Chhattisgarh Swami Vivekanand Technical University (CSVTU), Bhilai (C.G.)

SCHEME OF TEACHING AND EXAMINATION

B.Tech (Third Semester – Electrical Engineering)

Sl. No.	Board of Studies (BOS)	Courses (Subject)	Course Code	Period per Week			Scheme of Examination Theory/Lab			Total Marks	Credit
				L	T	P	ESE	CT	TA		
1.	Basic Science	Mathematics - III	B000311(014)	3	1	-	100	20	30	150	4
2.	Electrical Engg.	Electrical Circuit Analysis	B024312(024)	3	1	-	100	20	30	150	4
3.	Electrical Engg.	Electrical Machines – I	B024313(024)	3	1	-	100	20	30	150	4
4.	Electrical Engg.	Digital Electronics	B024314(024)	2	1	-	100	20	30	150	3
5.	Electrical Engg.	Numerical Methods	B024315(024)	2	-	-	100	20	30	150	2
6.	Electrical Engg.	Electrical Machines Laboratory - I	B024321(024)	-	-	2	40	-	20	60	1
7.	Electrical Engg.	Electrical Circuit Analysis Laboratory	B024322(024)	-	-	2	40	-	20	60	1
8.	Electrical Engg.	Digital Electronics Laboratory	B024323(024)	-	-	2	40	-	20	60	1
9.	Electrical Engg.	Software Laboratory (Applications of Numerical Methods in Open Source)	B024324(024)	-	-	2	40	-	20	60	1
10.	Humanities	Personality Development	B000306(046)	-	-	2	-	-	10	10	-
			Total Marks	**13**	**4**	**10**	**660**	**100**	**240**	**1000**	**21**

L-Lecture, T-Tutorial, P-Practical, ESE-End Semester Exam, CT- Class Test, TA-Teacher's Assessment

Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.)
SCHEME OF TEACHING AND EXAMINATION
B Tech (ELECTRICAL ENGINEERING) IV Semester

Sl. No.	Board of Studies (BOS)	Courses (Subject)	Course Code	Period per Week			Scheme of Examination			Total Marks	Credits
							Theory/Lab				
				L	T	P	ESE	CT	TA		
1.	Electrical	Electromagnetic Fields	B024411(024)	3	1	-	100	20	30	150	4
2.	Electrical	Power Systems – I (Apparatus and Modeling)	B024412(024)	3	1	-	100	20	30	150	4
3.	Electrical	Electrical Machines – II	B024413(024)	3	0	-	100	20	30	150	3
4.	Electrical	Signals and Systems	B024414(024)	2	1	-	100	20	30	150	3
5.	Electrical	Analog Electronics	B024415(024)	2	1	-	100	20	30	150	3
6.	Electrical	Electrical Machines Laboratory II	B024421(024)	-	-	2	40	-	20	60	1
7.	Electrical	Power Systems Laboratory I	B024422(024)	-	-	2	40	-	20	60	1
8.	Electrical	Analog Electronics Laboratory	B024423(024)	-	-	2	40	-	20	60	1
9.	Electrical	Virtual Lab	B025424(024)	-	-	2	40	-	20	60	1
10.	Non-Credit	Indian Culture and Constitution of India	B000406(046)	-	-	2	-	-	10	10	-
			Total	13	4	10	660	100	240	1000	21

L: Lecture, T: Tutorial, P: Practical, ESE: End Semester Exam, CT: Class Test, TA: Teachers Assessment
Note: Duration of all theory papers will be of Three Hours.

Note:

1. Duration of End Semester Exam of all theory papers will be of Three Hours.
2. Industrial Training of eight weeks is mandatory for B.Tech.. Student. It is to be completed in two parts.
   - The first part will be in summer after IV semester after which students have to submit a training report which will be evaluated by the college teachers during B.E. V semester.

