### Walchand College of Engineering

(Government Aided Autonomous Institute) Vishrambag, Sangli. 416415



### Course Contents for S. Y. M. Tech. (Power System Engineering)

### Semester III & IV

2023-24

PG Coordinator

VSMOR

HOD (Electrical Engg.)

## Semester- III Professional Core (Theory) Courses

		, , uiv	(Government Aided	d Autonomous Institute)	ngn	
			AY	2023-24		
			Course	Information		
Progr	amme		M. Tech. (Power	System Engineering)		
Class, Semester Course Code			Second Year M.	Tech., Sem I		
			6PS601			
Cours	e Name		Legal, Financial	aspects of industrial proj	ect	una partiene
Desired Requisites:			10 m			
	Teaching	Scheme	Examinat	ion Scheme (Marks)		
Lectu	re	2 Hrs/week	MSE	ISE	ESE	Total
Tutor	ial		30	20	50	100
			le le le le le coltra o	Credits: 2		
			Course	Objectives		
1	To ident	ify and analyze	the relevant legal is	sues involved in Industri	al Project and cr	iminal matters
	affecting	g business.				
2	To under	rstand theories of	of value, risk and ret	turn, capital investment of	lecisions, wages	and working
3	To been	isurance scheme	s, labour laws.	ty in ayle an anala and dif		-
3	10 0000		Outcomes (CO) w	ith Bloom's Taxonomy	Level	5.
At the	end of the	course the stud	tents will be able to	III Diooni S Laxonomy	Level	
		course, the stat		5	Bloom's	Bloom's
СО		Cour	se Outcome Stater	nent/s	Taxonomy	Taxonomy
					Level	Description
CO1	To unde	erstand the tern	ns involved and l	aws applicable for an	П	Understandi
	Industria	al Project.			11	g
CO2	To get a	equainted with in	nvestments, taxes a	nd employee schemes.	III	Applying
CO3	To be far	miliar with Cybe	er laws applicable f	or cyber-crimes.	III	Applying
Modi	ıle		Module (	Contents		Hours
	Econ	omic Decision	Making			IIOUIS
	Intro	duction, Mather	natics of Time Valu	ue of Money: Compound	I Interest, Cash	
Ι	Flow	Diagram, U	niform Annual S	4		
	Com	Comparison: Present Worth Analysis, Annual Cost Analysis, Capitalized Cost				
		110	Worth Analysis, A	Annual Cost Analysis, Ca	apitalized Cost	
	Anal	ysis	t worth Analysis, A	Annual Cost Analysis, C	apitalized Cost	
	Anal Taxe	ysis s and Profitabili	ty	Annual Cost Analysis, C	apitalized Cost	
II	Anal Taxe Taxe	ysis s and Profitabili s, Profitability	ty of Investments: F	Annual Cost Analysis, Control Cost Analysis,	k Period, Net	4
II	Anal Taxe Taxe Prese	ysis s and Profitabili s, Profitability ent Worth, Inter ysis Uncertainty	ty of Investments: F nal Rate of Return	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an	apitalized Cost k Period, Net nd Break-Even	4
II	Anal Taxe Taxe Prese Anal	ysis s and Profitabili s, Profitability ent Worth, Inter ysis, Uncertainty pries Act 1948	ty of Investments: F nal Rate of Return y in Economic Ana	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis	apitalized Cost k Period, Net nd Break-Even	4
II	Anal Taxe Taxe Prese Anal Facto Heal	ysis s and Profitabili s, Profitability ent Worth, Inter ysis, Uncertainty pries Act, 1948 th, Safety, Prov	ty of Investments: F nal Rate of Return y in Economic Ana isjons relating to H	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis	k Period, Net nd Break-Even	4
II	Anal Taxe Taxe Prese Anal Facto Healt Hour	ysis s and Profitabili s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Prov s of Adults, E	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents	k Period, Net nd Break-Even lfare, Working for M. Tech	4
II	Anal Taxe Taxe Prese Anal Facto Healt Hour Prog	ysis s and Profitabili s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Proviss of Adults, E ramme, Departm	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2	k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons,	4
II III	Anal Taxe Taxe Prese Anal Facto Healt Hour Progr Annu	ysis s and Profitability s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Provi s of Adults, E ramme, Departm nal Leave with v	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F wages. The Employ	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2 rees Provident Fund and	k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons, Miscellaneous	4
II	Anal Taxe Prese Anal Facto Healt Hour Progr Annu Provi	ysis s and Profitability s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Prov rs of Adults, E ramme, Departm nal Leave with v isions Act, 1952	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F wages. The Employ	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2 rees Provident Fund and	k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons, Miscellaneous	4
Ш	Anal Taxe Taxe Prese Anal Facto Healt Hour Prog Annu Provi Cons	ysis s and Profitability s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Provi s of Adults, E ramme, Departm nal Leave with v isions Act, 1952 titution and Lab	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F wages. The Employ our Laws	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2 rees Provident Fund and	apitalized Cost k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons, Miscellaneous	4
II III IV	Anal Taxe Taxe Prese Anal Facto Healt Hour Progr Annu Provi Cons I abou	ysis s and Profitability s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Proviss of Adults, E ramme, Departm nal Leave with v isions Act, 1952 titution and Lab ar laws, Equality	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F wages. The Employ our Laws y before law and its	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2 rees Provident Fund and s application in Labour I	apitalized Cost k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons, Miscellaneous	4
II III IV	Anal Taxe Taxe Prese Anal Facto Healt Hour Progr Annu Provi Cons labou for ec	ysis s and Profitability s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Proviss of Adults, E ramme, Departm nal Leave with v isions Act, 1952 titution and Lab ur laws, Equality qual work; and A	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F wages. The Employ our Laws y before law and its Article-16 and reser	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2 rees Provident Fund and s application in Labour I rvation policies, Articles	apitalized Cost k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons, Miscellaneous aws, Equal pay 19, 21, 23 and	4
II III IV	Anal Taxe Prese Anal Facto Healt Hour Progr Annu Provi Cons labou for eo 24 an	ysis s and Profitability s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Proviss of Adults, E ramme, Department al Leave with v isions Act, 1952 titution and Lab ar laws, Equality qual work; and A dits implication	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F wages. The Employ our Laws y before law and its Article-16 and resents.	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2 rees Provident Fund and a application in Labour I rvation policies, Articles	apitalized Cost k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons, Miscellaneous Laws, Equal pay 19, 21, 23 and	4
II III IV	Anal Taxe Taxe Prese Anal Facto Healt Hour Prog Annu Provi Cons labou for ec 24 an Intell	ysis s and Profitability s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Provi s of Adults, E ramme, Departm nal Leave with v isions Act, 1952 titution and Lab ar laws, Equality qual work; and A its implication lectual Property	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F wages. The Employ our Laws y before law and its Article-16 and resents. in Cyber Space	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity an lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2 rees Provident Fund and s application in Labour I rvation policies, Articles	apitalized Cost k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons, Miscellaneous Laws, Equal pay 19, 21, 23 and	4
II III IV V	Anal Taxe Taxe Prese Anal Facto Healt Hour Provi Cons labou for ec 24 an Intell Comp	ysis s and Profitability s, Profitability ent Worth, Inter ysis, Uncertainty ories Act, 1948 th, Safety, Provis s of Adults, E ramme, Departm tal Leave with v isions Act, 1952 titution and Lab tr laws, Equality qual work; and A d its implication ectual Property puter Software bases and the lagest	ty of Investments: F nal Rate of Return y in Economic Ana isions relating to H Employment of yo nent of Electrical F wages. The Employ our Laws y before law and its Article-16 and resen is. in Cyber Space and Copyright aw Domain Nam	Annual Cost Analysis, Ca Rate of Return, Paybac , Inflation, Sensitivity and lysis lazardous Processes, We ung 4 Couse Contents Engineering, AY 2021-2 rees Provident Fund and s application in Labour I rvation policies, Articles Law, Software Licentes and the Jaw Trades	apitalized Cost k Period, Net nd Break-Even lfare, Working for M. Tech 2 persons, Miscellaneous Laws, Equal pay 19, 21, 23 and ces, Computer	4

