# Walchand College of Engineering

T

(Government Aided Autonomous Institute)

Vishrambag, Sangli. 416 415



**Course Contents for** 

F.Y. B.Tech. (Computer Science and Engineering)

Sem-I and II

AY 2023-24



HOD

CSE

Page No. / Date: 18 / 08 /2023

# Walchand College of Engineering

(Government Aided Autonomous Institute)

# Credit System for F.Y. B.Tech. (Computer Science and Engineering) Sem-I AY 2023-24

Sr.No.	Category	Course Code	Course Name	L	T	P	T	His	Cr	MSE/LA1	ISE/LA2	ESE
			Professional Core (The	eory)								
01	BS	7MA101	Engineering Mathematics - I	3	1	0	0	4	4	30	20	50
02	85	7PH103	Engineering Physics	3	0	0	0	3	3	30	20	50
03	ES	7AM102	Engineering Mechanics	2	0	0	0	2	2	30	20	50
04	ES	7CM106	Civil & Mechanical Engineering	3	0	0	0	3	3	30	20	50
05	PC	7CS101	Computer and Networking Essentials	3	0	0	0	3	3	30	20	50
			Professional Core (L	ab)								
06	BS	7PH155	Engineering Physics Lab	0	0	2	0	2	1	30	30	40
07	HS	7HS101	Communication & Generic Skills	0	0	2	1	3	2	30	30	40
08	ES	7AM155	Engineering Mechanics Lab	0	0	2	0	2	1	30	30	40
09	ES	7CM156	Civil & Mechanical Engineering Lab	0	0	2	0	2	1	30	30	40
10	PC	7CS151	Computer and Networking Essentials Lab	0	0	2	0	2	1	30	30	40
11	VS	7V\$151	Engineering Skills - I	0	0	2	0	2	1	30	30	40
			Total	14	1	12	1	28	22			

#### Notes:

- For Theory courses: There shall be MSE, ISE and ESE. Theory-ESE is a separate head of passing.
- For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). Lab-ESE is a separate head of passing.
- For Lab Courses, (LA1+LA2) should be >= 40% to appear for Lab ESE.
- **For further details, refer to Academic and Examination rules and regulations.**



Dr. N. L. Gavankar DAC/Secretary, BoS

Williel

Dr. Mrs. M. A. Shah Head, Computer Science and Engg. Dept./ Chairman, BoS

Dr. Mrs. S. P.

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Walchand College of Engineering, Sangli											
			(Government Aided	l Autonomous Institu	nte)						
			AY	2023-24							
			Course	Information							
Progr	amme		B.Tech. (All Bran	nches)							
Class,	Semester		First Year B. Tec	h., Sem I							
Cours	se Code		7MA101								
Cours	se Name		Engineering Mat	nematics- I							
Desire	ed Requisi	tes:	Mathematics cou	rse at Higher Seco	ndary Junior Colleg	e					
Teaching Scheme         Examination Scheme (Marks)											
Lectu	re	3 Hrs/week	MSE	ISE	ESE	Total					
Tutor	ial	1 Hrs/week	30	20	50	100					
				Cred	its: 04						
			Course	Objectives							
1	Introduce of differe	e the basic conce ential equation.	epts required to unc	lerstand, construct	, solve and interpret	various types					
2	Improve	the Mathematic	al skill for enhanci	ng logical thinking	power of students						
3	Acquire l	knowledge with	a sound foundation	n in Mathematics a	nd prepare them for	r graduate.					
4											
A ( 1	1 6 4	Course	Outcomes (CO) w	ith Bloom's Taxo	nomy Level						
At the	Exploin r	course, the stud	ients will be able to	na fiald		Understanding					
		nathematical co	incepts in engineeri	lig field.		Understanding					
CO2     Solve engineering and scientific problems.     Applying											
CO3	O3   Applying the Mathematical concept in Engineering field   Applying										
<b>CO4</b>											

Module	Module Contents	Hours
I	Matrices Rank of matrix, Homogeneous and non-homogeneous linear equations, Eigen values, Eigen vectors, Cayley Hamilton theorem, Diagonalizations of matrices.	6
П	<b>Partial Differentiation and its application</b> Partial derivative, chain rule for partial differentiation, Euler's theorem for homogeneous and non-homogeneous function, Jacobian, Error and approximation, maxima and minima of function of two variables	8
III	<b>Complex Number</b> Polar form of complex number, Argand's diagram, De Moiver's theorem, roots of complex number, Hyperbolic function, relation between circular and hyperbolic function.	7

	First order ordinary differential equation and its application	
IV	Exact, Linear, Bernoulli's equations, Euler's equations, Orthogonal trajectory,	_
	applications to simple electric circuit.	7
	Numerical Solution of Ordinary Differential Equations of first order and	
V	first degree:	<i>.</i>
v	Numerical Solution by (i) Taylor's series method (ii) Euler's method (iii)	6
	Modified Euler's method (iv) Runge- Kutta fourth order method	
	Calculus	
VI	Rolle's theorem, Mean value theorem, Taylor's and Maclaurin's theorem with	_
	remainders	5
	Textbooks	
1	P. N. and J. N. Wartikar "A Text Book of Applied Mathematics, Vol I and II	, Vidyarthi Griha
-	Prakashan, Pune, 2006.	
2	B.S. Grewal "Higher Engineering Mathematics", , Khanna Publication, 44th	Edition, 2017.
3		
4		
	References	
1	Erwin Kreyszig, "Advanced Engineering Mathematics", Wiley Eastern Lin 10 <sup>th</sup> Edition, 2015.	nited Publication,
2	Wylie C.R " <i>Advanced Engineering Mathematics</i> ",., Tata McGraw Hill Public 1999.	ation, 8th Edition
3	H. K. Dass, "Advanced Engineering Mathematics", S. Chand & Company Ltd.,	1 <sup>st</sup> Edition, 2014.
4	B.V.Ramana, "Higher Engineering Mathematics", The McGraw Hill compani	es, 2006.
	·	
	Useful Links	
1	https://nptel.ac.in/courses/111105121	
2		
3		
4		

CO-PO Mapping														
		Programme Outcomes (PO)												
	1	1         2         3         4         5         6         7         8         9         10         11         12											1	2
CO1	2			1										
CO2	2			1										
CO3	2			1										
CO4														
The streng	The strength of mapping is to be written as 1: Low, 2: Medium, 3: High													
Each CO	of the c	course r	nust m	ap to at	least c	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)

Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)											
		Government	AY 2023-24	istitute)							
		Cou	irse Information								
Programme		B.Tech. (Comp	uter Science & Eng	gineering a	and Informat	ion Technology)					
Class, Semes	ster	First Year B.Te	ch., Sem I / II								
Course Code	e	7PH103									
Course Nam	e	Engineering Ph	ysics for CSE & IT	Engineer	S						
Desired Req	uisites:	Students are ex	pected to know the	basic con	cept in Physi	cs.					
Teachin	ig Scheme		<b>Examination Scheme (Marks)</b>								
Lecture	03Hrs/week	MSE	MSE ISE ESE								
Tutorial	0 Hrs/week	30	20	50	)	100					
			C	redits: 3							
		0									
1	TT :1.1	Co	ourse Objectives	1.	1 • 1•						
	To provide bas	ic concepts to so	Ive many engineeri	$\frac{1}{100}$ ng and tec	chnical issue	S.					
2	To give deep in	nsights into the u	nderstanding of eng	gineering of	courses.						
3	To encourage t	nem to understar	a engineering and								
At the end of	the course the s	tudents will be a	O) with Bloom's I	axonomy	Level						
	At the end of the course, the students will be able to,										
1			Bloom's	Bloom's							
СО		Course Outcome	e Statement/s		Bloom's Taxonomy Level	Bloom's Taxonomy Descriptor					
СО	Exhibit memor	Course Outcome	e Statement/s earned information	by recal	Bloom's Taxonomy Level	Bloom's Taxonomy Descriptor					
СО	Exhibit memor ling facts, term	Course Outcome y of previously less, basic concepts	e Statement/s earned information in Wave Optics,	by recal Modern	Bloom's Taxonomy Level	Bloom's Taxonomy Descriptor					
CO CO1	Exhibit memor ling facts, term Physics and	Course Outcome y of previously les, basic concepts Quantum	e Statement/s earned information in Wave Optics, Mechanics, Ul	by recal Modern trasonic,	Bloom's Taxonomy Level	Bloom's Taxonomy Descriptor Remembering					
CO CO1	Exhibit memor ling facts, term Physics and Semiconductor	Course Outcome ry of previously le is, basic concepts l Quantum rs, Nanoscience	e Statement/s earned information in Wave Optics, Mechanics, Ul e and Nanotec	by recal Modern trasonic, hnology,	Bloom's Taxonomy Level	Bloom's Taxonomy Descriptor Remembering					
CO CO1	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation	Course Outcome y of previously le s, basic concepts l Quantum rs, Nanoscience n and Transducer	e Statement/s earned information in Wave Optics, Mechanics, Ul e and Nanotect	by recal Modern trasonic, hnology,	Bloom's Taxonomy Level	Bloom's Taxonomy Descriptor Remembering					
CO CO1 CO2	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate u	Course Outcome ry of previously le is, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c. facts and ideas by re	by recal Modern trasonic, hnology, ecalling,	Bloom's Taxonomy Level	Bloom's         Taxonomy         Descriptor         Remembering         Understanding					
CO CO1 CO2	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate un comparing, inte	Course Outcome ry of previously le is, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all t	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c. facts and ideas by re- erms in these modu	by recal Modern trasonic, hnology, ecalling, les.	Bloom's Taxonomy Level	Bloom's         Taxonomy         Descriptor         Remembering         Understanding					
CO CO1 CO2	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate u comparing, inter Solve problems knowledge fac	Course Outcome ry of previously le s, basic concepts d Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all t s to new situation	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c. Cacts and ideas by re- erms in these modu ns by applying acquired rules for various	by recal Modern trasonic, hnology, ecalling, les. ired	Bloom's Taxonomy Level	Bloom's         Taxonomy         Descriptor         Remembering         Understanding					
CO CO1 CO2 CO3	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate u comparing, into Solve problems knowledge, fac in a different w	Course Outcome ry of previously le is, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all t s to new situation ets, techniques an	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c. facts and ideas by re- erms in these modu as by applying acquired rules for various	by recal Modern trasonic, hnology, ecalling, les. ired concepts	Bloom's Taxonomy Level	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying					
CO1 CO1 CO2 CO3 Module	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate un comparing, inte Solve problems knowledge, fact in a different w	Course Outcome ry of previously le is, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all t s to new situation ets, techniques an ray.	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c. Cacts and ideas by re- erms in these modu ns by applying acquind rules for various	by recal Modern trasonic, hnology, ecalling, les. ired concepts	Bloom's Taxonomy Level	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours					
CO1 CO1 CO2 CO3 Module	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate un comparing, into Solve problems knowledge, fact in a different w	Course Outcome ry of previously le is, basic concepts I Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all te s to new situation ets, techniques an vay. Mod Introduction, i	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c cacts and ideas by re- erms in these modu as by applying acquing by applying acquing d rules for various contents interference of lig	by recal Modern trasonic, hnology, ecalling, les. ired concepts	Bloom's Taxonomy Level	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours					
CO1 CO1 CO2 CO3 Module	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate u comparing, into Solve problems knowledge, fac in a different w Wave optics: Fresnel's diffe	Course Outcome ry of previously le is, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all t s to new situation ets, techniques an /ay. <u>Mod</u> Introduction, i raction: Fresnel	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c. facts and ideas by re- erms in these modu as by applying acquing d rules for various lule Contents interference of lig s's half-period zor	by recal Modern trasonic, hnology, ecalling, les. ired concepts ght, Newt	Bloom's Taxonomy Level 1 2 3 ton's rings, plate and	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours         6					
CO1 CO2 CO3 Module I	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate un comparing, into Solve problems knowledge, fact in a different w Wave optics: Fresnel's diffi diffraction at a	Course Outcome y of previously le is, basic concepts Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all te is to new situation ets, techniques an vay. Mod Introduction, in raction: Fresnel <sup>2</sup> straight edge.	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c cacts and ideas by re- erms in these modu as by applying acquing d rules for various a <b>lule Contents</b> interference of lig c's half-period zor Fraunhofer's diffra	by recal Modern trasonic, hnology, ecalling, les. ired concepts ght, Newt hes, zone ction: Dif	Bloom's Taxonomy Level 1 2 3 ton's rings, plate and fraction due	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours         6					
CO1 CO2 CO3 Module I	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate u comparing, into Solve problems knowledge, fac in a different w Wave optics: Fresnel's diffi diffraction at a to single slit, D	Course Outcome ry of previously le is, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all t is to new situation rets, techniques an vay. Mod Introduction, if raction: Fresnel straight edge. Diffraction due to	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c facts and ideas by re- erms in these modu is by applying acqui d rules for various lule Contents interference of lig 's half-period zor Fraunhofer's diffra- double slits, Plane	by recal Modern trasonic, hnology, ecalling, les. ired concepts ght, Newt nes, zone ction: Dif diffraction	Bloom's Taxonomy Level 1 2 3 ton's rings, plate and fraction due n grating.	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours         6					
CO1 CO2 CO3 Module I	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate ut comparing, inte Solve problems knowledge, fac in a different w Wave optics: Fresnel's diffi diffraction at a to single slit, D Modern Phys radiation Play	Course Outcome y of previously leas, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all te s to new situation ets, techniques an vay. Mod Introduction, in raction: Fresnel straight edge. Diffraction due to ics and Quantum	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c acts and ideas by re- erms in these modu as by applying acquing drules for various a <b>lule Contents</b> interference of lig 's half-period zor Fraunhofer's diffra- double slits, Plane <b>m mechanics:</b> Intre theory, Wien's di	by recal Modern trasonic, hnology, ecalling, les. ired concepts ght, Newt nes, zone ction: Dif diffraction roduction, splacement	Bloom's Taxonomy Level 1 2 3 ton's rings, plate and fraction due n grating. black body nt law and	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours         6					
CO1 CO2 CO3 Module I	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate u comparing, into Solve problems knowledge, fac in a different w Wave optics: Fresnel's diff diffraction at a to single slit, D Modern Phys radiation, Plan Rayleigh – Je	Course Outcome ry of previously leas, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all t s to new situation test, techniques an vay. Mod Introduction, if raction: Fresnel straight edge. Diffraction due to ics and Quantum ans law, phase	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c facts and ideas by re- erms in these modu is by applying acquind rules for various lule Contents interference of lig 's half-period zor Fraunhofer's diffra- double slits, Plane m mechanics: Intr theory, Wien's di velocity, group	by recal Modern trasonic, hnology, ecalling, les. ired concepts tht, Newthes, zone ction: Dif diffraction roduction, splacement	Bloom's Taxonomy Level 1 2 3 ton's rings, plate and fraction due n grating. black body nt law and and particle	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours         6					
CO1 CO2 CO3 Module I	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate u comparing, into Solve problem knowledge, fact in a different w Wave optics: Fresnel's diffi diffraction at a to single slit, D Modern Phys radiation, Plan Rayleigh – Je velocity, de-Bn	Course Outcome y of previously leas, basic concepts l Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all te s to new situation ets, techniques an vay. Mod Introduction, in raction: Fresnel straight edge. Diffraction due to ics and Quantum ans law, phase coglie's hypothes	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect c acts and ideas by re- erms in these modu as by applying acquart d rules for various a <b>lule Contents</b> interference of lig 's half-period zor Fraunhofer's diffra- double slits, Plane <b>m mechanics:</b> Intr theory, Wien's di velocity, group sis, Photoelectric ef	by recal Modern trasonic, hnology, ecalling, les. ired concepts ght, Newt hes, zone ction: Dif diffraction roduction, splacemen velocity a fect, Com	Bloom's Taxonomy Level 1 2 3 ton's rings, plate and fraction due n grating. black body nt law and and particle pton effect,	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours         6         8					
CO1 CO2 CO3 Module I	Exhibit memor ling facts, term Physics and Semiconductor Instrumentation Demonstrate u comparing, into Solve problem knowledge, fac in a different w Wave optics: Fresnel's diffi diffraction at a to single slit, D Modern Phys radiation, Plan Rayleigh – Je velocity, de-Bu Heisenberg's u	Course Outcome y of previously leas, basic concepts a Quantum rs, Nanoscience n and Transducer nderstanding of f erpreting for all t s to new situation ets, techniques an yay. <u>Mod</u> Introduction, if raction: Fresnel <sup>2</sup> straight edge. Diffraction due to ics and Quantum ans law, phase roglie's hypothes incertainty princi	e Statement/s earned information a in Wave Optics, Mechanics, Ul e and Nanotect and Nanotect arrs and ideas by re- facts and ideas by re- arrs in these modu as by applying acquart by applying acquart and rules for various by applying acquart interference of lig is half-period zor Fraunhofer's diffra- double slits, Plane <b>m mechanics:</b> Intre- theory, Wien's di velocity, group sis, Photoelectric ef- iple and application	by recal Modern trasonic, hnology, ecalling, les. ired concepts diffraction oduction, splacemen velocity a fect, Com	Bloom's Taxonomy Level 1 2 3 ton's rings, plate and fraction due n grating. black body nt law and and particle pton effect, unction and	Bloom's         Taxonomy         Descriptor         Remembering         Understanding         Applying         Hours         6         8					