Sl. No.	Board of Studies	Courses (Subject)	Course Code	L	T	P	Theory/Lab			Total Marks	Credits
							ESE	CT	TA		
1.	Electrical Engg.	Control System	C024511(024)	3	1	-	100	20	30	150	4
2.	Electrical Engg.	Power System Analysis	C024512(024)	3	1	-	100	20	30	150	4
3.	Electrical Engg.	Power Electronics	C024513(024)	3	1	-	100	20	30	150	4
4.	Electrical Engg.	Electrical Measurements	C024514(024)	2	1	-	100	20	30	150	3
5.	Electrical Engg.	**Professional Elective –I(Refer Table I)**		2	0	-	100	20	30	150	2
6.	Electrical Engg.	Control System LAB	C024521(024)	-	-	2	40	-	20	60	1
7.	Electrical Engg.	Electrical Measurements LAB	C024522(024)	-	-	2	40	-	20	60	1
8.	Electrical Engg.	Power Electronics Lab	C024523(024)	-	-	2	40	-	20	60	1
9.	Electrical Engg.	Project-I based on Summer Internship/ Industrial Training	C024524(024)	-	-	2	40	-	20	60	1
10.	Non-Credit	Environmental Studies	C000506(020)	-	-	2	-	-	10	10	-
			Total	**13**	**4**	**10**	**660**	**100**	**240**	**1000**	**21**

L – Lecturer ,T – Tutorial, P – Practical , CT –ClassTest ESE – End Semester Exam TA – Teacher's Assessment

Table I (Professional Elective I)

S.N.	Board of Studies	Course Code	Subject
1	Electrical Engg.	C024531(024)	Analog and Digital Communication
2	Electrical Engg.	C024532(024)	Computer System Architecture
3	Electrical Engg.	C024533(024)	Power Plant Engineering
4	Electrical Engg.	C024534(024)	Electric Machine Design

Note: (1) 1/4th of total strength of students subject to minimum of 20 students is required to offer and elective in the college in a particular academic session.

(2) Choice of elective course once made for an examination cannot be changed in future examinations.

Chhattisgarh Swami VivekanandTechnical University (CSVTU, NEWAI (C.G.))
SCHEME OF TEACHING AND EXAMINATION
B Tech (Sixth Semester – Electrical Engineering)

Sl. No.	Board of Studies	Courses (Subject)	Course Code	Period per Week			Theory/Lab			Total Marks	Credits
				L	T	P	ESE	CT	TA		
1.	Electrical Engg.	Instrumentation Techniques	C024611(024)	3	1	-	100	20	30	150	4
2.	Electrical Engg.	Switchgear and Protection	C024612(024)	3	1	-	100	20	30	150	4
3.	Electrical Engg.	Microprocessor and its Applications	C024613(024)	3	1	-	100	20	30	150	4
4.		Professional Elective-II (Refer Table I)		2	1	-	100	20	30	150	3
5.		Open Elective – I (Refer Table II)		2	0	-	100	20	30	150	2
6.	Electrical Engg.	Instrumentation Techniques Lab	C024621(024)	-	-	2	40	-	20	60	1
7.	Electrical Engg.	Switchgear and Protection LAB	C024622(024)	-	-	2	40	-	20	60	1
8.	Electrical Engg.	Microprocessors LAB	C024623(024)	-	-	2	40	-	20	60	1
9.	Electrical Engg.	Programming and Simulation Lab	C024624(024)	-	-	2	40	-	20	60	1
10.	Humanities	Technical Communication and Soft Skill	C000601(046)	-	-	2	-	-	10	10	-
		Total		13	4	10	660	100	240	1000	21

L – Lecturer 　　　　　　　T – Tutorial, TA – Teacher's Assessment
P – Practical, 　　　　　　ESE – End Semester Exam, 　　　CT –ClassTest

Table I (Professional Elective II)

S.N.	Board of Studies	Subject	Course Code
1.	Electrical Engineering	Fibre Optics	C024631(024)
2.	Electrical Engineering	Microcontroller and Embedded System	C024632(024)
3.	Electrical Engineering	Hybrid Electric vehicle	C024633(024)
4.	Electrical Engineering	Digital Control System	C024634(024)

Note: (1) 1/4th of total strength of students subject to minimum of 20 students is required to offer and elective in the college in a particular academic session.