(

VI	Cyber Crimes and Cyber Laws Cyber Crimes, Malware, Computer Source Code, Digital Signature, Information Technology Laws, IT ACT & how to prevent yourself from being a victim of Cyber Crime.	4				
	Textbooks	1.1.0001				
l	P.L. Mehta, Managerial Economics Analysis, Problems and cases, S. Chand & Co	.Ltd., 2001				
2	Dieter G.E., Engineering Design, McGraw-Hill Education 5 th edition, 2012					
3	N. Godbole, S. Belapure, "Cyber Security Understanding Cyber Crimes, Compute and Legal Perspectives", Wiley India Pvt. Ltd.	ter Forensics				
4	Canter, L. W, Environmental Impact Assessment, McGraw-Hill, 2 nd Edition, 1997.					
5	"Environmental Auditing", Published by CPCB, Govt. of India Publication, New Delhi.					
	이 같은 것은 것은 것은 것은 것을 알려요. 가지만 한 것은 것을 가지 않는다. 또한 것은 것은 같은 것은					
	References					
1	Peterson and Lewis: Managerial Economics, 4 th Ed., Prentice Hall, 2004					
2	R. Drefuss, J. Pila; The Oxford Handbook of Intellectual Property Law, Oxfor Press, 2018.	rd University				
3	Adv. P. Mali, Cyber Law & Cyber Crimes Simplified, Cyber Infomedia, 2017.					
4	No.29 of 1986, [23/5/1986] - The Environment (Protection) Act, 1986, amended 1	991				
5	G.S.R.830(E), [24/11/2011] - The Water (Prevention and Control of Pollution) Rules, 2011.	Amendment				
6	No.14 of 1981, [29/3/1981] - The Air (Prevention and Control of Pollution amended 1987	) Act 1981,				
	Useful Links					

#### Useful Links

	Programme Outcomes (PO)					
	1	2	3	4	5	6
CO1				2	Declar-Sig	
CO2		2			1	
CO3				2		

#### Assessment

The assessment is based on MSE, ISE and ESE.

MSE shall be typically on modules 1 to 3.

1

-

ISE shall be taken throughout the semester in the form of teacher's assessment. Mode of assessment can be field visit, assignments etc. and is expected to map at least one higher order PO.

ESE shall be on all modules with around 40% weightage on modules 1 to 3 and 60% weightage on modules 4 to 6.

For passing a theory course, Min. 40% marks in (MSE+ISE+ESE) are needed and Min. 40% marks in ESE are needed. (ESE shall be a separate head of passing)

## Professional Core (Laboratory) Courses

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)	
	AY 2023-24	
	Course Information	
Programme	M. Tech. (Power System Engineering)	
Class, Semester	Second Year M. Tech., Sem I	
Course Code	6PS645	
Course Name	Dissertation Phase I	
Desired Requisites:	Concept knowledge of research methodology, project management, Electrical Engineering	

Teaching Scheme		Examination Scheme (Marks)		
Practical	6 Hrs/ Week	LA1		
Interaction		100		
		Credit	s: 3	

#### **Course Objectives**

- 1 To develop the student to apply the knowledge gained to identify problems for research and provide the solutions by self-study and interaction with stakeholders.
- 2 Acquire knowledge to tackle real world problems of societal concerns
- 3 Impart flexibility to the student to have increased control over his/ her learning
- 4 Teachers would serve as mentor/facilitator of inquiry and reflection rather than as an instructor
- 5 Enhance a students' learning through increased interaction with peers and colleagues.

Course Outcomes (CO) with Bloom's Taxonomy Level

At the end of the course, the students will be able to,

CO	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description
CO1	Search the existing literature and identification of research problem	IV	Analyze
CO2	Design and develop the solution for complex engineering problem	V	Evaluate
<b>CO3</b>	Create the new knowledge in the specialized field	VI	Create
	List of Experiments / Lab Activities/Topics		

ISE for dissertation phase 1 is based on the efforts by the student for synopsis preparation. It shall be evaluated using the parameters extent of literature review, scope defined, objectives, and fundamental concepts, quality of presentation, and interaction during presentation, effort/work done, quality of report and interaction with guide.