III	Ultr (Ma way velo	rasonic agnetos zes by pocity of cientifi	e: In triction Kundt's f ultrase c and e	and and s tube, onic wa	tion, Piezoel therma aves in ring fie	gener lectric al detec liquid ld.	ation methoc ction an , applic	of l), dete nd sens cations	ultrason ection itive fla of ultra	nic v of ultra ame me asonic v	waves asonic ethod, waves		6		
IV	Sen clas den leve sem	nicond sificati sity of el with nicondu	uctors: on of s states, h tem ctor, H	Int olid on Fermi- peratur all effe	roducti basis Dirac s e, ele ct, basi	on, of banc statistic ectrical ic conce	format l theory s, Fern cond ept of p	ion of y, numb ni level luctivity p-n junc	ener per leve , variat y of ction.	gy tels in a ion of metal	bands, band, Fermi and		7		
V	Nan nan nan mat Vap App app	nanotechnology, Surface to volume ratio, Two main approaches in nanotechnology -Bottom up technique and top down technique. Nano materials: Methods to synthesize nanomaterials (Ball milling, Sputtering, Vapour deposition, sol gel), properties and applications of nanomaterials. Applications of nanomaterials, Introduction to Carbon Nanotubes and its applications. Instrumentation and Transducers: Introduction, instrumentations,													
VI	Inst mea tran tran stra and	applications.Instrumentation and Transducers: Introduction, instrumentations, measurement system, control system, Transducer and Sensor: transducers, sensors, classification of transducers, characteristics of transducers, selection criterion for transducers, temperature transducers, strain gauge, pressure transducers, force transducers, optical transducers and actuators.6													
Textbooks															
1	Itextbooks         1       M. N. Avadhanulu and P. G. Kshirsagar, "A Text book of Engineering Physics", S.Chand Pub.												ıand		
2	R. K. Gaur and S. L. Gupta "Engineering Physics", Dhanpat Rai Publications, 2011														
						D f									
1	Hal	liday I	2 Acria	and We	alkor "	Keler Fundan	ences	of Phy	sice" I	ohn Wi	10V 0t1	a editio	n 2011		
2		nuay, 1 Reiser	"Conce	$\frac{110}{10}$ we	Moder	n Physi	cs" M	Graw	Hill Int	ernatio	nal 5th	edition	$\frac{112011}{12003}$	·	
3	Aio	v Ghat	ak. "Or	ptics".	Fata M	cGraw	$\frac{00}{100}, \frac{100}{100}$	h editio	$n_{2012}$	)	nui, su	realtion	1, 2003	•	
4	Hal Pres	it Eren ss 2018	, John (	G. Web	ster "N	leasure	ement,	Instrum	entatio	n, and S	Sensors	s Handł	ook" (	CRC	
5	Cha	rles P.	Poole a	nd Fra	nk J. O	wner, "	Introdu	uction t	o Nano	technol	ogy", V	Wiley I	ndia.		
						Useful	Links								
1	For	optics	https:/	//nptel	.ac.in/c	ourses	/122/1	07/122	107035	5/					
2	For	Quant	um Phy	sics <u>ht</u>	<u>tps://r</u>	<u>ptel.ac</u>	.in/coι	urses/1	22/106	/12210	<u>6034/</u>				
3	For	Ultrase	onic <u>ht</u>	tps://fi	reevide	olectu	res.con	<u>n/cours</u>	e/3531	<u>/engin</u>	eering-	physics	-i/8		
4	For	Solid S	State Pl	nysics	https:/	/nptel.	ac.in/co	ourses/	115/10	5/1151	.05099	L			
5	For	Introdu	uction t	o Nanc	otechno	ology <u>I</u>	https://	'youtu.	<u>be/ebC</u>	<u>38bbq</u>	<u>) 4</u>				
6	For	Instru	nentati	on and	Transc	lucers	https:/	/youtu.	be/1uP	TyjxZzy	<u>0</u>				
					C		Monni	20							
					Dro	orrol		ng mag (D	0)				DC	0	
	1	2	2	4	rrogr	amme				10	11	10	1		
		2	5	4	5	0	/	8	9	10	11	12	1	2	
<u> </u>	2					<u> </u>									
<u>CO2</u>	2					ļ	ļ								
CO3	2														
The strength	of ma	ipping i	is to be	writter	n as 1: ]	Low, 2:	Mediu	ım, 3: H	ligh						

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 Tests, assignments, oral, seminar etc. and is expected to map at least one higher order PO.

ESE shall be on all modules with around 30 - 40% weightage on modules 1 to 3 and 60 - 70% 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)

		Walc	hand College	of Engineering, Sa ed Autonomous Institute)	ingli			
-			AY	2023-24				
			Course	Information				
Progra	amme		B.Tech. (CSE, I	T, Electrical, Electronics	)			
Class,	Semester	r	First Year B. Te	ch., Sem I/II				
Cours	e Code		7AM102					
Cours	e Name		Engineering Me	chanics				
Desire	d Requis	ites:	Physics					
	Teaching	Scheme		Examination Schem	e (Marks)			
Lectu	re	2 Hrs/week	MSE	ISE	ESE	Total		
Tutorial			30	20	50	100		
				Credits: 2				
			Course	e Objectives				
1	To impa	rt knowledge on	fundamentals of n	nechanics				
2	To provi	ide knowledge of	basic concepts ar	nd system of forces in stat	ics and dynam	nics		
3	To illust	rate the principle	s of mechanics in	engineering applications				
	1 64	Course	Outcomes (CO) v	vith Bloom's Taxonomy	Level			
At the	end of the	e course, the stud	ents will be able to	0,	Ploom's	Ploom's		
co		Course	Taxonomy	Taxonomy				
		course	. Outcome States	incinu's	Level	Description		
COI	Explain	Understandin						
CO2	Apply f	undamental conc	epts of mechanic	s to solve problems on	Ш	Applying		
<u></u>	static sy	stems	DIAL I			Appijing		
COS	Dise Ne	wion's laws of	motion, D'Alemi	berts and work energy	ш	Applying		
	principit	is to some proofe	ins related to dyna	anne systems				
Modu	le		Module (	Contents		Hours		
	Forc	e System:	50 B20					
I	Fund	lamentals, Syster	ms, Composition	and Resolution, Resulta	int of planar	5		
	force	systems. Free	Body Diagram, L	aws of Forces, Varignoi	n's Theorem,	-		
	Equi	librium:						
	Conc	epts of determin	acy and indetermine	nacy, Equilibrium of bear	ns, Supports,			
11	Load	ls, Equilibrium, F	Reactions Principl	le of Virtual Work and its	applications	4		
	to sta	tically determination	te beams					
ш	Cent	roid and Mome	nt of Inertia	t of Inortic of Diana Gaus	Commenting	E		
m	Secti	ons. Radius of g	ration Mass-Mor	nent of Inertia	e, Composite	5		
	Kine	matics of Partic	les					
IV	Recti	ilinear motion of	particle, Equation	ons of motion, Motion u	nder gravity,	5		
	Relat	ive Motion, Rel	ation between line	ear and angular motion,	Motion of a	5		
	Proje	tice of Partialas						
	Fricti	ion: Laws of fri	ction, application	of laws of friction we	due friction			
v	Newt	ton's laws of m	otion, D'Alembe	rts principle. Application	ns to rough	4		
	inclir	ned plane, lift, ar	d connected bodi	es, Circular motion, Rota	tion of rigid			
	bodie	s		/	Ū			
-		bear	1		1	1		
ap		Pr	AA					
		-		•				

VI	Work of En Collin	Work Energy and Impact           Work energy Principle, Potential and Kinetic Energy, Law of Conservation of Energy, Impulse Momentum Method         5           Collisions: Impact, Collision of bodies, Coefficient of Restitution, Loss of Kinetic Energy due to Impact         5												
	1		~											
		-				Tex	tbook	5						Same
1	Rama Limit	ted, 200	am., S 08.	"Text	book	of App	lied N	lechani	cs", D	hanpat	Rai Pu	ıblishiı	ng Co	mpany
2	Bhav	ikatti., nationa	S. S I Publi:	and shers, 2	Rajas 015, 5	hekarap <sup>h</sup> Editio	pa., I n.	κ. G.	"Engi	neering	Mech	anics",	, New	Age
3	Beer, Com	F. P. a pany Pr	and Jol ublicati	nston, on, 201	E. R. <sup>4</sup> 1, 9 <sup>th</sup> 1	Vector Edition.	Mech	anics fo	or Engi	neers V	ol. I an	d II", I	McGra	w Hill
						Refe	erence	s					13.5	
1	Singe	er, F. L	. "Engi	neering	Mech	anics St	atics &	b Dynai	nics",	B. S. P	ublicatio	ons, 20	11.	
2	Time 4 <sup>th</sup> Ec	shenko lition.	o, S. an	d Youn	ig, D. I	H. "Eng	ineeri	ng Mec	hanics	", McG	raw Hill	Com	panies,	2008,
3	Meria 6 <sup>th</sup> Ec	am, L. : lition.	and L.C	3. Kraig	ge, "Er	ngineeri	ng Me	chanics	– Dyn	amics"	, John W	/iley &	z Sons,	2002,
	-													
						Usef	ul Lin	KS .						
1	https:	//nptel	.ac.in/c	ourses/	11210	6286								
2	https	//www	.youtu	be.com/	watch'	?v=9Yt	3I4bP-	90						
						CO-PO	Map	ping		1.5		1.0.1	Č.,	12.
				F	rogra	mme O	utcon	es (PO	)		1.1.1		PS	50
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3													
CO2	3	1												
CO3	3	1												
The stren	ath of	nannin	a is to l	e writt	en ac 1	·Low	2. Mar	ium 2.	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)