(2) Choice of elective course once made for an examination cannot be changed in future examinations.

B Tech (Sixth Semester)

List of Open Elective – I (Table III) (For 6th Semester)

S.N.	Board of Studies	Subject	Course Code
1	Agriculture Engg.	Food Packaging Technology	C000601(094)
2	Agriculture Engg	Energy Management & Audit	C000602(094)
3	Agriculture Engg	Energy Conservation & Management	C000603(094)
4	Agriculture Engg	Disaster Management	C000604(094)
5	Agriculture Engg	Ecology and Sustainable Development	C000605(094)
6	Agriculture Engg	Non Conventional Energy Sources	C000606(094)
7	Mechanical Engineering	Safety Engineering	C000607(037)
8	Mechanical Engineering	Value Engineering	C000608(037)
9	Mechanical Engineering	Managing Innovation & Entrepreneurship	C000609(037)
10	Mechanical Engineering	Environment Pollution & Control	C000610(037)
11	Management	Enterprise Resource Planning ((Except CSE & IT Branch)	C000611(076)
12	Computer Science Engg.	Artificial Intelligence	C000612(022)
13	Computer Science Engg	Quantum Computing	C000613(022)
14	Computer Science Engg	Cyber Security	C000614(022)
15	Civil Engg	Construction engineering and management	C000615(020)
16	Civil Engg	Metro system and engineering	C000616(020)
17	Civil Engg	Infrastructure Planning and Management	C000617(020)
18	Computer Science Engg	Parallel Processing & Computing	C000618(022)
19	Computer Science Engg	Cryptography & Network Security	C000619(022)
20	Computer Science Engg	Cloud Computing	C000620(022)
21	Computer Science Engg	Computer Networks	C000621(022)
22	Computer Science Engg	Internet of Things	C000622(022)
23	Computer Science Engg	Data Structures and Algorithms	C000623(022)
24	Computer Science Engg	Big Data Analytics	C000624(022)
25	Electrical and Electronics Engg	Electrical Estimation and Costing	C000625(025)
26	Electrical and Electronics Engg	Energy Auditing and Management	C000626(025)
27	Management	Finance Management	C000627(076)
28	Mechanical Engineering	Safety Engineering	C000628(037)
29	Electronics & Telecom.	AI and Machine learning	C000629(028)
30	Electronics & Telecom.	Operating Systems	C000630(028)
31	Electronics & Telecom.	Internet & Web Technology	C000631(028)
32	Electronics & Telecom.	Database Management Systems (DBMS)	C000632(028)
33	Electronics & Telecom.	Device Modelling	C000633(028)
34	Electronics & Telecom.	Introduction to MEMS	C000634(028)
35	Mechanical Engineering	Principles of Management	C000635(037)
36	Mechanical Engineering	Advanced I.C. Engines	C000636(037)

37	Mechanical Engineering	Mechanical Vibrations & Condition Monitoring	**C000637(037)**
38	Mechatronics	Entrepreneurship Developments	**C000638(067)**
39	Plastic Engineering	Heat Transfer Operation	**C000639(095)**
40	Plastic Engineering	Process Economics and Management	**C000640(095)**
41	Plastic Engineering	Adhesive and Surface Coating	**C000641(095)**
42	Information Technology	E-Commerce	**C000642(033)**
43	Information Technology	Industrial Economics and Management	**C000643(033)**
44	Information Technology	Project Planning & Management	**C000644(033)**
45	Information Technology	Bio-Informatics	**C000645(033)**
46	Information Technology	Management Information System	**C000646(033)**
47	**Chemical Engineering**	**Plant Utility & Safety Engineering**	**C000647(019)**
48	**Chemical Engineering**	**Environment Pollution & Control**	**C000648(019)**

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Chhattisgarh Swami Vivekanand Technical University (CSVTU, NEWAI (C.G.))