	Textbooks
1	As per the research topic
	References
1	National and International Journals
	Useful Links
1	https://nptel.ac.in/courses/121/106/121106007/
2	https://www.youtube.com/watch?v=mAVswCbz_jM&feature=emb_imp_woyt
3	https://nptel.ac.in/courses/110/104/110104073/
4	https://nptel.ac.in/courses/110/107/110107081/

			CO-PO Map	ping			
	Programme Outcomes (PO)						
	1	2	3	4	5	6	
CO1	1			1	1	2	
CO2	1		1		2	1	
CO3		2				1	

The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High Each CO of the course must map to at least one PO.

			AY 2023-24			
			Course Information	******		
Prog	ramme		M. Tech. (Power System Engineering)			
Class	, Semester	r	Second Year M. Tech., Sem I			
Course Code			6PS646			
Cour	se Name		Dissertation Phase II			
Desir	ed Requis	sites:	Concept knowledge of research methodolog Electrical Engineering	y, project mana		
	Teaching	Scheme	Examination Schem	e (Marks)		
Pract	ical	6 Hrs/ Week	LA2	c (initians)		
Inter	action		100			
			Credits: 3			
			Course Objectives			
1	To deve	lop the student t	o apply the knowledge gained to identify prob	lems for resear		
1	the solu	tions by self-stu	dy and interaction with stakeholders.			
2	Acquire	knowledge to ta	ckle real world problems of societal concerns			
3	Impart flexibility to the student to have increased control over his/ her learning					
4 <u>-</u>	Teacher	's would serve as	mentor/facilitator of inquiry and reflection ra	ther than as an		
3 -	Enhance a students' learning through increased interaction with peers and colleagues.					
At the	end of th	e course the stu	dents will be able to	Level		
		e course, me stu	dents will be able to,	Bloom's		
CO		Cou	rse Outcome Statement/s	Taxonomy Level		
CO1	Search	the existing liter	ature and identification of research problem	IV		
CO2	Design	and develop the	solution for complex engineering problem	V		
CO3	Create	the new knowled	lge in the specialized field	VI		
			List of Experiments / Lab Activities/Topics			
	ISE for defined progress done, re during p Commi	dissertation pha- in the synopsis a s seminar(s) at the sults and discuss presentation and ttee (DEC).	se 2 is based on the progress made during the and the report submitted by the students. It sh he end of the semester. The parameters for even sion/publication efforts, quality of presentation interaction with guide. ISE shall be conducted	semester for th all be evaluated aluation includ n, quality of re d by Dissertation		
- 1	1	.1 .	Textbooks			
1	As p	er the research t	opic			
			References			
1	Nati	onal and Interna	tional Journals			
	ý		Useful Links			
1	https	://nptel.ac.in/co	urses/121/106/121106007/			
1	https	://www.voutube	.com/watch?v=mAVswCbz iM&feature=em	b_imp_woyt		
2	1	11 1 1 1	/110/104/110104070/			

(

	Programme Outcomes (PO)					
	1	2	3	4	5	6
CO1	1			1		2
CO2	1		1		2	1
CO3		2				1

Each CO of the course must map to at least one PO.

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)
	AY 2023-24
	Course Information
Programme	M. Tech. (Power System Engineering)
Class, Semester	Second Year M. Tech., Sem I
Course Code	6PS647
Course Name	Dissertation Phase III
Desired Requisites:	Concept knowledge of research methodology, project management, Electrical Engineering

Teaching Scheme		Examination Sche	eme (Marks)
Practical	8 Hrs/ Week	ESE	
Interaction		100	
		Credits	4

#### **Course Objectives**

- To develop the student to apply the knowledge gained to identify problems for research and provide 1 the solutions by self-study and interaction with stakeholders.
- 2 Acquire knowledge to tackle real world problems of societal concerns
  - 3 Impart flexibility to the student to have increased control over his/ her learning
- 4 Teachers would serve as mentor/facilitator of inquiry and reflection rather than as an instructor 5
  - Enhance a students' learning through increased interaction with peers and colleagues.

Course Outcomes (CO) with Bloom's Taxonomy Level

At the end of the course, the students will be able to,

CO	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description
<b>CO1</b>	Search the existing literature and identification of research problem	IV	Analyze
CO2	Design and develop the solution for complex engineering problem	V	Evaluate
CO3	Create the new knowledge in the specialized field	VI	Create

#### List of Experiments / Lab Activities/Topics

ESE for dissertation phase 3 shall be conducted at the end of semester by a duly constituted examination panel composed of Chairman, internal examiner (guide) and external examiner.

	Textbooks
1	As per the research topic
	References
1	
1	National and International Journals
1	National and International Journals
1	Useful Links
1	Useful Links         https://nptel.ac.in/courses/121/106/121106007/
1 1 2	Useful Links           https://nptel.ac.in/courses/121/106/121106007/           https://www.youtube.com/watch?v=mAVswCbz_jM&feature=emb_imp_woyt
1 1 2 3	Useful Links           https://nptel.ac.in/courses/121/106/121106007/           https://www.youtube.com/watch?v=mAVswCbz_jM&feature=emb_imp_woyt           https://nptel.ac.in/courses/110/104/110104073/

	Programme Outcomes (PO)							
	1	2	3	4	5	6		
CO1	1			1		2		
CO2	1		1		2	1		
CO3		2	•			1		

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)	
	AY 2023-24	
	Course Information	
Programme	M. Tech. (Power System Engineering)	
Class, Semester	Second Year M. Tech., Sem I	
Course Code	6PS651	
Course Name	Industry Orientation Course	
Desired Requisites:		

Teachin	g Scheme		Examinatio	n Scheme (Marks)	
Practical		LA1	LA2	Lab ESE	Total
Interaction	1 Hrs/ Week	30	30	40	100
· · · · ·		0	C	redits: 1	

	Course Objectives
1	To provide a hands on experience of software in solving complex electrical engineering problems.
2	To enhance the employability of electrical control engineering student.
	Course Outcomes (CO) with Bloom's Taxonomy Level

At the end of the course, the students will be able to,

СО	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description
CO1	Use of the software related to design of electrical system effectively.	V	Evaluate
CO2	<b>Develop</b> the solution for electrical engineering problem using software.	VI	Create
CO3	Explain the working of research and development department.	II	Understand

#### List of Experiments / Lab Activities/Topics

This course is based on computers as a tool to design and analyse the electrical system. In the modern day work environment, Electrical Engineer should be able to simulate and solve complex problems on computers. Electrical Engineer must be highly computer literate. The engineer with strong fundamentals in Control Engineering and computer software proficiency is highly in demand from industry. Employability of the student can be enhanced by providing software training of Analysis and simulation software in electrical engineering.

