

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI
(C.G.)**

M.Tech. in Energy and Environmental Engineering

FIRST SEMESTER

S. No.	Board of Study	Subject code	Subject	Periods per week			Scheme of exam			Total Marks	Credit L+(T+P)/2
				L	T	P	Theory/Practical				
							ESE	CT	TA		
1.	Chemical Engg.	589111(19)	New and Renewable Energy Sources	3	1	-	100	20	20	140	4
2.	Chemical Engg.	589112(19)	Environmental Pollution & Management	3	1	-	100	20	20	140	4
3.	Chemical Engg.	589113(19)	Energy system modeling & Energy audit	3	1	-	100	20	20	140	4
4.	Chemical Engg.	589114(19)	Applied Instrumentation for Energy & Environmental monitoring	3	1	-	100	20	20	140	4
5.	Refer Table-I		Elective-I	3	1	-	100	20	20	140	4
6.	Chemical Engg.	589121(19)	Environmental Quality Monitoring Lab	-	-	3	75	-	75	150	2
7.	Chemical Engg.	589122(19)	Applied Instrumentation Lab	-	-	3	75	-	75	150	2
TOTAL				15	5	6	650	100	250	1000	24

Table -I

Elective- I			
Sr. No.	Board of Study	Subject code	Subject
1	Chemical Engg.	589131(19)	Energy Conversion
2	Chemical Engg.	589132(19)	Energy conservation & efficiency
3	Chemical Engg.	589133(19)	Environmental hydrology
4	Chemical Engg.	589134(19)	Energy economics & project management
5	Chemical Engg.	589135(19)	Bio- Energy technologies

L- Lecture T - Tutorial P - Practical ESE - End Semester Exam
CT - Class Test TA - Teachers Assessment

Note (1) **1/4th of total strength of students subject to minimum of twenty students is required**

To offer an elective in the college in a particular academic session.

Note (2) **Choice of elective course once made for an examination can be changed in future**

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SECOND SEMESTER

S. No.	Board of Study	Subject code	Subject	Periods per week			Scheme of exam			Total	Credit L+(T+P)/2
				L	T	P	Theory/Practical			Marks	
							ESE	CT	TA		
1.	Chemical Engg.	589211(19)	Geo environment, Effluent Treatment & Waste Utilization	3	1	-	100	20	20	140	4
2.	Chemical Engg.	589212(19)	Biomass Conversion Technologies	3	1	-	100	20	20	140	4
3.	Chemical Engg.	589213(19)	Energy Efficiency In Electrical & Thermal Utilities	3	1	-	100	20	20	140	4
4.	Chemical Engg.	589214(19)	Solar Thermal And Solar Photovoltaic system	3	1	-	100	20	20	140	4
5.	Refer Table-II		Elective-II	3	1	-	100	20	20	140	4
6.	Chemical Engg.	589221(19)	Solar Thermal & Photovoltaic Lab	-	-	3	75	-	75	150	2
7.	Chemical Engg.	589222(19)	Energy Efficiency Lab	-	-	3	75	-	75	150	2
TOTAL				15	5	6	650	100	250	1000	24

Table -II

Elective- II			
S. No.	Board of Study	Subject code	Subject
1	Chemical Engg.	589231(19)	Waste disposal & management
2	Chemical Engg.	589232(19)	Mini & Micro Hydel Systems
3	Chemical Engg.	589233(19)	Air & Noise Pollution Control
4	Chemical Engg.	589234(19)	Remote Sensing & GIS Applications
5	Chemical Engg.	589235(19)	Renewable Energy & Sustainable Development

L- Lecture T - Tutorial P - Practical ESE - End Semester Exam
CT - Class Test TA - Teachers Assessment

Note (1) 1/4th of total strength of students subject to minimum of twenty students is required

To offer an elective in the college in a Particular academic session .

Note (2) Choice of elective course once made for an examination can be changed in future examinations.

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THIRD SEMESTER

S. No.	Board of Study	Subject code	Subject	Periods per week			Scheme of exam			Total	Credit L+(T+P)/2
				L	T	P	Theory/Practical			Marks	
							ESE	CT	TA		
1.	Chemical Engg.	589311(19)	Energy efficient Buildings	3	1	-	100	20	20	140	4
2.	Refer Table- III		Elective-III	3	1	-	100	100	20	20	4
3.	Chemical Engg.	589321(19)	Field Visit and Case Study	-	-	28	100	-	100	200	14
4.	Chemical Engg.	589322(19)	Minor Project	-	-	3			20	20	2
TOTAL				6	2	31	300	40	160	500	24

Table -III

Elective- III			
Sr. No.	Board of Study	Subject code	Subject
1	Chemical Engg.	589331(19)	Wind Energy Technology
2	Chemical Engg.	589332(19)	Grid Integration of Distributed Energy Sources
3	Chemical Engg.	589333(19)	Smart Grid & mini grid
4	Chemical Engg.	589334(19)	Energy policies & planning
5	Chemical Engg.	589335(19)	Risk assessment and disaster management

L - Lecture T - Tutorial P - Practical ESE - End Semester Exam
CT - Class Test TA - Teachers Assessment

Note (1) 1/4th of total strength of students subject to minimum of twenty students is required to offer an elective in the college in a Particular academic session .

Note (2) Choice of elective course once made for an examination can be changed in future Examinations.

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FOURTH SEMESTER

S. No.	Board of Study	Subject Code	Subject	Periods per week			Scheme of exam			Total	Credit L+(T+P)/ 2
				L	T	P	Theory/Practical			Marks	
							ESE	CT	TA		
1.	Chemical Engg.	589421(19)	Project + Seminar	6	-	34	300		200	500	23
TOTAL				6	-	34	300		200	500	23

L - Lecture

T - Tutorial

P - Practical

ESE - End Semester Exam

CT - Class Test

TA - Teachers Assessment

Industrial Project or Major Project equivalent to 23 Credits shall be completed by the student during fourth semester. A project report giving details of work done under the project should be submitted one month before the end of the semester. The project work shall be monitored by internal guide and / or a authorized / qualified person from the industry where student is doing the work.

The topic of the project and work-plan shall be approval by the internal committee of Experts. Mid- Term and pre-submission viva-voce examination shall be compulsory to every student.

Distribution of Credits for Project work shall be as follows.

- 1) Selection of Topic with Detailed Work Plan - 50 Marks
- 2) Mid-Semester presentation – 50 Marks
- 3) Pre- Submission Presentation - 100 Marks
- 4) Find Viva- Voce Examination- 300 Marks