SCHEME OF TEACHING AND EXAMINATION

B Tech (Seventh Semester – Electrical Engineering)

Sl.No.	Board of Studies (BOS)	Courses (Subject)	Course Code	Period per Week			Scheme of Examination Theory/Lab			Total Marks	Credit
				L	T	P	ESE	CT	TA		
1.	Electrical Engg.	Electric Drives	D024711(024)	3	1	-	100	20	30	150	4
2.	Electrical Engg.	Power Apparatus System	D024712(024)	2	1	-	100	20	30	150	3
3.	Electrical Engg.	High Voltage Engineering	D024713(024)	2	1	-	100	20	30	150	3
4.		*Professional Elective –III (Refer to Table I)*		1	1	-	100	20	30	150	2
5.		*Open Elective- II (Refer to Table II)*		2	0	-	100	20	30	150	2
6.	Electrical Engg.	Electric Drives Laboratory	D024721(024)	-	-	2	40	-	20	60	1
7.	Electrical Engg.	High Voltage Engineering Laboratory	D024722(024)	-	-	2	40	-	20	60	1
8.	Electrical Engg.	Project (Phase I)	D024723(024)	-	-	6	60	-	40	100	3
9.	Electrical Engg.	Industrial Training	D024724(024)			2			20	20	1
10.	Humanities	Universal Human Values 2	D000701(046)	-	-	2	-	-	10	10	-
		Total Marks		**10**	**4**	**14**	**640**	**100**	**260**	**1000**	**20**

L – Lecturer ,T – Tutorial, P – Practical , CT –Class Test ESE – End Semester Exam TA – Teacher's Assessment

➢ **Note: - The students have to attend the four weeks industrial training / summer internship in B. Tech program after sixth semester, which will be evaluated in seventh semester.**

Table I (Professional Elective III)

S.N.	Board of Studies	Course Code	Subject
1.	Electrical Engg.	D024731(024)	Energy Auditing and Management
2.	Electrical Engg.	D024732(024)	Systems Software
3.	Electrical Engg.	D024733(024)	Modeling & Simulation
4.	Electrical Engg.	D024734(024)	Advanced Microprocessor
5.	Electrical Engg.	D024735(024)	Embedded system software in C

6.	Electrical Engg.	D024736(024)	Microcontroller & embedded Systems
7.	Electrical Engg.	D024737(024)	Digital Image Processing
8.	Electrical Engg.	D024738(024)	Power Systems Operation and Control

Note: (1) 1/4th of total strength of students subject to minimum of 20 students is required to offer and elective in the college in a particular academic session.

(2) Choice of elective course once made for an examination cannot be changed in future examinations.

B Tech (Seventh Semester)

List of Open Elective – II (Table III) (For 7th Semester)

S.N.	Board of Studies	Course Code	Subject
1	Agriculture Engg	D000701(094)	Biomass Management For Fodder And Energy.
2	Agriculture Engg	D000702(094)	Gully And Ravine Control Structures
3	Civil Engg	D000703(020)	Design Of Structures.
4	Agriculture Engg	D000704(094)	Reservoir And Farm Pond Design.
5	Mechanical	D000705(037)	3 D Printing & design
6	Management	D000706(076)	TechnologyManagement
7	Information Technology	D000707(033)	Decision Support & ExecutiveInformationsystem
8	CSE	D000708(022)	Software Technology
9	Management	D000709(076)	Knowledge Entrepreneurship
10	Management	D000710(076)	Intellectual Property Rights
11	Biotechnology	D000711(018)	Phytochemistry
12	Biotechnology	D000712(018)	Clinical Research and Trial Management
13	Biotechnology	D000713(018)	Cellular and Molecular Diagnostics
14	Chemical Engineering	D000714(019)	Environmental Legislation & Impact Assessment
15	Civil Engineering	D000715(020)	Environmental management and Legislations
16	Civil Engineering	D000716(020)	Hydraulics of water and waste water
17	Civil Engineering	D000717(020)	Disaster Management
18	CSE	D000718(022)	Neural Network and Deep Learning
19	CSE	D000719(022)	Big data and Hadoop
20	CSE	D000720(022)	BioInformatics
21	CSE	D000721(022)	SoftwareTesting
22	EEE	D000722(025)	Switched Mode Power Converter
23	EEE	D000723(025)	Internet of Things
25	EEE	D000724(025)	Non Conventional Energy Sources
26	EEE	D000725(025)	Sensors and Transducers
27	Information Technology	D000726(033)	E-Commerce & strategic IT
28	Management	D000727(076)	Entrepreneurship
29	Information Technology	D000728(033)	Decision Support & Executive Information system
30	Computer Science & Engg.	D000729(022)	Software Technology
31	Electrical Engineering	D000730(024)	Solar PV Energy System
32	Mechanical Engineering	D000731(037)	Energy Conservation & Management
33	Information Technology	D000732(033)	Information Theory & Coding
34	Management	D000733(076)	Project Planning, Management & Evaluation