#### Textbooks

1 Suitable books based on the software selected.

#### References

Suitable books based on the contents of software selected

#### **Useful Links**

As per the need of the software training

1

1

		Programme Outcomes (PO)						
	1	2	3	4	5	(		
CO1		1						
CO2			2			2		
CO3				3				

Each CO of the course must map to at least one PO.

#### Assessment

There are three components of lab assessment, LA1, LA2 and Lab ESE. IMP: Lab ESE is a separate head of passing.(min 40 %), LA1+LA2 should be min 40%

Assessment	Based on	Conducted by	Typical Schedule	Marks
LAI	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 8 Marks Submission at the end of Week 8	30
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 9 to Week 16 Marks Submission at the end of Week 16	30
Lab ESE	Lab activities, journal/ performance	Lab Course Faculty and External Examiner as applicable	During Week 18 to Week 19 Marks Submission at the end of Week 19	40

Week 1 indicates starting week of a semester. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming, and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments and related activities if any.

# Professional Elective (Theory) Courses

		Walch	and College of Er	ngineering	g, Sangli		
			(Government Aided Autor	10mous Institu	te)		
			AY 2023-	24			
			Course Inform	mation			
Progr	amme		M Tech (Power Sys	tem Engine	ering)		
Class,	Semest	ter	Second Year M. Tech., Sem I				
Cours	e Code		6PS611 Professional Elective 4: Power System Dynamics				
Cours	e Name	2					
Desire	d Requ	isites:	Power system				
		~ .					
Tea	iching S	Scheme	Exa	imination S	Scheme (Mar	ks)	
Lecture 3Hrs/week		3Hrs/week	MSE	15E	ESE	lotal	
lutor	ai	-	30 Condi	20   tax 3	50	100	
*****			Creat	18: 5			
			Course Obie	ctives			
1	To int	oduce the conc	ept of small signal and t	ransient stab	ility analysis o	f power systems.	
2	To pro	vide solutions t	o SSR problem and volt	tage stability	problem.	r po non of oronion	
		Course Ou	itcomes (CO) with B	loom's Tax	onomy Level		
At the	end of t	the course, the	students will be able	to,	•		
CO		Course (	<b>Dutcome Statement/s</b>	5	Bloom's	Bloom's	
	8				Taxonomy Level	Taxonomy Description	
CO1	Distin	i <b>guish</b> various	categories of system	stability.	Ι	Understandin	
	Analy	nalyse models, use analytical tools to decide upon IV					
CO2	the sta	bility of vario	us types.	eenae apon		Analyzing	
CO2 CO3	the sta Recor type o	bility of vario <b>nmend</b> variou f stabilities of	us types. Is methods to improve power system.	e various	V	Analyzing Evaluating	
CO2 CO3	the sta <b>Recor</b> type o	<b>Se</b> models, us ability of vario <b>nmend</b> variou f stabilities of	is methods to improve power system.	e various	V	Analyzing Evaluating	
CO2 CO3 Modu	the state <b>Recor</b> type of <b>le</b>	<b>se</b> models, us ability of vario <b>nmend</b> variou f stabilities of	bus types. Is methods to improve power system. Module Conte	e various ents	V	Analyzing Evaluating Hour	
CO2 CO3 Modu	the star Recor type o	se models, us ability of variou <b>nmend</b> variou f stabilities of troduction to	is methods to improve power system. Module Conte small signal stability	e various ents y of power s	V	Analyzing Evaluating Hour s	
CO2 CO3 Modu	the sta Recor type o	ability of variou nmend variou f stabilities of troduction to	is methods to improve power system. Module Conte small signal stability	e various ents y of power s	V	Analyzing Evaluating Hour s	
CO2 CO3 Modu	the sta Recor type o le In Sn	se models, us ability of variou <b>nmend</b> variou f stabilities of troduction to nall Signal Sta	us types. Is methods to improve power system. Module Conte small signal stability ability analysis of sin	e various ents y of power s	V system e connected	Analyzing Evaluating Hour s to 4	
CO2 CO3 Modu I	the sta Recor type o le In Sn inf	se models, us ability of variou <b>nmend</b> variou f stabilities of troduction to nall Signal Sta inite bus. Step	<ul> <li>bus types.</li> <li>is methods to improve</li> <li>power system.</li> <li>Module Conte</li> <li>small signal stability</li> <li>ability analysis of sin</li> <li>p by step model deve</li> </ul>	e various ents y of power s agle machin elopmentof	V system e connected to single maching	Analyzing Evaluating Hour s to 4 ne	
CO2 CO3 Modu I	the sta Recor type o le In Sn inf col	se models, us ability of variou <b>nmend</b> variou f stabilities of troduction to nall Signal Sta inite bus. Step nnected to infi	Module Conte small signal stability ability analysis of sin p by step model deve inite bus.	e various ents y of power s agle machin elopmentof	V system e connected single machin	Analyzing Evaluating Hour s to 4 ne	
CO2 CO3 Modu I	the sta Recor type o le In Sn inf col Im	troduction to nall Signal Sta inite bus. Step proceed to infi	Module Conte Small signal stability ability analysis of sin p by step model deve inite bus. f small signal stabilit	e various ents y of power s agle machin elopmentof	V system e connected single machin	Analyzing Evaluating Hour s to 4 ne	
CO2 CO3 Modu	the sta Recor type o le In Sn inf coi Im	se models, us ability of variou <b>nmend</b> variou f stabilities of troduction to hall Signal Sta inite bus. Step nnected to infi provement of wer system st	Module Conte small signal stability ability analysis of sin p by step model deve inite bus. f small signal stabilit	e various ents y of power s agle machin elopmentof by	V system e connected single machin	Analyzing Evaluating Hour s to 4 ne 4	
CO2 CO3 Modu I	the sta Recor type o le In Sn inf con Im Po res	se models, us ability of variou <b>nmend</b> variou f stabilities of troduction to hall Signal Sta inite bus. Step nnected to infi provement of wer system st ponse using	Module Conte small signal stability ability analysis of sin p by step model deve inite bus. f small signal stabilit abilizer, Simulation of power systemstabilit	e various ents y of power s agle machin elopmentof by of Power Sy izer in the	V system e connected t single machin /stem Dynam e small sign	Analyzing Evaluating Hour s to 4 ne 4 ic 6	