Nº ca

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)											
			(Oovernment Atde	2023-24	)							
			Course	Information								
Progr	amme		B.Tech. (Electrica	l. Electronics. CSE a	nd IT)							
Class.	Semest	er	F.Y.B.Tech	-,,,								
Cours	e Code		7CM106									
Cours	e Name	•	Civil and Mechan	ical Engineering								
Desire	ed Requ	isites:	1	<u> </u>								
Т	eaching	Scheme		Examination Sche	eme (Mar	·ks)						
Lectu	re	3 Hrs/week	MSE	ISE	ES	Total						
Tutor	ial	-	30	30 20 50								
				Credits	3							
			Course	Objectives								
1	To pro	ovide a solid gi	ounding in the fund	lamental principles a	nd concep	pts of me	chanical					
	engine	ering, includii	ng mechanics, therm	odynamics, material	s science.	, and flui	d mechanics.					
2	To int	roduce student	s to the field of mec	chanical engineering,	its histor	y, scope,	and its					
	1mpor	tance in variou	is industries.	ing anatoma thair ag	magnante	and the	minainlag of					
3	buildi	ng bye-laws n	romoting a compret	nig systems, then co ensive understandin	niponents	and comr	liant					
	constr	uction practice	es.		5 of sure i	und comp	mant					
	Provide students with an in-depth understanding of the significance of infrastructure											
4	develo	opment in urba	n areas, with a spec	ific focus on transpor	rtation, w	ater supp	ly, and waste					
	manag	gement.										
_	Enable	e students to co	omprehend the prop	erties and application	ns of vario	ous const	ruction					
5	materi	als, including	concrete, steel, woo	d, and masonry, enh	ancing the	eir ability	to design					
		laryze structure	es effectively.									
		Course	e Outcomes (CO) v	vith Bloom's Taxon	omv Lev	el						
At the	end of t	he course, the	students will be abl	e to,								
						Bloom	's Taxonomy					
CO		С	ourse Outcome Sta	atement/s		Loval	Decorintion					
	<b>X1</b>	<u> </u>	1	• • • •	1 . 1	Levei	Description					
	ldenti	ty suitable ma	terials for engineer	ing applications, und	derstand							
CO1	engine	ering applica	tions in various i	dustries and be a	ware of	II	Understanding					
	curren	t industry prac	tices and standards.	idustries and be a	ware of							
	Apply	problem-solv	ving techniques to	analyze and solv	e basic							
CO2	engine	ering proble	ems related to	mechanical system	ns and	III	Applying					
	compo	onents										
	Explai	in the various	building systems,	their components,	and the	, T						
CO3	princi	ples of build	ing bye-laws to e	ensure safe and co	mpliant	11	Understanding					
	Summ	uction practice	s ificance of infrastru	ucture development i	n urban							
CO4	areas	and analyze it	ts impact on transr	ortation water sup	olv and	п	Understanding					
	waste	management.	to impact on transp	sortution, water supp	, una		6					
	Analy	ze the proper	ties and application	ons of various cons	truction							
CO5	materi	als, such as	concrete, steel, wo	od, and masonry, t	o make	III	Analysis					
	inforn	ned decisions i	n structural design.									
	1 1-											
Modu	le   M	odule Content	ts [Mechanical]				Hours					

I	Introduction Engineering Materials, Properties of engineering materials (metals, polymers, ceramics) Material selection considerations for computer hardware and robotics applications Material testing and characterization techniques, Overview of manufacturing techniques (casting, machining, molding, etc.) Rapid prototyping methods (3D printing, laser cutting, etc.) for computer hardware prototypes.	6
Ш	Thermodynamics and Heat Management, Basic concepts of thermodynamics and heat transfer Heat dissipation and thermal management in computer hardware, Electronic Packaging and Cooling Packaging considerations for computer components and devices Cooling strategies for high-performance computer hardware	7
ш	Introduction to Robotics, Basics of robotics and its integration with computer engineering, Overview of robotic mechanisms and control system, Gears, pulleys, belts, and other power transmission elements Bearings and lubrication Linkages and mechanical movements relevant to computer engineering	6
Modu	le Module Contents [Civil]	Hours
IV	Introduction to Civil EngineeringScope of civil engineering, Disciplines of civil engineeringRole of Civil Engineers in infrastructure developmentBuilding Systems: Conceptualization, Need for buildings, DefiningSustainability for Building systems, Structural systems; Load bearing,Framed, Prefabricated, Pre Engineered Construction, Loads on Building,Components in Buildings and their functions, building bye laws, Principleof building planning	7
v	<b>Construction Materials</b> Construction materials and classification Properties and uses of stone, brick, tile, timber, cement, sand, lime, mortar, concrete, bitumen and steel.	6
VI	Urban Infrastructure Urban Planning and Infrastructure, Transport systems, Water supply and drainage, Waste management facilities, Concept of smart city	7
1	Materials Science and Engineering: An Introduction" by William D. Callister Jr	r. and David
2	Thermodynamics: An Engineering Approach" by Yunus A. Çengel and Michae	el A. Boles,
	Text Books[Civil]	
1	Bhavikatti S.S "Basic Civil Engineering", I.K. International Publishing House I	Pvt. Ltd.
2	Hirasakar G. K., "Basic Civil Engineering", DhanpatRai publications, 1st Edition	on,2007
3	Gole L.G., "Introduction to Civil Engineering", Mahu Publisher House, 4th Edi	ition, 2005
	References[Mechanical]	
1	Manufacturing Engineering and Technology (SI Edition), Serope Kalpakjian, S	Steven R.
	Schmid, SI edition, 2018, Pearson	
1	<b>References</b> [Civil]	adition 2012
	Bindra S.P., Arora S.P., "Building Construction", Dhanpat Kai publication, 5 <sup>th</sup> Smart Cities Mission Statement & Guidelines Ministry of Urban Development	Government
2	of India	Joverninent
	Tion C., 1 T I	
1	https://ocw.mit.edu/courses/mechanical-engineering/	
2	https://www.coursera.org/browse/engineering/mechanical-engineering	

Course Contents for F. Y. B.Tech. Programme, Department of Computer Science & Engineering, AY 2023-24

3 https://www.edx.org/learn/mechanical-engineering

	CO-PO Mapping															
	Programme Outcomes (PO)													PSO		
	1	1     2     3     4     5     6     7     8     9     10     11     12     1     2														
CO1	2				1					1		1				
CO2			1													
CO3					2					1						
The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High																

#### 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)

	V	Walcha	nd Colle	ge of Engineeri	<b>ng, Sangli</b>							
		(0	ernineni i	<b>XY 2023-24</b>								
			Cou	rse Information								
Programme		B.Tech.	(Computer	Science & Engineer	ring)							
Class, Semes	ster	First Ye	ar B. Tech.	, Sem I	0,							
Course Code	2	7CS101										
Course Nam	e	Comput	er and Netv	working Essentials								
Desired Req	uisites:	-										
Teaching	Scheme											
Lecture	3	ISE	MSE	Total								
	Hrs/week											
Tutorial	-	20	30	50		100						
Practical	-											
Interaction	-		Credits: 3									
		•										
			Cou	ırse Objectives								
1	To perceive	knowledg	ge of the I/O	D Devices, Hardward	e, Software and no	etworking.						
2	To use softw	vare, hard	ware and n	etworking								
3	To understa	nd comme	on hardwar	e troubleshooting teo	chniques.							
		0			<b>T</b> 1							
At the end of	the course the	ourse Out	s will be ab	<b>D) with Bloom's Ta</b>	xonomy Level							
At the end of		ie student	s will be at		Bloom's							
CO			-4	tomontla	Taxonomy	Bloom's						
	L C	ourse Ou	itcome Sta	tement/s	Level	Taxonomy						
	<b>D</b>					Description						
CO1	Perceive kn	owledge o	of the I/O I	Devices, Hardware	т	L'a denstan d'a a						
COI	troubleshoo	vare, N ting techn	etworking,	and common	11	Understanding						
CO2	Use the soft	ware, har	dware and i	networking	III	Applying						
<u> </u>	Analyse dif	ferent har	dware and	software required	IV/							
03	before acqui	iring		-	10	Analysing						
Module		Mod	ule Conter	nts	I	Iours						
	Module 1:	Introduct	ion to Con	nputer Hardware, l	/O Devices and							
	OS Overview et	faomnuta	r hardwara	and its importance i	n CSE Docio							
Ι	components	of a com	r naruware	m Interaction between	en hardware and	6						
	software for	: I/O opera	ations. Role	e of hardware in the	execution of							
	programs, F	undament	als of Oper	ating Systems								
	Module 2:	CPU Arc	hitecture &	& Memory Hierarcl	ny							
	CPU compo	onents and	their funct	ions, Instruction Set	Architecture	_						
11	(ISA), CPU	organizat	ion and ope	eration, Types of me	mory: RAM,	7						
	Memory hie	e, virtual i rarchy in	modern co	emory management	and addressing,							
	Module 3:	Motherbo	pard and F	Expansion Slots & S	torage Devices							
	Anatomy of	a mother	board, Und	erstanding expansion	n slots and							
III	connectors,	Installing	and config	uring hardware com	ponents, Hard	7						
	disk drives (	(HDDs) as	nd Solid-St	ate Drives (SSDs), C	Optical drives and							
	other storag	e media, I	RAID confi	gurations and data r	edundancy							
117	Module 4:	Graphics	Processing	g Unit (GPU) and D	Display Devices	C						
1V	components	US IN MOD	ern comput	ers, Graphics cards a	etc	O						
V	Module 5.	Basics of	Networkin	$\mathcal{S}$ , $\mathcal{S}$	,	6						
•	mount 3.	- abieb UI		6		0						

	Introduction to LAN, WAN, MAN, WiFi. Types of Ethernet cables,	
	Servers, Clients, Ports and Protocols	
	Module 6: Troubleshooting and Diagnostics, Introduction to	
	Computer Security and Antivirus	
VI	Common hardware issues and their solutions, Diagnostic tools and	7
	techniques, Hands-on troubleshooting exercises, Basics of Computer	
	Security, Virus and Antivirus	
	Text Books	
1	Modern Computer Hardware Course by Manahar Lotia, BPB Publicatior	1
2	Computer Networking: A Top-Down Approach, by James F. Kurose, Ke	ith W. Ross
	References	
1	Computer Maintenance Hacks: 15 Simple Practical Hacks to Optimize, S	peed Up and Make
1	Computer Faster by Life 'n' Hack	
2	Computer systems: a programmer's perspective I Randal E. Bryant,	Carnegie Mellon
2	University, David R. O'Hallaron,. Carnegie Mellon. UniversityThird ed	ition.
3		
	Useful Links	
1		

	CO-PO Mapping													
	Programme Outcomes (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2												1	
CO2	3												1	
CO3	1	3											1	
The st	The strength of mapping is to be written as 1,2,3; Where, 1: Low, 2: Medium, 3: High													
Each C	CO of t	he cou	irse mu	ıst map	o to at le	ast one	PO.							

**Assessment (for Theory Course)** 

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)

	Walch	and College of	Engineering,	Sangli								
(Government Aided Autonomous Institute)												
		AY 202	23-24									
Programma		B Tech	ormation									
Class Semest	or	D. Iccil. First Vear B. Tech	Som I & II									
Course Code		70H155										
Course Nome	<u> </u>	Fining Physic	ica Lab									
Course Name	; 	Students are experience	its Lau.	nia practical knowl	adaa un to USC							
Desireu Kequ	hing Scheme	Examination Scheme (Marks)										
I caci		T A 1		L - L ESE	T-4-1							
Lecture	-	LAI	LAZ	Lad ESE	Total							
Tutorial	-	30	30	40	100							
Practical	2 Hrs/week											
Interaction	-		Cred	its: 1								
		Course O	bjectives									
1	To gain practical kno	wledge by applying	the experimental	methods to correlat	e with							
I	the physics theory.											
2	To learn the usage of	electrical and optic	al systems for vari	ous measurements.								
3	To Apply the analytic	cal techniques and g	graphical analysis t	o the experimental	data.							
	Course O	utcomes (CO) with	Bloom's Taxono	my Level								
	Calculate the diameter	er of the thin wire,	Planck's constant,	Refractive index								
	of liquid / radius of	curvature of Plano	convex lens, Sp	ecific rotation of								
CO1	optical active subst	teristics of Semi	conductor diode,	Applying								
Velocity of sound in air, Calculate R.T for specific hall/auditorium, Verify the expression for the resolving power of a talegoone												
Image: the expression for the resolving power of a telescope           Demonstrate Hertley and Calmitt's assillator and simulation. Wavelength of												
CO2 Demonstrate narriey and Colpit s oscillator and simulation, wavelength of light by Plane diffraction grating. Wavelength of light by He Ne I A SER Applying												
List of Experiments / Lab Activities.												
	List of Experiments/ Lab Activities- Any Eight Experiments											
1	Find the diameter of	the thin wire by diff	fraction of the light	t -								
2	Determination of way	velength of light by	plane diffraction g	rating.								
3	Determine the Specif	ic rotation of sugar	solution									
4	Find the wavelength	of He-Ne Laser usin	ng Plane diffraction	n grating.								
5	Verify the expression	for the resolving p	ower of a telescope	е.								
6	Measure the wavelen	gth of ultrasonic wa	aves by Kundt's tu	be method.								
7	Design and simulate	Colpitt's & Hartley	Oscillator.									
8	Determine the Planck	x's constant.										
9	Study the I-V charact	teristic of semicond	uctor diode.									
10	Newton's ring: Deter	mination of wavele	ngth of light and re	efractive index of li	quid /radius of							
	curvature of Plano co	onvex lens										
11	To calculate the reve	rberation time of sp	ecific hall.									
12	Determination of Fer	mi energy of coppe	r using a Wheatsto	ne bridge.								
1		Text B		200								
1	C. L. Arora Practice	al Physics S. Char	a & Co Edition 20	109. 11.1 - 11.1 - 11.1 - 11. 2011								
2	P.K. Sasi Kumar "Pr	Defense	ni Learning Pvt. L	a 1st eattion 2011.								
1	Halliday Dagnia and	Wollton "Eurodama	ences	John Wiley Oth adi	tion 2011							
2	A Beiser "Concent	vianci, runuume	$\frac{1}{2} M_{0} Crow U: 11 In$	ternational 5th adi	tion 2003							
2	A. Deisel, Concepts	" Tata McGraw L	, INICOLAW FILL III	normational, Jul eal	uoli, 2003.							
3	AJUY Ollatak, Oplic		<b>in 5</b> th eutron, 2012	۷.								
1	https://pptel.ac.in/cou	urses/115/105/1151	05121/									
2	https://www.jitg.ac.it	n/cet/nptel html	00141/									
3	https://www.htg.dc.ht	vRROMo84										

Course Contents for F. Y. B.Tech. Programme, Department of Computer Science & Engineering, AY 2023-24

