wind and Solar Power	Electrical Engineering Materials	Industrial Automation
5	Computer Department	Professional Ethics and Cyber Security	Internet and Communication Technology	Internet of Things
		Android Programming	Data Structures and Algorithms	Web Design
6	Civil Department	Building Construction Practice	Environmental Laws and Polices	Interior Design
		Repair & Rehabilitation of Structures	Safety and Disaster Management	Metro System and Engineering
7	Applied Science Department	Biology	Foreign Language-I	Finance and Accounting
		Foreign Language-II	Entrepreneurship Higher Development	Higher Mathematics