Tak

	I and coole a construction of	
	Large scale power systems	
III	Dynamic equalization of large scale system systems. Step by step reduction of large scale model to a smaller model for analysis purpose.	6
	Transient stability analysis	
IV	Introduction to Direct method of transient stability analysis by roller ball analogy. Development of modelusing energy concept, and analysis of model for transient stability.	4
	Sub synchronous resonance	
V	Introduction to Sub-Synchronous oscillation & sub- synchronous resonance. Effect of series compensation of transmission line. Induction generator effect, stability of hydro turbines.	4
	Voltage stability	
VI	Reactive power compensation and Voltage stability. Development of model of power system for voltage stability. Sensitivity analysis and QV modal analysis for voltage stability. Methodsof improving stability.	4
	Text Books	
1	P. Kundur, " Power System, Stability and Control", Tata McGraw Hill, 1994.	New Delhi,
	References	
1	K. R. Padiyar, "Power System Dynamic, Stability & Control", B.S. H 2008.	Publication,
1	Useful Links	
l		

		CO-P	O Mapping				
	Programme Outcomes (PO)						
**********	1	2	3	4	5	6	
CO1			3				
CO2				3			
CO3						2	

Yala

#### Assessment

The assessment is based on MSE, ISE and ESE.

MSE shall be typically on modules 1 to 3.

ISE shall be taken throughout the semester in the form of teacher's assessment. Mode of assessment can be field visit, assignments etc. and is expected to map at least one higher order PO.

ESE shall be on all modules with around 40% weightage on modules 1 to 3 and 60% weightage on modules 4 to 6.

For passing a theory course, Min. 40% marks in (MSE+ISE+ESE) are needed and Min. 40% marks in ESE are needed. (ESE shall be a separate head of passing)



		(Governmen	nt Aided Autonomo	us Institute)		
			AY 2023-24			
		Co	ourse Informatio	n		
Progra	ımme	M. Tech. (Power	System Enginee	ring)		
Class,	Semester	Second Year M.	Tech., Sem I			
Course	e Code	6PS612	21 Mar 201			
Course	e Name	Professional Elec	tive 4: HVDC T	ransmission		
Desire	d Requisites:	Power Electronic	s, Power System	n Engineering		
	<b></b>				-	
T	eaching Scheme		Examina	tion Scheme (M	arks)	
Lectur	e 3 Hrs/week	MSE	ISE	ESE	]	Fotal
Tutori	al -	30	20	50		100
				Credits: 3		
			ourse Objective	<b>.</b>		
	It is aimed to provi	ide detailed knowle	edge of controlle	d converters for	HVDC transmi	ssion
1	system.	de detaned known	edge of controlle	a converters for	IT VDC transmi	331011
2	It demonstrates use	e of different control	ol and protection	methods in HVI	DC transmissio	n system.
3	It provides recent t	rends in HVDC tra	ansmission system	n.		
	Co	ourse Outcomes (	CO) with Bloom	's Taxonomy L	evel	
At the	end of the course, the	e students will be a	ible to,		Diama	Diama
CO		Lourse Outcome	e Statement/s		Taxonomy Level	Taxonomy Description
CO1	Investigate approp transmission system	oriate control and p n.	protection scheme	es for HVDC	III	Applying
CO2	Interpret perform	ance of converter f	for HVDC transm	ission systems.	IV	Analyzing
CO3	Appraise recent tr	ends in HVDC trar	nsmission system	S.	V	Evaluating
		-				
Modu		N	1odule Contents			Hours
Ι	Comparison of systems, comp	FEHVAC and HVI onents of HVDC t	DC Transmission system	<b>gy</b> 1, types of HVD0 em	C transmission	6
II	<ul> <li>Analysis of HVDC converter</li> <li>II Different modes of valve operation, o/p voltage waveforms and D C voltage in rectification, and inverter operation, valve voltages, equivalent electrical circuit, converter charts.</li> </ul>					6
III	HVDCTS control features         Control modes, control schemes and their comparisons, energization and de- energization of bridges, starting and stopping of D C link.					6
IV	Faults and over-voltages       6         Converter mal-operations, commutation failure, over-voltages in HVDCTS, protection of converters, D C reactor and damper circuits.       6					



	Harmonics and their suppression in HVDCTS	
V	Harmonic analysis, filter design, minimum cost tuned A C filters, reactive power requirements.	
	Multi terminal HVDCTS	
VI	Series and parallel MTDCTS, their control, introduction to HVDC light, recent trends in HVDCTS.	
	Text Books	
1	E.W. Kimbark, "Direct Current Transmission", Win publisher.	
2	K.R. Padiyar, "H.V.D.C. Power Transmission", Wiley Eastern New Delhi.	Sec. 24
	References	
1	J. Arrillaga, "H.V.D.C. Transmission", Peter limited.	
2	S.Rao, "E.H.V.A.C. & H.V.D.C. Transmission", Khanna Publishers.	
	Useful Links	
1		

			CO-PO	O Mapping					
	Programme Outcomes (PO)								
	PO1	PO2	PO3	PO4	PO5	PO6			
CO1		al constraints		3	tern dit				
CO2			3						
CO3						2			
The stren	ath of mann	ing is to be w	ritten as 1 2 3. 1	Where 1.1 our 2	Medium 3. High				

The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High Each CO of the course must map to at least one PO.