CO-PO Mapping For All B.Tech. Programs															
					Progra	amme	Outco	mes (P	0)					PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1	1	1													
CO2	2														
	The	streng	th of n	apping	g is to b	e writte	en as 1	,2,3; W	here, 1	l:Low,	2:Med	lium, 3	High		
					Asse	ssment	t (for I	Lab. Co	ourse)						
		There	are th	ree cor	nponer	nts of l	ab ass	essmen	it, LA1	l, LA2	and L	ab ESI	Ε.		
IMP: Lab F	IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.														
Assessment	sessment Based on Conducted by Typical Schedule (for 26-week Sem)												Μ	arks	
I A 1		Lab a	ctivitie	s,	Lab C	Course	Du	iring W	'eek 1 t	o Wee	k 6				30
LAI	a	ttendar	nce, jou	rnal	Fac	ulty	Ma	arks Su	bmissi	on at tl	ne end	of Wee	k 6		30
LA2		Lab a	ctivitie	s,	Lab C	Course	e During Week 7 to Week 12							30	
	a	ttendar	nce, jou	rnal	Fac	culty	Ma	arks Su	bmissi	on at th	ne end	of Wee	k 12		
Lab ESE		Lab a	ctivitie	s,	Lab C	Course	Du	iring W	eek 15	to We	ek 18	of Wee	1.10		40
XX7 als 1 in di	a	ttendar	ice, jou	rnal	Fac	ulty					ie end	of wee	K 10		
26 week sen	Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26 week semester. The setuel schedule shall be as per seedemic calender. Leb activities (Leb performance shall														
include perfe	ormii	i. The a	eriment	s mini	-projec	ot nres	en acac	ns drav	wings	nrogra	mming	and of	her sui	itable	Silali
activities, as	per t	the nati	ure and	reauir	ement of	of the l	ab cou	rse. Th	e expei	imenta	l lab sl	hall hav	ze tvni	cally 8-	-10
experiments.				104011					e en per				o oppr	unj o	10
<b>^</b>			As	sessme	nt Plar	1 based	l on B	loom's	Taxor	nomy I	Level				
Bloo	om's	Taxon	omy L	evel		]	LA1		LA	2	La	b ESE		Tota	ıl
	F	Remem	ber				10		10			15		35	
	U	Inderst	and				10		10			10		30	
		Appl	у				10		10			15		35	
		Analy	ze				0		0			0	0 0		
		Evalua	ate				0		0			0		0	
Create									0			0		0	
Total         30         30         40									40		100				

		Walc	chand C	ollege of	Engine	eering, S	angli			
			(Oovernin	AY 2023	8-2024	s msnune)				
			(	Course Inf	ormatio	n				
Program	nme		First Yea	r B. Tech						
Class, S	emester	•	Sem I an	d Sem II						
Course	Code		7HS101							
Course	Name	• .	Commur	nication &	Generic	skills				
Desired	Requis	ites:	10+2 leve	el English						
	1. *			•	<b>- *</b>					
Te	aching S	scheme	τ Α 1	1 4 2	Examina	ation Sche	eme (Marks)	atal		
Tutorio	1			20		E3E	1			
	1		30	30		40		100		
Practica	<u>.</u>	ZHrs/week				<b>a</b> 1%				
Interact	.10n	THr/week				Credits	: 2			
				0	· · · · · · · · · · ·					
1	Enable	the students t		Course Of	ojectives	s and proci-	ion			
1	Dropar	the students	to acquire	structuro	ofOral	and writte	sion. on avpression r	equired for		
2	their p	rofession and	enable the	em to acou	ire prop	er behavid	oural skills	equireu ioi		
	Provide	e relevant kno	wledge at	out generi	ic skills,	its import	ance and enab	le them to		
3	unders	tand personal	attributes	s like comr	nitment	, loyalty, e	ethical values, 1	team building,		
	and ens	sure exposure	to person	al growth.						
4	Infuse	the ability to p	ositively	consider o	ther's vi	ews and to	o work effectiv	ely in teams		
	and tea	ch them self-i	nanagem	ent skills, j	problem	solving sl	kills and techn	ological skills.		
<u> </u>	Commi	Course of the second		(CO) with	BIOOM	s laxonol	ny Level	Apply		
01	Acouire	hasic profici	oncy in Fr	y and composite of the second s	iding rea	ading and	listening	Арріу		
CO2	comprehension, writing and speaking skills.									
	Practice Lifelong Learning (LLL) with positive attitude. lovalty.									
CO3	commi	tment, reliabi	lity, self-d	levelopme	nt and m	hanage hir	nself/herself	Apply		
	physica	ally, intellectu	ally and p	sychologic	cally.					
CO4	Work e	thically and e	ffectively	as a team i	member,	, manage 1	tasks	Apply		
I	effectiv	vely and apply	knowledg	ge to solve	problem	IS.		11.5		
Madada			Mo	dulo Cont	onto			Harris		
wiodule	Made	1. 1. Testers des				□		Hours		
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II	Vocab 1.Moda 2.Ques 3.Misp 4.Pass 5.Phra Vocab 1. Com 2. Pref 3.Syno 4.one- 5.Re-a: 6.redu	ulary. al verbs, non-n ation tags placed Modifie ives sal verbs ulary: nectives, ixes and suffix onyms and Ant word substitu rranging Jumb ndancies	nodal ver rs ces, conyms tions , bled sente	bs ,semi-m	iodal ver	bs	arunceu.	05		

	Module 3 : Formal Communication Skills	
	a. Oral skills: Developing non-verbal skills.	
	1.Extempore /Public Speaking Skills ( speeches)	
	2.Group Presentation 3.Individual Presentations	
III	h. Written Skills:	05
	1.Paragraph Writing	
	2.Comprehension passage	
	3.Inter-office communication – Memorandums ,Circulars	
	4.Report writing	
	a Importance of Generic Skill Development (GSD)	
IV	b. Global and Local Scenario of GSD	01
	c. Lifelong Learning (LLL) and associated importance of GSD.	
	Module 5: Self-management skills	
	1. Knowing Self for Self-Development. (01 hrs)	
	a. Self-concept.	
	b. Attitude,	
	c. Self-esteem.	
	a. Self-confidence.	
	2 Personal Attributes (02 hrs)	
	a. Loyalty.	
<b>.</b>	c. Honesty and integrity.	07
	d. Reliability.	
	e. Enthusiasm.	
	f. Balanced attitude while studying, working and home life.	
	3. Managing Self – Physical (02 hrs)	
	a. Personal grooming.	
	b. Health, Hygiene.	
	4 Managing Self - Psychological (02 hrs)	
	a. Stress. Emotions. Anxiety- concepts and significance.	
	b. Exercises related to stress management.	
	c. Techniques to manage the above.	
	Module 6: Teamwork Skills	
	1. Team Building (01 hrs.)	
	Definition, hierarchy, team dynamics.	
	2. Team related skills. (02 hrs)	
	a. Sympathy, empathy.	
	b. co-operation, concern, lead and negotiate.	
	2. Task pological Shills (02 km )	
	a. Task Initiation. Task Planning. Task execution. Task close out	07
VI	b. Exercises/case studies on task planning towards development of	07
	skills for task management.	
	4. Problem Solving skills. (02 hrs.)	
	a. Prerequisites of problem solving- meaningful learning, ability to apply knowledge in problem solving	
	b. Different approaches for problem solving.	
	c. Steps followed in problem solving.	
	d. Exercises/case studies on problem solving.	

	Text Books
1	Textbook: Sanjay Kumar, Pushpalata, Communication Skills, Oxford University Press, First edition ,2012
	References
1	Ashraf Rizvi, Effective Technical Communication, Tata McGraw Hills publishing
1	Company 2006
2	William Sanborn Pfeiffer, T.V.S. Padmaja, Technical Communication: A Practical
	Approach, Pearson, Sixth Edition 2012
3	Exercises in Spoken English, Parts 1 and II CIEFL, Hyderabad, Oxford University Press
	Useful Links
1	www.oupinheonline.com
2	www.scitechpublications.com

	CO-PO Mapping														
	Programme Outcomes (PO)												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
C01										1					
CO2										1					
CO3									2			2			
CO4								2	3						
The strengt	The strength of mapping is to be written as 1,2,3; Where, 1: Low, 2: Medium, 3: High														
Each CO of	f the co	ourse n	nust ma	ap to a	t least o	one PC	).								

#### Assessment

The assessment is based on two In-semester evaluations (LA) of 30 marks each, one End-semester examination (ESE) of 40 marks.

LA1 and LA2 are based on the modules taught (typically Module 1-3) and ESE is based on all modules with 30-40% weightage on modules before LA1 and 60-70% weightage on modules LA2.

Assess	Assessment Plan based on Bloom's Taxonomy Level											
Bloom's Taxonomy Level	LA1	LA2	ESE	Total								
Remember												
Understand	10	10	10	30								
Apply	20	20	30	60								
Analyse												
Evaluate												
Create												
Total	30	30	40	100								

			(Government Aid	led Autonomous In	stitute)		
			AY	2023-24			
			Course	e Information			1
Progr	amme		B.Tech. (All Bran	nches)			
Class,	Semester	•	First Year B. Tec	h., Sem I/II			
Cours	e Code		7AM155				
Cours	e Name		Engineering Mec	hanics Lab			
Desire	ed Requis	ites:	Engineering Mec	hanics			
	Teaching	Scheme		Examinatio	n Scheme (	Marks)	
Practi	ical	2 Hrs/ Week	LAI	LA2	Lab	ESE	Total
Intera	ction		30	30	40	)	100
				C	redits: 1		
			Cours	se Objectives			
1	To provi	de hands on pra	ctice for the condu-	ct of experiments	to verify th	e principles of	fmechanics
2	To demo	onstrate the grap	hical methods to ve	erify the analytica	I solutions		
	1	Course	e Outcomes (CO)	with Bloom's Ta	xonomy Lo	evel	
At the	end of the	course, the stud	lents will be able to	),			
~~		0	0.4			Bloom's	Bloom's
co		Cour	rse Outcome State	ement/s		I axonomy Level	Descripti
COI	Demons	trate verification	of laws and basi	ic principles of r	nechanics		Descripti
	through	experiments.				111	Applyin
CO2	Apply g	raphical method	to solve problem	s on force syster	n, beams,	ш	Applyin
	and fram	ies.					
		I	list of Experiment	ts / Lab Activitie	s/Topics		
		contrast and		A CONTRACT OF A DECEMBER OF A	•	Concernitor record	
List of	Experim	ents :					
List of	Experim	ents :					
List of 1. Veri	Experim	ents : f law of triangle	of forces				
List of 1. Veri 2. Veri 3. Dete	fication of fication of fication of	ents : f law of triangle f law of polygon of support react	of forces of forces ions for Simply Su	innorted Beam			
List of 1. Veri 2. Veri 3. Dete 4. Veri	fication of fication of fication of ermination fication of	ents : f law of triangle f law of polygon of support react f the principle of	of forces of forces ions for Simply Su moments using Be	pported Beam ell crank lever ap	paratus		
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	Useful Links	
1	https://nptel.ac.in/courses/112106286	
2	https://www.youtube.com/watch?v=9Yt3I4bP-90	
3	https://www.vlab.co.in/broad-area-civil-engineering	
4	Virtual Lab link by IIT Mumbai - http://vlabs.iitb.ac.in/vlab/labsme.html	

						CO-P	O Map	ping						
				1	Progra	mme C	)utcom	es (PO	)				PS	50
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
COI				1										
CO2		1												

Each CO of the course must map to at least one PO, and preferably to only one PO.

		Assessment		
There are three IMP: Lab ESE	e components of la is a separate head	b assessment, LA1, LA2 and of passing.(min 40 %), LA	nd Lab ESE. M+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.

Bearing

		W	alchand Colles	ge of Engineeri	ng, Sangli					
			A	Y 2023-24						
			Сош	rse Information						
Progra	amme		B Tech (Electrical Electronics CSE IT)							
Class	Semest	er	First Year B Tech	SFM-I & II	,					
Cours	e Code		7CM156							
Cours			Civil and Mechani	cal Engineering Lat	<u>,                                     </u>					
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Drooti	eaching col	2 Hrs/Week	T A 1		ESE		Total			
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	Tom	wide e colid on	Cou	irse Objectives	nd concents of m	nachanica	1 anginganing			
1	includ	ing mechanics	thermodynamics n	amental principles and paterials science and	fluid mechanic	nechanica s	l engineering,			
	To int	roduce students	to the field of mecl	hanical engineering.	its history, scor	e. and its	importance in			
2	variou	s industries.				-,	<b>F</b>			
3	To int	roduce students	s to fundamental civ	il engineering exper	iments and proc	edures.				
4	To dev	velop practical	skills in handling ci	vil engineering equi	pment and instru	uments.				
5	To pro	mote teamwor	k, problem-solving,	and analytical skills	while conduction	ng experi	ments and			
	interpi	ceting results.	una Autoomas (CC	) with Plaam's Ta	konomy I ovol					
At the	end of t	he course the	students will be able	to	XUIIUIIIY LEVEL					
		ine estanse, une				Bloom	e Taxonomy			
СО			<b>Course Outcome</b>	Statement/s		Diooin				
						Level	Description			
COL	To ur	iderstand mec	hanical testing and	d inspections, such	as hardness	т	The density of a			
	measu	g, non-destructi	ive testing (e.g., un	trasonic testing), an	d dimensional	11	Understand			
	To dei	nonstrate expe	riments related to th	ermodynamics and l	neat transfer.					
CO2	such a	s measuring he	at conduction throu	gh different material	s or studying	Π	Apply			
	heat d	issipation from	electronic compone	ents.						
CO3	Demo	nstrate identific	cation and reading a	bility of elements in	building	П	Understand			
	drawii	ng.		mant on their malit		111	Anning			
C04	Exam Use su	ine the material	properties and com	tance and area	у.		Applying			
		ii veynig equipi	nent to measure dis			111	Apprying			
			List of Expe	riments / Lab Activ	ities					
Mecha	anical:				11105					
1.	Ultras	onic thickness	measurements and f	law detection.						
2.	Liquic	l and magnetic	particle testing for a	discontinuity examin	ation.					
3.	3. Hardness measurements by using Rockwell, Brinell hardness testers.									
4.	4. Tensile test of metallic materials and study of Stress vs Strain curve.									
5.	Eddy of Use of	f machine learn	ustic emission flaw	measurement technical testing Only	Iques.					
Civil:	0.30 01	i macimic learn	ing and 711 in meen	amear testing. Only	Demonstration.					
1.	Study	and identify ba	sic elements in							
	i) Si	te plan,								
	ii) Pl	an, elevation a	nd section of a resid	ential building						
2.	Study	water supply a	nd sanitation plan o	f a residential buildi	ng					
3.	Field		•							
		tests on brick								
4.	Field	tests on brick tests on Cemer	nt							

Course Contents for F. Y. B.Tech. Programme, Department of Computer Science & Engineering, AY 2023-24