35	Electronics & Telecom	**D000734(028)**	Java Programming
36	Electronics & Telecom	**D000735(028)**	Cloud computing
37	Electronics & Telecom	**D000736(028)**	Big data Mining
38	Electronics & Telecom	**D000737(028)**	Cryptography & Network security
39	Electronics & Telecom	**D000738(028)**	Neural Network & Fuzzy Logic
40	Electronics & Telecom	**D000739(028)**	RF IC Design
41	Information Technology	**D000740(033)**	Graph Theory And Applications
42	Information Technology	**D000741(033)**	Biometrics
43	Information Technology	**D000742(033)**	Quantum Computing
44	Information Technology	**D000743(033)**	Entrepreneurship essentials
45	Information Technology	**D000744(033)**	Managerial Skills
46	Mechanical Engineering	**D000745(037)**	Mechatronics
47	Mechanical Engineering	**D000746(037)**	Engineering Economics
48	Mechanical Engineering	**D000747(037)**	Computer Graphics
49	Mechanical Engineering	**D000748(037)**	Control Engineering
50	Management	**D000749(076)**	Technology Management
51	Information Technology	**D000750(033)**	Decision Support & Executive Information system
53	Management	**D000751(076)**	Finance Management
54	Management	**D000752(076)**	Project Planning, Management & Evaluation
55	Mechanical Engg.	**D000753(037)**	Safety Engineering
56	Mechanical Engg.	**D000754(037)**	Energy Conservation & Management
57	Computer Science & Engg.	**D000755(022)**	Bio Informatics
58	Management	**D000756(076)**	Knowledge Entrepreneurship
59	Plastics Engineering	**D000757(095)**	Renewable Energy
60	Plastics Engineering	**D000758(095)**	Plastics Waste Management and Recycling

Sl. No.	Board of Studies (BOS)	Courses (Subject)	Course Code	Period per Week			Scheme of Examination Theory/Lab			Total Mark	Credit
				L	T	P	ESE	CT	TA		
1.	Electrical Engineering	Installation Maintenance & Testing of Electrical Equipments	D024811(024)	3	1	-	100	20	30	150	4
2.	Professional Elective–IV *(Refer to Table–I)*			2	1	-	100	20	30	150	3
3.	Open Elective–III *(Refer to Table–III)*			2	0	-	100	20	30	150	2
4.	Electrical Engineering	Installation Maintenance & Testing of Electrical Equipments (Lab)	D024821(024)	-	-	2	40	-	20	60	1
5.	Electrical Engineering	Simulation with MATLAB	D024822(024)	-	-	2	40	-	20	60	1
6.	Electrical Engineering	Project (Phase-II)	D024823(024)	-	-	14	350	-	80	430	7
	Total Marks			**7**	**2**	**18**	**730**	**60**	**210**	**1000**	**18**

L – Lecturer, T – Tutorial, P – Practical, CT –Class Test, ESE – End Semester Exam, TA – Teacher's Assessment

Table–I (Professional Elective–IV)