#### Assessment

The assessment is based on MSE, ISE and ESE.

MSE shall be typically on modules 1 to 3.

ISE shall be taken throughout the semester in the form of teacher's assessment. Mode of assessment can be field visit, assignments etc. and is expected to map at least one higher order PO.

ESE shall be on all modules with around 40% weightage on modules 1 to 3 and 60% weightage on modules 4 to 6.

For passing a theory course, Min. 40% marks in (MSE+ISE+ESE) are needed and Min. 40% marks in ESE are needed. (ESE shall be a separate head of passing)

# **AICTE Mandatory Courses**

Y	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)	
	AY 2023-24	
	Course Information	
Programme	M. Tech. (Power System Engineering)	
Class, Semester	Second Year M. Tech., Sem I	
Course Code	61C601	
Course Name	Value Education	
Desired Requisites:		

Teaching Scheme			<b>Examination</b> S	cheme (Marks)	
Lecture	2 Hrs/week	MSE	ISE	ESE	Total
Tutorial		30	20	50	100
			Crea	lits: 0	

	Course Objectives				
1	To impart knowledge on value of education and self- development.				
2	To imbibe good values in students.				
3	To highlight importance of character.				
	Course Outcomes (CO) with Bloom's Taxonomy L	evel			
At the	end of the course, the students will be able to,				
со	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description		
C01	Explain value of education and self- development.	II	Understandi ng		
CO2	Summarize importance of good character, and Behaviour development.	IV	Evaluating		

Module	Module Contents	Hours		
Ι	Values and self-development –Social values and individual attitudes. Work ethics, Indian vision of humanism, Moral and non- moral valuation. Standards and principles, Value judgments.			
II	Importance of cultivation of values, Sense of duty. Devotion, Self-reliance, confidence, Concentration. Truthfulness, Cleanliness, Honesty, Humanity, Power of faith, National Unity, Patriotism, Love for nature, Discipline.			
Ш	Personality and Behaviour Development - Soul and Scientific attitude. Positive Thinking. Integrity and discipline, Punctuality, Love and Kindness, Avoid fault Thinking, Free from anger, Dignity of labour universal brotherhood and religious tolerance, True friendship, Happiness vs. suffering, love for truth, Aware of self-destructive habits, Association and Cooperation, Doing best for saving nature	7		
IV	Character and Competence –Holy books vs. Blind faith, Self-management and Good health, science of reincarnation, Equality, Nonviolence, Humility, Role of Women, All religions and same message, Mind your Mind, Self-control. Honesty, Studying effectively			
	Textbooks			
1	Chakroborty, S.K. "Values and Ethics for organizations Theory and practic University Press, New Delhi	ce", Oxford		
	References			
1	-			
	1			
	Useful Links			

Course Contents for M. Tech Programme, Department of Electrical Engineering, AY2023-24

The

	CO-PO Mapping
4	https://trudreadz.com/2019/09/10/blind-faith-in-religion-destroys-our-ability-to-critically-think-for-ourselves/
3	https://www.verywellmind.com/personality-development-2795425
2	http://cbseacademic.nic.in/web_material/ValueEdu/Value%20Education%20Kits.pdf
1	https://nimsuniversity.org/wp-content/uploads/2018/02/Value-Education-Human-Rights-and Legislative-Procedures.pdf

Programme Outcomes (PO)								
	PO1	PO2	PO3	PO4	PO5	PO6		
CO1	2		4		1	2		
CO2	1		1			2		

The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High. Each CO of the course must map to at least one PO.

Assessment

The assessment is based on MSE, ISE and ESE.

MSE shall be typically on modules 1 to 3.

ISE shall be taken throughout the semester in the form of teacher's assessment. Mode of assessment can be field visit, assignments etc. and is expected to map at least one higher order PO.

ESE shall be on all modules with around 40% weightage on modules 1 to 3 and 60% weightage on modules 4 to 6.

For passing a theory course, Min. 40% marks in (MSE+ISE+ESE) are needed and Min. 40% marks in ESE are needed. (ESE shall be a separate head of passing)

### Semester- IV Professional Core (Lab) Courses

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)
	AY 2023-24
	Course Information
Programme	M. Tech. (Power System Engineering)
Class, Semester	Second Year M. Tech., Sem II
Course Code	6PS691
Course Name	Dissertation Phase IV
Desired Requisites:	Concept knowledge of research methodology, project management, Electrical Engineering

Teaching Scheme		Examination Schen	ne (Marks)
Practical	10 Hrs/ Week	LA1	
Interaction		100	
		Credits:	5

	Course Objectives					
1	To develop the student to apply the knowledge gained to identify problems for research and provide the solutions by self-study and interaction with stakeholders.					
2	Acquire knowledge to tackle real world problems of societal concerns					
3	Impart flexibility to the student to have increased control over his/ her learning					
4	Teachers would serve as mentor/facilitator of inquiry and reflection rather than as an instructor					
5	Enhance a students' learning through increased interaction with peers and colleagues.					
	Course Outcomes (CO) with Bloom's Taxonomy I	Level				
At the	end of the course, the students will be able to,					
СО	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description			

co	Course Outcome Statement/s	Level	Description
<b>CO1</b>	Search the existing literature and identification of research problem	IV	Analyzing
CO2	Design and develop the solution for complex engineering problem	V	Evaluating
CO3	Create the new knowledge in the specialized field	VI	Creating

#### List of Experiments / Lab Activities/Topics

ISE for dissertation phase 4 is based on the efforts by the student for synopsis preparation. It shall be evaluated using the parameters extent of literature review, scope defined, objectives, and fundamental concepts, quality of presentation, and interaction during presentation, effort/work done, quality of report and interaction with guide.