6.	Demonstration of Total station
	Text Books [Mechanical]
1	Raghuwanshi B. S., "A Course in Workshop Technology I", Dhanpat Rai Publications, 10 <sup>th</sup> Ed., 2009
2	S. K. Hajra Choudhury and A. K. HajraChoudhary, "Workshop Technology" – Vol I [Manufacturing Processes]", Media Promoters and Publishers Pvt. Ltd., 10 <sup>th</sup> edition, reprint 2001
3	Bawa H S. "Workshop Practice," McGraw Hill Education, Noida, 2 <sup>nd</sup> edition, 2009 ISBN-13: 978-0070671195
4	Gupta, J. K.; Khurmi, "A Textbook of Manufacturing Process" (Workshop Tech.) R S S Chand and Co., New Delhi, 2020, ISBN:81-219-3092-8
5	Singh Rajender, "Introduction to Basic Manufacturing Process and Workshop Technology", New Age International, New Delhi; 2014, ISBN: 978-81-224-3070-7
	References [Mechanical]
1	W.A.J. Chapman, "Workshop Technology Volume I", CBS Publishing & Distributors, Delhi. [ISBN-13:9788123904016] 2001
2	Rao P.N., "Manufacturing Technology", Vol. I and Vol. II, Tata McGraw Hill House, 2017
3	Gowri P. Hariharan and A. Suresh Babu, "Manufacturing Technology – I" Pearson Education, 2008
	Text Books [Civil]
1	Hiraskar G. K., "Basic Civil Engineering", DhanpatRai publications, 1st Edition,2007
2	Gole L.G., "Introduction to Civil Engineering", Mahu Publisher House, 4th Edition, 2005
3	Bhavikatti S.S., "Basic Civil Engineering", New Age Publications, 2010
	References [Civil]
1	Duggal S. K., "Surveying (Vol-I)", Tata McGraw Hill, 4th edition 2013
2	Bindra S. P., Arora S. P., "Building Construction", DhanpatRai publication, 5th edition, 2012
	Useful Links
1	https://www.vlab.co.in/broad-area-mechanical-engineering

						CO-I	PO Ma	pping							
		Programme Outcomes (PO) PSO													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	3		1							1		1			
CO2	3		1												
CO3						2				1					
The stren	gth of 1	mappir	ng is to	be wr	itten as	\$ 1,2,3;	Where	e, 1: Lo	ow, 2:	Mediu	m, 3: F	ligh			

		Assessn	nent			
There are three	e components of lab as	sessment, LA1, L	A2 and Lab ESE.			
IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation						
Assessment	Based on	Conducted by	Sem)	Marks		
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 6 Marks Submission at the end of Week 6	30		
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 7 to Week 12 Marks Submission at the end of Week 12	30		
Lab ESE	Lab activities, attendance, journal	Lab Course Faculty	During Week 15 to Week 18 Marks Submission at the end of Week 18	40		
Week 1 indica considering a 2 activities/Lab programming a experimental 1	tes starting week of a s 26-week semester. The performance shall inclu and other suitable activ ab shall have typically	semester. The typi actual schedule s ude performing exvities, as per the n 8-10 experiments	cal schedule of lab assessments is show hall be as per academic calendar. Lab speriments, mini-project, presentations, ature and requirement of the lab course.	n, drawings, The		

Wald	Chand College of Engineering, Sangli (Government Aided Autonomous Institute)				
	AY 2022-23				
Course Information					
Programme	B.Tech. (Computer Science Engineering)				
Class, Semester	First Year B. Tech., Sem I				
Course Code	7CS151				
Course Name	Computer and Networking Essentials Lab				
Desired Requisites: Basic Computer Literacy					

Teaching Scher	ne	Examination Scheme (Marks)					
Practical	2 Hrs/Week	LA1	LA2	ESE	Total		
Interaction	-	30	30	40	100		
		Credits: 1					
	· ·						

	Course Objectives
1	To identify and describe the basic components of a computer system.
2	To troubleshoot common hardware issues and perform repairs or replacements
3	To Analyze different hardware and software before acquiring

# 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
C01	To identify and describe the basic components of a computer system (CPU, motherboard, RAM, storage devices, etc.).	Π	Understand
CO2	Troubleshoot common hardware issues and perform repairs or replacements effectively.	III	Apply
CO3	Analyze different hardware and software before acquiring	IV	Analyse
	List of Experiments / Lab Activit	ies	

List of Ex	periments:
1.	<b>To familiarize students with the basic components of a computer system</b> . Procedure:
	<ul> <li>Provide a disassembled computer system (CPU, motherboard, RAM, storage device, etc.).</li> </ul>
	<ul> <li>Ask students to identify and label each component correctly.</li> <li>Discuss the function of each component and its role in the computer</li> </ul>
2	system.
2.	operations.
	<ul> <li>Procedure:</li> <li>Introduce students to a simple I/O operation, such as reading input from the</li> </ul>
	keyboard.
	keyboard controller and CPU.
	• Demonstrate now the software interacts with hardware to perform the I/O operation.
3.	<b>To introduce students to the fundamentals of operating systems</b> . Procedure:
	• Set up multiple computers with different operating systems (Windows, macOS, Linux).
	<ul> <li>Ask students to perform basic tasks on each system, such as file management and software installation</li> </ul>
	<ul> <li>Compare and contrast the features and interfaces of different operating</li> </ul>
4.	systems. To understand the components and functions of a CPU.
	Procedure:
	• Disassemble a CPU to show its internal components, such as ALU, control unit, and registers
	<ul> <li>Explain the function of each component and how they work together to execute</li> </ul>
	instructions.
5	• Demonstrate a simple instruction execution process using a simulator. To explore the performance of different levels of memory hierarchy
	Procedure:
	• Use a benchmarking tool to measure the access time of RAM, cache, and virtual memory
	<ul> <li>Compare the performance results of each memory level and discuss the trade-offs</li> </ul>
6	<ul> <li>Analyze the impact of cache hits and misses on program execution time.</li> <li>To familiarize students with the anatomy of a motherheard</li> </ul>
0.	Procedure:
	• Show a motherboard diagram highlighting various components and connectors.
	<ul> <li>Ask students to identify each component and explain its purpose.</li> <li>Demonstrate the installation of herdware components like PAM and</li> </ul>
	• Demonstrate the instantion of hardware components like RAM and expansion cards.
7.	To explore the components of a graphics card and their functions.
	• Disassemble a graphics card to show its GPU VRAM and other
	components.
	• Explain the role of each component in processing and rendering graphics.
8	• Demonstrate basic GPU-accelerated tasks using graphics software. To compare different display technologies
	Procedure:
	• Set up a computer system with displays using different technologies (CRT,
	• Observe and compare the image quality resolution and power
	consumption of each display type.
0	• Discuss the advantages and disadvantages of each display technology.
9.	Procedure:
	• Provide networking equipment like switches and Ethernet cables.
	<ul> <li>Ask students to connect multiple computers to form a LAN.</li> <li>Verify network connectivity and communication between connected</li> </ul>
	devices.
10	. To understand the role of ports and protocols in networking.
	Procedure:

	• Introduce students to different network protocols (TCP, UDP) and port
	<ul> <li>Use network monitoring tools to analyze network traffic and identify the protocols used</li> </ul>
	<ul> <li>Demonstrate the establishment of a connection between a client and server using specific protocols</li> </ul>
1	To teach students common hardware troubleshooting techniques
1	Procedure
	<ul> <li>Intentionally create hardware issues like loose connections or faulty components in a computer</li> </ul>
	<ul> <li>Ask students to diagnose and resolve these issues using appropriate troubleshooting tools.</li> </ul>
	• Discuss the troubleshooting process and best practices.
12	2. To understand the importance of computer security and antivirus. Procedure:
	<ul> <li>Set up a computer with various types of malware (simulated or isolated) on it.</li> </ul>
	<ul> <li>Install an antivirus program and demonstrate malware scanning and removal.</li> </ul>
	• Discuss the importance of keeping antivirus software up to date and practicing safe computing habits
1	3. Case study of Data Center.
	Procedure:
	• Selecting any data center for study
	• Study the components of data center
	• If possible visit to the data center
	Tayt Books
	Lemes K I. "The computer hardware installation interfacing troublesheeting and
1	maintenance" PHI Learning, New Delhi, 2014, ISBN: 978-81-203-4798-4.
2	Gupta, Vikas "Comdex: Hardware and Networking Course Kit" Dreamtech Press, New Delhi, ISBN: 978-93-5119-265-7.
3	Criage Zacker and John Rourke "PC Hardware Complete reference Tata McGraw- Hill.
	Deferences
	Minagi Mark "The Complete DC Ungrade And maintenance Guide" DDD
1	Publication, New Delhi ISBN:978-81-265-0627-9 4.
2	Kadam, Sachin "Computer Architecture and Maintenance"Shroff Publication, Mumbai Vol.1 ISBN: 978-9350230244
	Useful Links
	https://www.javatpoint.com/hardware
1	
$\frac{1}{2}$	https://edu.gcfglobal.org/en/computerbasics/keeping_your_computer_clean/1/#

CO-PO Mapping														
		Programme Outcomes (PO) PSO									<b>50</b>			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	CO1         2         1													
CO2	3												2	
CO3	<b>CO3</b> 2 3 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.														

	Asses sment								
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%									
Assessmen t	Based on	Conducted by	Typical Schedule	Mark s					
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 8 Marks Submission at the end ofWeek 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					
LabLab Course FacultyDuring Week 18 to Week 19Lab ESEactivities, journal/andExternalMarks Submission at the end40performanceapplicableWeek 19									
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 andrelated activities if any.

Course Contents for F. Y. B.Tech. Programme, Department of Computer Science & Engineering, AY 2023-24

		W	alchand Colleg	ge of Engineering,	Sangli					
(Government Aided Autonomous Institute) AY 2023-24										
Course Information										
Progra	Programme     B.Tech. All Branches									
Class.	Semest	er	First Year B. Tech	n. SEM-I & II						
Cours	e Code		7VS151							
Cours	e Name		Engineering Skills	s-I						
Desire	d Requ	isites:								
	-		<u> </u>							
Т	eaching	Scheme		Examination Schen	ne (Marks)					
Lectur	re	-	LA1	LA2	ESE	Total				
Tutori	al	-	30	30	40	100				
Practi	cal	2Hrs/Week		-	I					
Intera	ction	-		Credits:	l					
			1							
			Cou	rse Objectives						
1	To tra	in the students	to use different tool	s and equipment involve	l in the manufac	cturing processes				
2	To dev	velop the skills	to handle the basic	cutting tools and devices	required for va	arious				
	manuf	acturing proce	sses, interpret the gi	iven job drawing, select r	elevant fitting to	ools				
3	To pre	epare the stude	nts to carry out the	various operations to mak	e a finished prod	duct				
At the	Course Outcomes (CO) with Bloom's Taxonomy Level									
		ne course, me	students will be dott		DL	• T				
СО	Course Outcome Statement/s Bloom's Taxonomy									
	Level Description									
CO1	CO1Describe the basic methods, operations and processes ofIUnderstand									
	manuf Illustr	acturing	machanical systems	machines equipment th	a II	Apply				
CO2	basic	working of cut	ting tools for manuf	acturing.		Арргу				
CO3	Use of	f Fitting tools,	job holding devices	, measuring tools	III	Apply				
CO4	Check	verticality and	l level difference.	•	III	Apply				
<b>CO5</b>	Estima	ate the materia	l requirement in con	structed structure.	III	Apply				
<b>CO6</b>	Sketch	n building plan			III	Apply				
				• / /						
<b>.</b>			List of Exper	riments / Lab Activities						
List of	Mecha	nical Enginee	ring Skills:							
1.	Introdu Perfor	uction to <b>wood</b> m Planning op ( <b>4 Hrs</b> )	working, the hand beration, cutting by	tools required and machi chisel to prepare small r	nes: nobile phone st	and [Square joint				
<ol> <li>Introduction to fitting shop tools, equipment/machines: Job consisting of male and female parts viz.one with groove, another with matching projection, holes on both and their assembly, as per given job drawing. operations to be performed: Marking, Punching, Saw cutting, Drilling, Edge filing operations (4 Hrs.)</li> <li>Introduction to sheet metal work: Job of small sheet metal tray as per given job drawing with</li> </ol>										
following operations: Marking, Cutting, bending/folding (4 Hrs.) List of Civil Engineering Skills:										
1. 2. 3.	<ol> <li>List of Civil Engineering Skills:         <ol> <li>Establishing verticality, right angle corner, and level difference in masonry construction (2 Hrs)</li> <li>Line out of building plan on site (2 Hrs)</li> <li>Estimate the quantities/ material requirement for (4Hrs)</li></ol></li></ol>									

	Text Books [Mechanical]
1	Raghuwanshi B. S., "A Course in Workshop Technology I", Dhanpat Rai Publications,10 <sup>th</sup> Ed., 2009
2	S. K. Hajra Choudhury and A. K. HajraChoudhary, "Workshop Technology" – Vol-I [Manufacturing Processes]" Media Promoters and Publishers Pyt. Ltd. 10 <sup>th</sup> edition reprint 2001
	Bawa H S "Workshop Practice" McGraw Hill Education Noida 2 <sup>nd</sup> edition 2009
3	ISBN-13: 978-0070671195
4	Gupta, J. K., Khurmi, "A Textbook of Manufacturing Process" (Workshop Tech.) R S S Chand and Co., New Delhi,2020, ISBN:81-219-3092-8
5	Singh Rajender, "Introduction to Basic Manufacturing Process and Workshop Technology", New Age International, New Delhi; 2014, ISBN: 978-81-224-3070-7
	References [Mechanical]
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2	Rao P. N., "Manufacturing Technology", Vol. I and Vol. II, Tata McGraw Hill House, 2017
3	Gowri P. Hariharan and A. Suresh Babu, "Manufacturing Technology – I" Pearson Education, 2008
	Text Books [Civil]
1.	Gole L. G., "Introduction to Civil Engineering", Mahu Publisher House, 4th Edition, 2005
2.	Bhavikatti S. S., "Basic Civil Engineering", New Age Publications, 2010
	References [Civil]
1	Bindra S. P., Arora S. P., "Building Construction", Dhanpat Rai publication, 5th edition, 2012
	L'soful Links
1	https://www.ylab.co.in/broad-area-mechanical-engineering
2	https://drive.google.com/file/d/1tn5vV2ghp_Slub58S7iKnvvIvoEwOVYg/view
3	https://www.youtube.com/@workshop.supdtimdabir5653
4	https://www.youtube.com/watch?v=gPaBLII_gRRuM
5	https://www.youtube.com/watch?v=_f7tTNRH_04
6	https://www.youtube.com/watch?v=IJD3q5R0N8U4
7	https://www.youtube.com/watch?v=uapzeNwKo4U
8	https://www.voutube.com/watch?v=ibRgIbIGAwc
9	https://www.voutube.com/watch?v=TeErxz59Sss
10	https://www.voutube.com/watch?v=F4SwbJ1euB8
11	https://www.voutube.com/watch?v=cuv-tP6JHEI
12	https://www.voutube.com/watch?v=vUIY_BiLvFI
13	https://www.youtube.com/watch?v=xMOOR6Jg3o4
14	https://www.youtube.com/watch?v=OdrBpPNJMaI
15	https://www.youtube.com/watch?v=uAIXHqOm0AM
16	https://www.youtube.com/watch?v=DzCBASUKpF4
17	https://www.youtube.com/watch?v=TQ_NeHenT9Y
18	https://www.youtube.com/watch?v=rkp2Uvpop-g
19	https://www.youtube.com/watch?v=iDJ_sMvXsYs
20	https://www.youtube.com/watch?v=xZgtyNdGHvs
	· ·

	CO-PO Mapping														
		Programme Outcomes (PO) Mechanical PSO													
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO1				1											
CO2				1											
CO3 1 1 1															
The stren	The strength of mapping is to be written as 1,2,3; Where, 1: Low, 2: Medium, 3: High														

Assessment There are three components of lab assessment, LA1, LA2 and Lab ESE. IMP: Lab ESE is a separate head of passing. LA1, LA2 together is treated as In-Semester Evaluation.