S.N.	Board of Studies	Course Code	Subject
1	Electrical Engineering	D024831(024)	EHV AC & DC Transmission
2	Electrical Engineering	D024832(024)	Flexible A C transmission System
3	Electrical Engineering	D024833(024)	Bio Medical Instrumentation
4	Electrical Engineering	D024834(024)	VLSI Design
5	Electrical Engineering	D024835(024)	Robotics and Automation
6	Electrical Engineering	D024836(024)	Energy Management Systems and SCADA (NPTEL) https://nptel.ac.in/courses/108/106/108106022/#
7	Electrical Engineering	D024837(024)	Smart Grid (NPTEL) https://nptel.ac.in/courses/108/107/108107113/
8	Electrical Engineering	D024838(024)	Electrical Estimation and Costing

Note: (1) 1/4th of total strength of students subject to minimum of 20 students is required to offer and elective in the college in a particular academic session.

(2) Choice of elective course once made for an examination cannot be changed in future Examinations.

List of Open Elective – III (Table – III) (For 8th Semester)

S.N.	Board of Studies	Course Code	Subject
1	Agriculture Engineering	D000801(094)	Environmental Science
2	Management	D000802(076)	Industrial Engineering & Management
3	Computer Science & Engineering	D000803(022)	Soft Computing Techniques
4	Mechanical	D000804(037)	Composite Materials
5	Electrical & Electronics Engineering	D000805(025)	Industrial Automation
6	Mechanical Engineering	D000806(037)	Production & Product Management
7	Electronics & Telecommunication	D000807(028)	Virtual Instrumentation
8	Computer Science & Engineering	D000808(022)	Data Sciences
9	Mechanical Engineering	D000809(037)	Computational Fluid Dynamics
10	Biotechnology	D000810(018)	Medical Biotechnology
11	Biotechnology	D000811(018)	Bioterrorism and National Security
12	Biotechnology	D000812(018)	Precision Medicine and Wellness
13	Chemical Engineering	D000813(019)	Non Conventional Energy Sources (NCES) (Except Electrical Engg. and Agriculture Engg.)
14	Civil Engineering	D000814(020)	Air pollution and control measures
15	Civil Engineering	D000815(020)	Solid and hazardous waste management
16	Computer Science Engineering	D000816(022)	Natural language processing
17	Computer Science Engineering	D000817(022)	Cluster and Grid Computing
18	Computer Science Engineering	D000818(022)	Blockchain
19	Computer Science Engineering	D000819(022)	Data Compression
20	Electrical & Electronics Engineering	D000820(025)	Power Plant Engineering
21	Electrical & Electronics Engineering	D000821(025)	Utilization of Electrical Energy and Electric Traction
22	Electrical & Electronics Engineering	D000822(025)	Introduction to Micro-electromechanical systems (MEMS)
23	Management	D000823(076)	Management Concept Techniques
24	Electronics & Telecom.	D000824(028)	Operational Research

25	Electronics & Telecom.	D000825(028)	Android Apps Development
26	Electronics & Telecom.	D000826(028)	Digital Switching & Multiplexing
27	Electronics & Telecom.	D000827(028)	Optimization Techniques
28	Information Technology	D000828(033)	Business Intelligence
29	Information Technology	D000829(033)	Game Theory
30	Information Technology	D000830(033)	Optimization Design And Techniques
31	Information Technology	D000831(033)	Software Metrics and Quality Assurance
33	Mechanical Engineering	D000833(037)	Energy Management and Audit
34	Information Technology	D000834(033)	Cyber Security and Information Security
35	Mechatronics Engineering	D000835(067)	Nanotechnology
36	Computer Science & Engineering	D000836(022)	Supply Chain Management
37	Electrical Engineering	D000837(024)	Electrical Estimation and Costing
38	Computer Science & Engineering	D000838(022)	Data Mining &Warehousing
39	Plastics Engineering	D000839(095)	Fiber Technology
40	Electrical Engineering	D000840(024)	Wind Energy