	Textbooks
1	As per the research topic
	References
1	National and International Journals
	Useful Links
1	https://nptel.ac.in/courses/121/106/121106007/
2	https://www.youtube.com/watch?v=mAVswCbz_jM&feature=emb_imp_woyt
3	https://nptel.ac.in/courses/110/104/110104073/
4	https://nptel.ac.in/courses/110/107/110107081/

	Programme Outcomes (PO)					
	1	2	3	4	5	6
CO1	1			1		2
CO2	1		1		2	1
CO3		2				1

Hates

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)
	AY 2023-24
	Course Information
Programme	M. Tech. (Power System Engineering)
Class, Semester	Second Year M. Tech., Sem II
Course Code	6PS692
Course Name	Dissertation Phase V
Desired Requisites:	Concept knowledge of research methodology, project management, Electrical Engineering

Teaching Scheme		Examination Schem	e (Marks)
Practical	10 Hrs/ Week	LA2	
Interaction		100	
		Credits: 5	

	Course Objectives
1	To develop the student to apply the knowledge gained to identify problems for research and provide the solutions by self-study and interaction with stakeholders.
2	Acquire knowledge to tackle real world problems of societal concerns
3	Impart flexibility to the student to have increased control over his/ her learning
4	Teachers would serve as mentor/facilitator of inquiry and reflection rather than as an instructor
5	Enhance a students' learning through increased interaction with peers and colleagues.
	Course Outcomes (CO) with Bloom's Taxonomy Level
At the	end of the course, the students will be able to,

CO	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description
<b>CO1</b>	Search the existing literature and identification of research problem	IV	Analyzing
CO2	Design and develop the solution for complex engineering problem	V	Evaluating
CO3	Create the new knowledge in the specialized field	VI	Creating

#### List of Experiments / Lab Activities/Topics

ISE for dissertation phase 5 is based on the progress made during the semester for the objectives defined in the synopsis and the report submitted by the students. It shall be evaluated through progress seminar(s) at the end of the semester. The parameters for evaluation include extent of work done, results and discussion/publication efforts, quality of presentation, quality of report, interaction during presentation and interaction with guide. ISE shall be conducted by Dissertation Evaluation Committee (DEC).

	Textbooks
1	As per the research topic
	References
1	National and International Journals
-	
_	Useful Links
1	Useful Links https://nptel.ac.in/courses/121/106/121106007/
1 2	Useful Links https://nptel.ac.in/courses/121/106/121106007/ https://www.youtube.com/watch?v=mAVswCbz_jM&feature=emb_imp_woyt
1 2 3	Useful Links https://nptel.ac.in/courses/121/106/121106007/ https://www.youtube.com/watch?v=mAVswCbz_jM&feature=emb_imp_woyt https://nptel.ac.in/courses/110/104/110104073/

			Programme (	<b>Dutcomes (PO)</b>		
	1	2	3	4	5	6
CO1	1			1		2
CO2	1		1		2	1
CO3		2				1

Each CO of the course must map to at least one PO.



	Valchand College of Engineering, Sangli (Government Aided Autonomous Institute)
	AY 2023-24
	Course Information
Programme	M. Tech. (Power System Engineering)
Class, Semester	Second Year M. Tech., Sem II
Course Code	6PS693
Course Name	Dissertation Phase VI
Desired Requisites:	Concept knowledge of research methodology, project management, Electrical Engineering

Teaching Scheme		Examination Sch	eme (Marks)
Practical	12 Hrs/ Week	ESE	
Interaction		100	
		Credit	s: 6

#### **Course Objectives**

1	To develop the student to apply the knowledge gained to identify problems for research and provide the solutions by self-study and interaction with stakeholders.
2	Acquire knowledge to tackle real world problems of societal concerns
3	Impart flexibility to the student to have increased control over his/ her learning

4 Teachers would serve as mentor/facilitator of inquiry and reflection rather than as an instructor

5 Enhance a students' learning through increased interaction with peers and colleagues.

Course Outcomes (CO) with Bloom's Taxonomy Level

At the end of the course, the students will be able to,

CO	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description
<b>CO1</b>	Search the existing literature and identification of research problem	IV	Analyzing
CO2	Design and develop the solution for complex engineering problem	V	Evaluating
CO3	Create the new knowledge in the specialized field	VI	Creating

#### List of Experiments / Lab Activities/Topics

ESE for dissertation phase 6 shall be conducted at the end of semester by a duly constituted examination panel composed of Chairman, internal examiner (guide) and external examiner.

	Textbooks
1	As per the research topic
	References
1	National and International Journals
	Usoful Links
	USEIUI LIIIKS
1	https://nptel.ac.in/courses/121/106/121106007/
1 2	https://nptel.ac.in/courses/121/106/121106007/ https://www.youtube.com/watch?v=mAVswCbz_jM&feature=emb_imp_woyt
1 2 3	https://nptel.ac.in/courses/121/106/121106007/ https://www.youtube.com/watch?v=mAVswCbz_jM&feature=emb_imp_woyt https://nptel.ac.in/courses/110/104/110104073/

	Programme Outcomes (PO)						
	1	2	3	4	5	6	
CO1	1			1		2	
CO2	1		1		2	1	
CO3		2				1	

Each CO of the course must map to at least one PO.



Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)	
AY 2023-24	
Course Information	
M. Tech. (Power System Engineering)	
Second Year M. Tech., Sem II	
6PS694	
Techno-Socio Activity	
	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute) AY 2023-24 Course Information M. Tech. (Power System Engineering) Second Year M. Tech., Sem II 6PS694 Techno-Socio Activity 

Teachin	g Scheme		Examinatio	n Scheme (Marks)	
Practical		LA1	LA2	Lab ESE	Total
Interaction	1 Hrs/ Week	30	30	40	100
		an frank commu	C	redits: 1	

	Course Objectives		
1	To record student performance in co-curricular and extra-curricular acti considered.	vities over two	years will be
2	To encourage the students to participate in activities that help develop le integrity, coordination skills, Time management, Communications skill	eadership skills s, Interviewing	, team skills etc.
3	To highlight importance of social responsibility.		
	Course Outcomes (CO) with Bloom's Taxonomy L	level	
At the	end of the course, the students will be able to,		
CO	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description
CO1	Notice an improvement in his/her understanding and presentation	III	Applying

	skills.		
CO2	<b>Understand</b> and value the importance of working in a diversified team.	IV	Analyzing
CO3	<b>Demonstrate</b> the soft skills like presentation skills, technical report writing etc.	V	Evaluating

#### List of Experiments / Lab Activities/Topics

The guide will be mentoring a given student batch for the duration of two years. The students shall submit proof of their achievements in various extra and co-curricular activities related to technical, cultural and social causes from first year to second year. The faculty will evaluate the students' performance at the end of 4<sup>th</sup>semester, based on the rubrics provided by the department from time to time.