Assessment	Based on	Conducted by	Typical Schedule (for 26-week	Marks				
			Sem)					
LA1	Lab activities, attendance, journal	Lab Course Faculty	During Week 1 to Week 6 Marks Submission at the end of Week 6	30				
LA2	Lab activities, attendance, journal	Lab Course Faculty	During Week 7 to Week 12 Marks Submission at the end of Week 12	30				
Lab ESE	Lab activities, attendance, journalLab Course FacultyDuring Week 15 to Week 18 Marks Submission at the end of Week 1840							
Week 1 indicates starting week of a semester. The typical schedule of lab assessments is shown, considering a 26-week semester. The actual schedule shall be as per academic calendar. 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.								

# Walchand College of Engineering

(Government Aided Autonomous Institute)

# Credit System for F.Y. B.Tech. (Computer Science and Engineering) Sem-II AY 2023-24

Sr.No.	Category	Course Code	Course Name	L	T	P	1	Hrs	Cr	MSE/LA1	ISE/LA2	ESE
			Professional Core (Th	eory)						24		5 S
01	BS	7MA104	Engineering Mathematics - II	3	1	0	0	4	4	30	20	50
02	BS	7CH103	Engineering Chemistry	3	0	0	0	3	3	30	20	50
03	E\$	7EE106	Electrical & Electronics Engineering	3	0	0	0	3	3	30	20	50
04	PC	7CS102	Basics of Web Technology	3	0	0	0	3	3	30	20	50
	Professional Core (Lab)											
05	BS	7CH155	Engineering Chemistry Lab	0	0	2	0	2	1	30	30	40
06	ES	7EE156	Electrical & Electronics Engineering Lab	0	0	2	0	2	1	30	30	40
07	ES	7C\$108	Computer Programming	0	0	2	2	4	3	30	30	40
08	ES	7ME108	Engineering Graphics	0	0	2	1	3	2	30	30	40
09	PC	7CS152	Basics of Web Technology Lab	0	0	2	0	2	1	30	30	40
10	VS	7VS152	Engineering Skills - II	0	0	2	0	2	1	30	30	40
			Total	12	1	12	3	28	22			

#### Notes:

- For Theory courses: There shall be MSE, ISE and ESE. Theory-ESE is a separate head of passing.
- For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). Lab-ESE is a separate head of passing.
- For Lab Courses, (LA1+LA2) should be >= 40% to appear for Lab ESE.
- For further details, refer to Academic and Examination rules and regulations.

Dr. N. L. Gavankar DAC/Secretary, BoS

Dr. Mrs. M. A. Shah Head, Computer Science and Engg. Dept./ Chairman, BoS



Dr. Mrs. S. P. Sonavane Dean Academics

Dean Academics Welchand College of Engg. Vishrambeg, Sangli - 416 415



	Walchand College of Engineering, Sangli							
	(Government Aided Autonomous Institute) AY 2023-24							
				2025-24				
D				Information				
Progra	amme		B. Iech. (CSE/I. I	.) 1 G H				
Class,	ass, Semester First Year B. Tech., Sem II							
Cours	ourse Code 7MA104							
Cours	e Nam		Engineering Math	nematics- II(CS/IT)				
Desire	d Requ	isites:	Mathematics cour	rse at Higher Secon	dary Junior Colleg	e		
	Teachi	ng Scheme		Examination So	cheme (Marks)			
Lectur	re	ESE	Total					
Tutori	ial	1 Hrs/week	30	20	50	100		
				Credi	ts: 04			
			Course	Objectives				
1	Famil	arize the students	with techniques in	multivariate integra	tion and Differentia	al equation.		
2	2 Awareness about Mathematics fundamental necessary to solve and analyse the Engineering							
2	problem							
3								
		Course	Outcomes (CO) w	ith Bloom's Taxon	omy Level			
At the	end of	the course, the stud	ents will be able to					
CO1	Under	stand the Mathen	natical tools that	are needed to so	olve optimization	Understanding		
	proble	em.			I	Childerstanding		
CO2	Apply	computational too	ls to solve mathem	atical problems.		Applying		
CO3	Solve	the problems in m	ultivariable calculu	s,		Applying		
<b>CO4</b>								
CO5								
Modu	le		Module C	ontents		Hours		
т	Be	ta-Gamma Funct	ions:			6		
1	<sup>1</sup> Definition of Beta, Gamma functions and properties of Beta Gamma functions							
II	Cu Tr		5					
III	Itracing of curves for Cartesian and polar coordinate         Multivariable Calculus:         Multiple Integrals: Double integrals, change of order of integration, change o         III       variables (Cartesian to polar) Evaluation of triple integrals, Application o         Multiple integrals such as Area enclosed by plane curves, Mass of lamina         Volume of solid							

	Linea	r Diffe	rential	equati	ions of	'nth or	der wit	th cons	stant co	oefficie	nt:		7	
IV	Linear Differential equation with constant coefficient, Complementary													
	function, Particular Integral, Homogeneous Linear Differential equation Transportation Problem:													
	Transportation Problem:													
<b>X</b> 7	North West Corner method, The row minima method, Matrix minima method,													
V	Vogel's approximation method.								7					
	Assign	ment H	Probler	n:								-	6	
VI	Hunga	rian Me	ethod, U	Jnbala	nced as	ssignme	ent prob	olem, m	naximis	ation p	roblem			
<b>V1</b>	C					U U	•			•				
						Toyt	hooka							
	PNa	nd I N	J Wart	ikar '	·Δ Τey	rt Bool	c of An	nlied N	Aathem	atics"	Vol La	and II"	Vidy	arthi
1	Griha I	Prakash	an, Pur	ne, 200	6	11 D001	t of <i>n</i> p	price i	viancii	anos,	V0110		viuy	
2	B .S. G	rewal,	"High	er Engi	ineerin	g Math	ematics	s", Kha	anna Pu	blicatio	on, 44t	h Editio	on , 201	17.
3	S.C. C	Gupta,	"Fund	amenta	ls of	Mathe	matical	Stati	stics a	nd pro	babilit	y", Su	ltan c	hand
5	&Sons	,2014.	(0)	·	1.	ULED		TILDA			1	1 oth T	1	2017
4	S.D. Sł	narma "	Operat	ion Re	search	<sup>7</sup> KED	AK NA	IH RA	M NA	TH Pub	lication	n,18 <sup>th</sup> E	dition,	2017
						Refe	rences							
1	Erwin Kreyszig, "Advanced Engineering Mathematics", Wiley Eastern Limited Publication,													
	2015, 1	$\frac{0^{\text{m}} \text{Ed}_1}{0^{\text{m}} \text{Ed}_1}$	tion	od Euro		· ~ ) / ~ 4	<b>.</b>	~" Tot	· M.C		1 D <b>l</b> . 1	antion	041. 17.1	tion
2	1999	U.K, 7	4 <i>avanc</i>	ea Eng	ineerii	ig Mati	iematic	s, lat	a McG	raw Hil	I Public	cation,	8th Eai	tion,
-	H. K. I	Dass , "	Higher	· Engin	eering	Mathe	matics'	'. S. Ch	and &	Compa	ny Ltd.	. 1 <sup>st</sup> Ec	lition 2	014.
3		,	0	0	0			,		1	5	,		
4	S. S. S	astry,	"Engin	eering	Mathe	ematics	(Volur	ne-I)",	Prenti	ce Hall	Public	cation,	3rd Ed	ition
	2006													
1	1 //		. 1	/	4 1 0	Usefu	l Links	T						
1	https://	www.y		$\frac{.com/w}{1}$	/atch / V	/=Kgitz	LSSt2SU	J						
3	nups.//	npter.a		11505/1	111031	<u></u>								
4														
<u> </u>	T CO-PO Manning													
Programme Outcomes (PO) PSO														
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C01	2			1										
CO2	2			1										
CO3	2			1										
<b>CO4</b>														
The strength of mapping is to be written as 1: Low, 2: Medium, 3: High														
Each CO o	f the cou	irse mu	ist man	to at le	east on	e PO.		, = . =	0 -					
			P											

Assessment	Assess	ment
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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)

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)							
			AY	2023-24				
			Course	Information				
Progra	amme		B. Tech. (Mechar	nical, Civil, CSE,IT)				
Class,	Semester		First Year B. Tec	h. Sem. I/II				
Cours	e Code		7EE106					
Cours	e Name		Electrical & Elect	tronics Engineering				
Desire	d Requisi	tes:	12 <sup>th</sup> Physics					
	Teaching	Scheme		Examination Schem	e (Marks)			
Lectur	e e	3 Hrs/week	MSE	ISE	ESE	Total		
Tutori	al	-	30	20	50	100		
				Credits: 3				
		1	<u> </u>					
			Course	Objectives				
1	This cour	rse intends to su	mmarize and solve	electrical and magnetic of	vircuits.			
2	It imparts	s skill to identify	ving principles, con	struction and working of	electrical mach	nines.		
3	To expla	in the difference	e between analog a	nd digital electronic circu	its.			
4	4 To <b>explain</b> the working of diode circuits, transistorized and op-amp based amplifiers.							
Course Outcomes (CO) with Bloom's Taxonomy Level								
At the	At the end of the course, the students will be able to,							
СО	CO Course Outcome Statement/s Bloom's Bloom's Taxonomy Level Description					Bloom's Taxonomy Description		
CO1	Explain machines	principles, co	onstruction and	working of electrical	II	Understanding		
CO2	Solve ele	ectrical and mag	netic circuits.		III	Applying		
CO3	Explain	the fundamental	s of digital electror	nics.	Ι	Understanding		
CO4	Solve the Op-amp	e examples on based circuits.	digital circuits, die	odes and transistors and	III	Applying		
						1		
Modu	le		Module (	Contents		Hours		
Ι	Modu Revie conve Maxi	when a construction of R-L-C-1 ersion, voltage a mum powers tra	d <b>its</b> Electrical circuit e nd current sources nsfer Theorems	elements, KCL and KV. . Thevenin, Norton and	L. Star- delta Superposition,	6		
П	Module 2: AC CircuitsRepresentation of sinusoidal waveforms, peak, RMS values, phasorIIrepresentation real, reactive and apparent power. Analysis of single-phase, accircuits consisting of R, L, C, RL, RC, RLC (series and parallel) circuits andthree-phase balanced circuits. Voltage and current relations in star and delta.							
III	Image: Consisting of R, E, C, REC, REC (series and paramer) circuits and three-phase balanced circuits. Voltage and current relations in star and delta.         Module 3: Electrical Machines         Construction, working principle and types of DC generator and Motor. Speed-Torque characteristics.         II       Construction and working principle of single and three- phase induction motor.         Types, torque- speed characteristics         Magnetic circuits, Construction, working principle of single-phase transformer, and times							

	Module 4: Fundamentals of Digital Electronics								
	Boolean algebra, SOP and POS terms, K-map reduction technique, converting	_							
IV	AOI to NAND/NOR logic. Combinational Circuits: half adder and subtractor,	6							
	1-bit full adder and subtractor, 1-bit and 2-bit comparator, Sequential Circuits:								
	flip-flop, counters.								
	Module 5: Diodes and Transistors								
	P-N junction diode, diode characteristics, half-wave and full-wave rectifier,								
V	clippers and clampers; Zener diode, LED, Photodiode and Solar Cell.								
	Introduction to sensors: Light and Temperature Sensors.								
	Transistor structure, types (BJT, FET and MOSFET), biasing methods,								
	transistor as a switch.								
	Module 6: Operational Amplifier								
VI	Basic op-amp configuration, op-amp powering, feedback in op-amp circuits,	6							
	ideal op-amp circuits analysis, inverting, non-inverting amplifier, summing								
	amplifier, difference amplifier, unity gain buffer; IC555 timer.								
	Tradha da								
1	I extbooks	E11 2012							
	D.C. Kuisnresnina, Basic Electrical Engineering, 1 <sup>st</sup> revised edition McGraw F	<u>1111, 2012.</u> 2010							
2	D.P Kothari and I.J Nagrath, "Basic Electrical Engineering", 1 ata McGraw Hill	, 2010.							
3	B.L Theraja A Textbook of Electrical Technology, S Chand Publication, 2015	•							
4	R. F. Jaili, Wouchi Digital Electronics, 4th cultion, 1ata WCOraw Hill, 2009.           Depart Reviewed, Louis Necholsky, 11, edition, "Electronic Devices and Circuits, Decrease"								
3	2015.								
6	Ramakant Gaikwad, "Op-amp and Linear Integrated Circuits", 4th edition, Pearson	on, 2015.							
1	<b>References</b>								
1	V. D. Toro, "Electrical Engineering Fundamentals", Prentice Hall India, 1989.								
2	E. Hughes, "Electrical and Electronics Technology", Pearson, 2010.								
3	V. N. Mittle and Arvind Mittal, "Basic Electrical Engineering", 2 <sup>nd</sup> edition, Tata	McGraw Hill.							
4	Morris Mano, "Digital Design", Pearson, 4th edition, 2011								
5	Donald A. Neamen, "Electronic Circuit Analysis and Design", 3rd edition, Tat 2011	a McGraw Hill,							
6	Robert F. Coughlin and Frederick F. Driscoll, "Operational Amplifiers and L Circuits", 6th edition, PHI, 2009	inear Integrated							
	Useful Links								
1	Basic Electrical Technology, IISc Bangalore, by Prof.	L. Umanand,							
	"https://nptel.ac.in/courses/108108076"								
2	Basic Electrical Technology, IIT Kharagpur, by Prof. N.K. De, Prof. G.D.	Roy, Prof. T.K.							
2	Bhattacharya, "https://nptel.ac.in/courses/108105053"	•							
2	Fundamentals of Electrical Engineering, IIT Kharagpur, by Prof. Del	bapriya Das ,							
5	"https://nptel.ac.in/courses/108105112"								
4	https://nptel.ac.in/courses/108101091								
5	https://nptel.ac.in/courses/108105113								
-									

	CO-PO Mapping													
		Programme Outcomes (PO)									PSO			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3													
CO2		3												
CO3	2	2												
CO4	2	2												
The streng	The strength of mapping is to be written as 1: Low, 2: Medium, 3: High													
Each CO	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 Three modules. (One and half modules from Electrical syllabus and one and half modules from Electronics syllabus)

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 up to MSE and 60% weightage on modules after MSE.