		Textbooks	
1	NA		
		-	
		References	
1	NA		
		Useful Links	
1	NA		



	Programme Outcomes (PO)							
	1	2	3	4	5	6		
CO1	2	53 2 2 2 2 2 2 2 2			3			
CO2		1			2			
CO3			2		3			

	Assessment
There are three components of lab assessment	t, LA1, LA2 and Lab ESE
IMP. I ab ESE is a separate head of passing (	min $40\%$ I $\Delta 1 + I \Delta 2$ she

IMP: Lab ESE is a	a separate head	of passing.	(min 40 %),	, LA1+LA2	should be min 40%
-------------------	-----------------	-------------	-------------	-----------	-------------------

Assessment	Based on	Conducted by	Typical Schedule	Marks
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 8 Marks Submission at the end of Week 8	30
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 9 to Week 16 Marks Submission at the end of Week 16	30
Lab ESE	Lab activities, journal/ performance	Lab Course Faculty and External Examiner as applicable	During Week 18 to Week 19 Marks Submission at the end of Week 19	40

Week 1 indicates starting week of a semester. Lab activities/Lab performance shall include performing experiments, mini-project, presentations, drawings, programming, and other suitable activities, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments and related activities if any.

### **AICTE Mandatory Courses**

V	Valchand College of Engineering, Sangli (Government Aided Autonomous Institute)
	AY 2023-24
	Course Information
Programme	M. Tech. (Power System Engineering)
Class, Semester	Second Year M. Tech., Sem II
Course Code	61C602
Course Name	Constitution of India
Desired Requisites:	

Teachi	ing Scheme		<b>Examination</b> S	cheme (Marks)	
Lecture	2 Hrs/week	MSE	ISE	ESE	Total
Tutorial		30	20	50	100
			Credits: 0		

		Course Objectives				
1	To	preview and create awareness on various provisions in the constituti	on of India.			
		Course Outcomes (CO) with Bloom's Taxonomy L	evel			
At the	enc	of the course, the students will be able to,		****		
со		Course Outcome Statement/s Bloom's Taxonomy Level				
CO1	E: fro	<b>xplain</b> the premises informing the twin themes of liberty and eedom from a civil rights perspective.	II	Understandin g		
CO2	2 Address the growth of Indian opinion regarding modern Indian II intellectuals constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early years of Indian nationalism					
CO3	<b>Address</b> the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution					
Modu	le	Module Contents		Hours		
I		History of Making of the Indian Constitution Drafting (Composition & Working	Committee,	4		
II	II Philosophy of the Indian Constitution : Preamble, Salient Feature			4		
III	Contours of Constitutional Rights: Fundamental Rights; Right to Equality; Right to Freedom; Right against Exploitation; Right to Freedom of Religion; Cultural and Educational Rights; Right to Constitutional Remedies; Directive Principles of State Policy; Eundamental Duties			5		
IV	IV Organs of Governance: Parliament, Composition, Qualifications and Disqualifications, Powers and Functions, Executive, President, Governor, Council of Ministers Judiciary, Appointment and Transfer of Judges, Qualifications, Powers and Functions					
v	Local Administration:           District"s Administration head: Role and Importance, Municipalities           Introduction, Mayor and role of Elected Representative, CEO of Municipal           V           Corporation. Pachayati raj: Introduction, PRI: Zila Pachayat. Elected officials           and their roles, CEO ZilaPachayat: Position and role. Block level           Organizational Hierarchy (Different departments), Village level: Role of           Elected and Appointed officials			5		

Hoto

Course Contents for M. Tech Programme, Department of Electrical Engineering, AY2023-24

VI	<b>Election Commission:</b> Election Commission: Role and Functioning. Chief Election Commissioner and Election Commissioners. State Election Commission: Role and Functioning. Institute and Bodies for the welfare of SC/ST/OBC and women.	5
	Textbooks	
1	Dr. S. N. Busi, Dr. B. R. Ambedkar "Framing of Indian Constitution" 1st Edition	on 2015
-2	M. P. Jain, "Indian Constitution Law", 7th Edn. Lexis Nexis 2014	
3	D.D. Basu, "Introduction to the Constitution of India", Lexis Nexis, 2015	
	Defermences	
1	The Constitution of India, 1950 (Bare Act), Government Publication	
	Useful Links	
1	https://en.wikipedia.org/wiki/Constituent Assembly of India	
2	https://nptel.ac.in/courses/129/106/129106003/	
3	https://nptel.ac.in/noc/courses/noc20/SEM2/noc20-1w02/	
4	https://eci.gov.in/about/about-eci/the-functions-electoral-system-of-india-r2/	

		C	O-PO Mappir	ıg		
Programme Outcomes (PO)						
	PO1	PO2	PO3	PO4	PO5	PO6
CO1			1			
CO2	2			••••••••••••••••••••••••••••••••••••••		
CO3				1		2

The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High. Each CO of the course must map to at least one PO.

#### Assessment

The assessment is based on MSE, ISE and ESE.

MSE shall be typically on modules 1 to 3.

ISE shall be taken throughout the semester in the form of teacher's assessment. Mode of assessment can be field visit, assignments etc. and is expected to map at least one higher order PO.

ESE shall be on all modules with around 40% weightage on modules 1 to 3 and 60% weightage on modules 4 to 6.

For passing a theory course, Min. 40% marks in (MSE+ISE+ESE) are needed and Min. 40% marks in ESE are needed. (ESE shall be a separate head of passing)

Hads

Course Contents for ACT to From any net Department of Electrical Engineering, AV2027.