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)

	Wal	Ichand College	of Engineering	g, Sangli					
<b>AV 2023-24</b>									
Course Information									
Programme		B Tech (Computer	: Science & Engine	ering)					
Class Some	stor	Eirst Vear B. Tech	Sem II	cring)					
Course Code	51CI	7CS102	, Sem n						
Course Nom		Reside of Web Tec	hnology						
Desired Reg	uisitas:	Dasies of web ree	mology						
Desired Keq	uisites.								
Teachi	ng Scheme		Examination Sc	heme (Marks)					
Lecture	3 Hrs/week	ISE	MSE	ESE	Total				
Tutorial	-	20	30	50	100				
Practical	_	20	20	00	100				
Interaction	_		Credi	ts: 3					
		Course	Objectives						
1	To make studen	ts understand techno	logies involved in a	a web application.					
2	To enable stude	nts to develop simple	e web form using b	asic web technologies	and host it.				
3	To enable stude	nts to develop a resp	onsive web applica	tion.					
	To make studen	ts understand securit	v issues involved in	n web applications and	how to				
4	handle them.	handle them.							
	Cours	e Outcomes (CO) w	vith Bloom's Taxo	nomy Level					
At the end of	the course, the st	udents will be able t	0,	•					
со	Course Outcome Statement/s Bloom's Taxonomy								
					Description				
CO1	Distinguish bet explain web sec	ween static and re urity issues.	sponsive layout, H	ITML, HTML5 and	DescriptionUnderstand				
CO1 CO2	Distinguish bet explain web sec Implement web with suitable Ul	ween static and re urity issues. forms, web pages us for a target device.	sponsive layout, H	HTML, HTML5 and back end technologies	Description       Understand       Apply				
CO1 CO2 CO3	Distinguish bet explain web sec Implement web with suitable UI Observe effect of	ween static and re urity issues. forms, web pages us for a target device. of changing CSS styl	sponsive layout, I sing front end and t es and dynamic sty	HTML, HTML5 and back end technologies ling using JavaScript	Description       Understand       Apply       Analyse				
CO1 CO2 CO3	Distinguish bet explain web sec Implement web with suitable UI Observe effect o	ween static and re purity issues. forms, web pages us for a target device. of changing CSS styl	sponsive layout, I sing front end and t es and dynamic sty	HTML, HTML5 and back end technologies ling using JavaScript	Description       Understand       Apply       Analyse				
CO1 CO2 CO3 Module	Distinguish bet explain web sec Implement web with suitable UI Observe effect o	ween static and re urity issues. forms, web pages us for a target device. of changing CSS styl Modul	sponsive layout, H sing front end and t es and dynamic sty e Contents	HTML, HTML5 and back end technologies ling using JavaScript	Description       Understand       Apply       Analyse				
CO1 CO2 CO3 Module	Distinguish bet explain web sec Implement web with suitable UI Observe effect of Module 1: Intr Overview of th technology and servers, Introdu	ween static and re- urity issues. forms, web pages us for a target device. of changing CSS styl Modul oduction to World ne Internet and the its impact on society ction to Web Develo	sponsive layout, H sing front end and t es and dynamic sty e Contents Wide Web World Wide Wel 7, Understanding w per Tools	ATML, HTML5 and back end technologies ling using JavaScript b, Evolution of web eb browsers and web	Description       Understand       Apply       Analyse       Hours       6				
CO1 CO2 CO3 Module I	Distinguish bet explain web sec Implement web with suitable UI Observe effect of Module 1: Intr Overview of th technology and servers, Introdu Module 2: HTT Introduction to HTML page wi and anchor tags	ween static and re- urity issues. forms, web pages us for a target device. of changing CSS styl Modul oduction to World ne Internet and the its impact on society ction to Web Develo ML Basics and HTM HyperText Markup th headings, paragra , Advances in HTMI	sponsive layout, H sing front end and b es and dynamic sty e Contents Wide Web World Wide Wel y, Understanding w per Tools <i>ALS</i> Language (HTMI phs, and lists, Wor 25	ATML, HTML5 and back end technologies ling using JavaScript b, Evolution of web eb browsers and web c), Creating a simple tking with hyperlinks	Hardinary       Description       Understand       Apply       Analyse       Hours       6       6				
CO1 CO2 CO3 Module I II III	Distinguish bet explain web sec Implement web with suitable UI Observe effect of <b>Module 1: Intr</b> Overview of th technology and servers, Introdu <b>Module 2: HT</b> Introduction to HTML page wi and anchor tags <b>Module 3: CSS</b> Introduction to colors, backgrou floats	ween static and re urity issues. forms, web pages us for a target device. of changing CSS style Modul oduction to World ne Internet and the its impact on society ction to Web Develo ML Basics and HTMI HyperText Markup th headings, paragra , Advances in HTMI Basics Cascading Style She unds, and borders, Cr	sponsive layout, H sing front end and b es and dynamic sty e Contents Wide Web World Wide Wel V, Understanding w per Tools ALS Language (HTMI phs, and lists, Wor 25 ets (CSS), Styling H eating layouts using	ATML, HTML5 and back end technologies ling using JavaScript b, Evolution of web eb browsers and web c), Creating a simple tking with hyperlinks ATML elements: text, g CSS positioning and	Harmonian       Description       Understand       Apply       Analyse       Hours       6       6       7				
CO1 CO2 CO3 Module I II III	Distinguish bet explain web sec Implement web with suitable UI Observe effect of <b>Module 1: Intr</b> Overview of th technology and servers, Introdu <b>Module 2: HT</b> Introduction to HTML page wi and anchor tags <b>Module 3: CSS</b> Introduction to colors, backgrou floats <b>Module 4: Intr</b> ( <b>DOM</b> ) Basics of JavaSo operators, JavaSo DOM and its sig Handling events	ween static and re urity issues. forms, web pages us for a target device. of changing CSS style Modul oduction to World ne Internet and the its impact on society ction to Web Develo ML Basics and HTMI HyperText Markup th headings, paragra , Advances in HTMI Basics Cascading Style She unds, and borders, Cr oduction to JavaScr cript programming la Script functions and co gnificance, Manipula and user interaction	sponsive layout, H sing front end and t es and dynamic sty e Contents Wide Web World Wide Web World Wide Web , Understanding w per Tools <i>ALS</i> Language (HTMI phs, and lists, Wor 25 ets (CSS), Styling H eating layouts using ript and Documen anguage, Variables, control structures, U ting HTML elemer s	ATML, HTML5 and back end technologies ling using JavaScript b, Evolution of web eb browsers and web c), Creating a simple thing with hyperlinks ATML elements: text, gCSS positioning and t <b>Object Model</b> data types, and Inderstanding the hts using JavaScript,	Description       Understand       Apply       Analyse       Hours       6       7       8				

	Design principles for mobile-friendly websites, Using media queries for						
	responsive layouts, Working with Flexbox and Grid for flexible designs						
	Backend Technologies:						
	Overview of server-side scripting languages (e.g., PHP or Node.js),						
	Introduction to databases and data storage, Building a simple server-side application						
	Module 6: Web Forms and Data Validation, Web Hosting and Web						
	Security						
	Forms and Validation: Creating HTML forms for user input, Form						
	handling using JavaScript and server-side scripting						
VI	Web Hosting: Understanding web hosting and domain registration,						
V I	Configuring and deploying a basic website on a hosting server. Introduction	6					
	to Content Management Systems (CMS)						
	Web Security: Common web security threats and vulnerabilities. Best						
	practices for securing web applications, Implementing user authentication and						
	authorization						
	Text Books						
1	Web Technology: Theory and Practice by M. Srinivasan, Released June 2012	, Publisher(s):					
1	Pearson India, ISBN: 9788131774199						
	References						
1	Web Application Security by Andrew Hoffman, Released March 2020,	Publisher(s):					
1	O'Reilly Media, Inc. ISBN: 9781492053118						
2	Web Technologies by Achyut Godbole and Atul Kahate, Publication: Tata	McGraw-Hill					
	Education Pvt. Ltd., ISBN13: 9781259062681						
	Useful Links						
1	https://www.w3schools.com/						

	CO-PO Mapping													
	Programme Outcomes (PO)									PSO				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1								3	2			1	
CO2	3	1	2						3	2				1
CO3		1												1
The st	The strength of mapping is to be written as 1,2,3; Where, 1: Low, 2: Medium, 3: High													
Each C	CO of t	he cou	rse m	ıst map	o to at le	ast one	PO.							

#### **Assessment (for Theory Course)**

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)

#### Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

#### AY 2023-24

Course Information						
Programme	B.Tech.					
Class, Semester	First Year B. Tech. Sem I/II					
Course Code	7CH155					
Course Name	Engineering Chemistry Lab					
<b>Desired Requisites:</b>	Chemistry course at secondary and higher secondary level					

Teaching S	Scheme	Examination Scheme (Marks)					
Practical	2Hrs/ Week	LA1	LA2	Lab ESE	Total		
Interaction	0Hrs/ Week	30	30	40	100		
				Credits: 1			

#### **Course Objectives**

To make the student familiar with analytical techniques.

# To provide hands on practice of Instrumental and titrimetric analysis.

Course Outcomes (CO) with Bloom's Taxonomy Level

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

1

2

со	Course Outcome Statement/s	Bloom's Taxonomy Level	Bloom's Taxonomy Description
CO1	Apply principles of Volumetry/gravimetry to quantitative analysis for water quality parameter, metal and alloys.	ш	Applying
CO2	Demonstrate use of instrument for quantitative analysis.	III	Applying
CO3	Experiment physical/Chemical characteristics of material. Execute preparation of product.	III	Applying

#### List of Experiments (Minimum 8 experiments from the following list)

Sr. No	List of Experiments	Hours				
1	Estimation of hardness of water by EDTA method					
	(Complexometric Litration).					
2	Estimation of alkalinity of water (Neutralization Titration).					
3	Estimation of Dissolved Oxygen in water (Iodometric Titration).					
4	Estimation of Chloride content in water (Argentometry).2 Hrs. eachDemonstration of pH meter & pH metric titration.Expt.Determination of strength of acid/base by conductometrically.Expt.Colorimetric estimation of Copper.Estimation of copper from Bronze. (Iodometric Titration).					
5						
6						
7						
8						
9	Estimation of Zn from Brass (Displacement Titration).					
10	Determination of purity of Iron (Redox Titration).					
11	Determination of viscosity of given liquid. by Ostwald viscometer.					
12	Determination of corrosion rate by weight loss method					
13	Gravimetric estimation of Ba from BaSO <sub>4</sub> as BaO.					
14	Preparation of Resin					
	List of Topics(Applicable mode ):					
	Verification of Calcium content from Cement/ Limestone/Eggs she tablet.	ells/Calcium				

Dr. Doellas. Page A. D. Power

							Tex	tbo	oks					
1	C	College Practical Chemistry, V K Ahaluwaliya. Sunita Dhingra, Adarsha Gulati , Universities Press.												
2	L F	.aborat Rai& C	ory Ma	anual	on I	Engin	eering	Che	emist	try by S	Sudha R	ani And	S.K. Ba	shin, Dhanpa
							D							
	1.52				•		Refe	eren	ices	D		Chamist	WCE	- Sanali
1	E	Engineering Chemistry Laboratory Manual, Department of Chemistry WCE, Sangh.												
2	J	Men malysi	dham, s", Vog	R.C gels,	Pears	enney son E	ducatio	on, 2	arnes 2008	, M.J , 6th E	dition.	mas, Q	uannai	ive Chemica
							Usef	ul L	inks					
1	h	ttps://v	www.lo ent/che	ecc.e	du/ac ry-la	caden b-exp	nics/sci perime	ienc nts	e-an	d-engir	neering/s	cience-ir	n-motion	n/labs-
2	ŀ	ttps://	edu.rsc	.org/	resou	irces/	collect	ions	s/clas	sic-che	emistry-	experime	nts	
		COLLARCONT OFFIC				(	CO-PC	) M	appi	ng				
				Р	rogr	amm	e Outo	com	es (F	O)				PSO
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3													
CO2	3													
CO3	3													
The streng	th of	mappi	ng is to	be v	vritte	n as	1,2,3; v	when	re, 1:	Low, 2	2: Mediu	ım, 3: Hi	gh	
Each CO o	of the	course	must i	nap t	to at	least	one PC	), ar	nd pr	eferabl	y to only	one PO		
Test to T							Ass	essn	nent					
There are t IMP: Lab	three i ESE i	compo s a sep	nents c arate h	of lab	asse of pa	essme ssing	nt, LA .(min 4	1, L 10 %	.A2 a 6),LA	nd Lat	o ESE. 2 should	l be min 4	40%	
Assessn	nent	I	Based o	n	Co	nduc	ted by	£(		Тур	ical Sch	edule		Marks
LA1		a at	Lab ctivitie tendan journa	es, ce, l	L	ab C Facı	ab Course Faculty			ng Wee s Subn : 8	of	30		
LA2				L	.ab C	ourse	1	During Week 9 to Week 16 Marks Submission at the end of					30	

LA2	attendance, journal	Faculty	Week 16	30
Lab ESE	Lab activities, journal/ performance	Lab Course Faculty	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, as per the nature and requirement of the lab course. The experimental lab shall have typically 8-10 experiments and related activities if any.

Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)									
	AY 2023-24								
Course Information									
Progr	amme		First Year B. Tec	h. ( Mech. Civil. C	SE. IT)				
Class.	Semester		First Year B. Tech., Sem I/II						
Cours	e Code		7FF156						
Cours	e Name		Electrical and Ele	ectronics Engineeri	ng Lab				
Desire	d Requisi	tes•	12 <sup>th</sup> Physics						
,	Teaching	Scheme		Examination	Scheme (	(Marks)			
Practi	cal	2 Hrs/ Week	LA1	LA2	Lah	ESE	Total		
Intera	ction	-	30	30			100		
Intera			50		odite 1	,	100		
					cuito. 1				
			Cours	se Objectives					
1	This cou	rse intends to de	emonstrate basic kr	nowledge of Electr	ical engin	eering.			
2	It intend Machine	s to develop ski s.	lls to recognize wo	rking principle, co	nstruction	and types of e	electrical		
3	This cou	rse intends to de	emonstrate basic kr	nowledge of Electr	onics engi	neering.			
1	To provi	de knowledge o	of electronic compo	nents and circuits	to first yea	ar engineering	students, so		
-	that they	can understand	, design and implei	ment simple analog	g / digital	electronic circ	uits.		
A + -1	Course Outcomes (CO) with Bloom's Taxonomy Level								
At the	At the end of the course, the students will be able to,								
со		Cou	rse Outcome State	ement/s		Taxonomy Level	Taxonomy Description		
<b>CO1</b>	Describ	e basic concepts	of electrical circui	ts and various theo	orems.	II	Understanding		
CO2	Demons	trate the use of	transformers and A	AC/DC machines.		III	Applying		
CO3	Identify	and explain us	e of electronics con	mponents and instr	uments.	II	Understanding		
<b>CO4</b>	Constru	ct digital IC, di	ode, transistor and	op-amp based circ	uits.	III	Applying		
		]	List of Experimen	ts / Lab Activities	s/Topics				
List of	f Topics(A	pplicable for I	nteraction mode )	: Electrical	_				
1. To s	study AC a	and DC machine	es parts and their fu	inctions.					
2. Stuc	ly of AC/I	DC motor starter	rs.						
3. To s	study serve	o motor/ steeper	motor with application	ation.					
4. Stuc	ly of insta	llation technique	es using fuse, MCE	$\mathbf{B}$ and MCCB.	nit				
6. Mea	asure Volta	ge, current and	power factor of 1-	nhase A.C R-L ser	un. ies circuit	_			
List of	f Lab Acti	vities: Electric	al	phase A.C. K-L ser	les circuit				
1. Elec	ctrical Safe	ety Measures.							
2. To s	study serie	s-parallel RL, R	C and RLC circuit	S					
3. To v	verity KVI	$\perp$ and KCL theo	rems.						
4.108	study spee	ad test on transf	ques of ac and dc n	nachines.					
6. Find	d out equiv	alent resistance	in series and paral	lel connection.					
<ul> <li>List of Lab Activities: Electronics</li> <li>1. Identification of components and instruments required in lab to perform experiments in basic electronics engineering.</li> <li>2. Realization of logic gates using basic building block (NAND/NOP)</li> </ul>									
2. Rea	ering. lization of	of components a logic gates usir	and instruments rec	uired in lab to per	form expe ).	eriments in bas	ic electronics		
2. Rea 3. Imp	ering. lization of lementatio	of components a logic gates usir on of combinatio	and instruments rec ang basic building bl onal and sequential	uired in lab to per ock (NAND/NOR logic circuit.	form expe ).	riments in bas	ic electronics		

- 5. Study of diode-based clipper and clamper circuits
- 6. Study of transistor as a switch.
- 7. Study of inverting and non-inverting amplifier using op-amp.

Course Contents for F. Y. B.Tech. Programme, Department of Computer Science & Engineering, AY 2023-24

	Textbooks
1	D.C. Kulshreshtha, "Basic Electrical Engineering", 1 st revised editionMcGraw Hill, 2012.
2	D.P Kothari and I.J Nagrath, "Basic Electrical Engineering", Tata McGraw Hill, 2010.
3.	R. P. Jain, "Modern Digital Electronics", 4th edition, Tata McGraw Hill, 2009.
4.	Robert Boylestad, Louis Nashelsky, 11th edition, "Electronic Devices and Circuits, Pearson, 2015.
5.	Ramakant Gaikwad, "Op-amp and Linear Integrated Circuits", 4th edition, Pearson, 2015.
	References
1	V. N. Mittle and Arvind Mittal, "Basic Electrical Engineering", 2 nd edition, Tata McGraw Hill.
2	Morris Mano, "Digital Design", Pearson, 4th edition, 2011
3	Donald A. Neamen, "Electronic Circuit Analysis and Design", 3rd edition, Tata McGraw Hill, 2011
4	Robert F. Coughlin and Frederick F. Driscoll, "Operational Amplifiers and Linear Integrated Circuits", 6th edition, PHI, 2009
	Useful Links
1	Virtual Labs ,An Initiative of Ministry of Education Under the National Mission on Education through ICT, 1. https://www.vlab.co.in/broad-area-electrical-engineering
	2. http://viaos.nikgp.ac.in/asnii/#
2	through ICT:Basic Electronics
3	https://nptel.ac.in/courses/122106025

	CO-PO Mapping													
	Programme Outcomes (PO) PSO													50
	1         2         3         4         5         6         7         8         9         10         11         12         1         1										2			
CO1	3													
CO2	3 2													
CO3	3													
CO4	3 2													
The stre	The strength of mapping is to be written as 1,2,3; where, 1: Low, 2: Medium, 3: High													
Each CO	) of the	e course	e must 1	map to	at least	one PC	, and p	referab	ly to or	nly one	PO.			

Assessment											
There are three	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							
	Lab activities,		During Week 1 to Week 8								
LA1	attendance,	Lab Course Faculty	Marks Submission at the end of	30							
	journal		Week 8								
	Lab activities,		During Week 9 to Week 16								
LA2	attendance,	Lab Course Faculty	Marks Submission at the end of	30							
LA2	journal		Week 16								
	Lab activities,	Lab Course Faculty and	During Week 18 to Week 19								
Lab ESE	journal/	External Examiner as	Marks Submission at the end of	40							
	performance	applicable	Week 19								
Week 1 indicates starting week of a semester. Lab activities/Lab performance shall include performing											
experiments, m	ini-project, preser	ntations, drawings, program	ming, and other suitable activities, a	s per the							
nature and requ	irement of the lab	course. The experimental l	ab shall have typically 8-10 experim	ents and							
related activitie	es if any.										

# Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)

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Course Information								
Programme	B.Tech.							
Class   Semester	First Year B. Tech (Computer Science & Engineering)   Semester II							
Course Code	7CS108							
Course Name	Computer Programming (C Programming)							
Desired Requisites:								

	Teaching	g Scheme		Examinatio	n Scheme	(Marks)				
Practi	ical	2 Hrs/ Week	LA1	LA2	Lab	ESE	Total			
Intera	action	2 Hrs/ Week	30	30	4	0	100			
				С	redits: 3					
			Cour	rse Objectives						
1	To unde	erstand problem sol	ving and proble	em solving aspects.	•					
2	To learn	n basics, features an	d future of C p	rogramming.	• • • • •	1				
3	10 acqu	aint with data typ	es, input output	it statements, dec	ision maki	ng, looping, fi	inctions, arra			
	j su ing, p	Course C	utcomes (CO)	with Bloom's Ta	xonomy I	evel				
At the	end of the	e course, the studen	ts will be able i	to,						
						Bloom's	Bloom's			
CO	Course Outcome Statement/s Taxonomy									
COI	Level									
COI	program	nming.	asics of pr	oblem solving	and C	П	Understand			
CO2	To tran	slate the algorithm	is to programs	s (in C language).	•	III	Applying			
CO3	To test errors.	and execute the C	programs and	correct syntax an	nd logical	IV	Analyse			
		List	of Experimen	ts / Lab Activitie	s/Topics	å				
		List of Topics	Applicable fo	r Interaction Mod	le):		Hrs/Week			
Modu	le I: Ba	usics of Problem	Solving &	C Programmin	ng: Gener	ral Problem				
Solvin	g Conce	pts, Types of Prob	lems, Problen	n Solving Strateg	gies. Prog	ram Design				
<b>Fools:</b>	Algorit	hms, Flowcharts	and Pseudo-	Codes. C Prog	ramming	: Types of	4			
progra	mming l	anguages, Feature	s of C, Basic	Concepts, Struc	ture of a	C Program,				
Declar	ations, C	Constants, Variabl	es, Data Typ	es, Operators an	d Express	sions, Input				
and Ou	atput Fun	octions.								
Modul	le II: D	ecision Control	Statements:	Conditional St	atements:	If, If-else,				
Nested	If, If-el	seif Statements.	Iterative Stat	tements: While	Loop, Fo	r Loop, Do	5			
While	Loop, Br	eak, Continue, Pa	ss, else Staten	nent used with Lo	oops.	•				
Modul	e III: I	Functions: Need	for function	s, Definition, F	unction (	Call, Block				
Structu	re, Varia	able Scope, Retur	n Type, Passi	ng Arguments to	o a Functi	on: Call by	4			
Referen	nce, Call	by Value, Recurs	ive Functions							
Modul	e IV: A	rray: Declaration	n. Initializatio	on, Two-Dimens	ional Arr	avs. Multi-				
Dimens	sional A	rrav. String: De	claration and	I Initialization of	of Strings	Array of	4			
strings	, String f	unctions.			or sumps	, , , , , , , , , , , , , , , , , , , ,				
Aodul	e V: Poi	nters: Introductic	n Definition	and Declaration	of Pointe	rs Address				
Derato	or. Point	er Variables Str	uctures and	Unions. Decla	ration In	itialization				
ccess	ing mem	bers of a Structure	Initializing	a Union Access	ing the M	mbers of a	5			
Inion	ing mem		, mitializing	a Union, Accessi	ing the Me	anders of a				
Andul	VI. F	le handling: Can	cont of a File	Tumos of Ell-	Eile Or	notion Dil-				
unction	ne File o	pening modes in (	Deading W	rite and Classic	o Ello	ration, File	4			

Course Contents for B. Tech Programme First Year, AY 2023-24

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#### List of Experiments:

- 1. Program to simulate simple calculator that performs basic tasks such as addition, subtraction, multiplication and division.
- 2. Program to demonstrate different operators and their order precedence.
- 3. Program to accept the number and Compute a) square root of number, b) Square of number, c) Cube of number d) check for prime, d) factorial of number e) prime factors.
- 4. Program to accept a number from user and print digits of number in a reverse order.
- 5. Program to accept two numbers from user and compute smallest divisor and Greatest Common Divisor of these two numbers.
- 6. Program to find whether the number is positive / negative / zero using conditional statement.
- 7. Programs to show different types of iteration / loop.
- 8. Program to accept N numbers from user and compute and display maximum in list, minimum in list, sum and average of numbers.
- 9. Program to print the Fibonacci Series (with & without recursion).
- 10. Program to swap two number using function (Call by value & reference).
- 11. Program to demonstrate structure to array.
- 12. Program to demonstrate structure and union.
- 13. Program to demonstrate file handling.

	Textbooks
1	E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill.
2	Yashavant Kanetkar, "Lets Us C", BPB Publication, 5th Edition, 20216.
	References
1	Maureen Spankle, "Problem Solving and Programming Concepts", Pearson; 9 <sup>th</sup> edition, ISBN-10. 9780132492645, ISBN-13: 978-0132492645.
2	Herbert Schidt, C: The complete reference, 4th edition, McGraw Hill publication.
3	Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, Prentice Hall of India
	lleeful Linke
1	https://www.programiz.com/c-programming
2	https://www.w3schools.com/c/c intro.php
3	https://www.javatpoint.com/c-programming-language-tutorial

						CO-P	O Map	ping						
	Programme Outcomes (PO)												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2												<b> </b>
CO2	1		2		2									
CO3		2	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, and preferably to only one PO.

		Assessment		
There are three IMP: Lab ESE	components of lal is a separate head	o assessment, LA1, LA2 a of passing.(min 40 %), LA	nd Lab ESE. A1+LA2 should be min 40%	
Assessment	Based on	Conducted by	Typical Schedule	Marks
LA1	Lab activities, attendance, Submission	Lab Course Faculty	During Week 1 to Week 8 Marks Submission at the end of Week 8	30
LA2	Lab activities, attendance, Submission	Lab Course Faculty	During Week 9 to Week 16 Marks Submission at the end of Week 16	30

Course Contents for B. Tech Programme First Year, AY 2023-24

Weldy

	Lab activities/	Lab Course Faculty and	During Week 18 to Week 19						
Lab ESE	submission/	External Examiner as	Marks Submission at the end of	40					
	performance	applicable	Week 19						
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 pattern and requirement of the lab assure. The current set of the lab assure that he had be assured by the set of the lab assure that he had be assured by the lab assure that he had be assured by the lab									
related activitie	s if any.	course. The experimental h	ab shall have typically 8-10 experime	nts and					

Course Contents for B. Tech Programme First Year, AY 2023-24

Welde

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)											
			(Government Au	Y 2023-24	<i>iuie)</i>							
			Cours	e Information								
Progra	amme		B.Tech. (Electrica	1. Electronics, CSE,	(TI							
Class.	Semest	er	First Year B Tech	Sem I &II								
Cours	e Code		7ME108									
Cours	e Name	•	Engineering Gran	hics Lab								
Desire		 visites:	Basic Knowledge	of Computer								
Desire	u Requ		Busic Knowledge	or computer								
Т	eaching	Scheme		Examination S	cheme (Marks)							
Practi	cal	2Hrs/Week	LA1		ESE F	Total						
Intera	cai	1 Hrs/Week	30	30	40	100						
mera		1 1115/ WEEK	50	 Crod	+0	100						
Credits: 2												
			Court	a Obiostinos								
1	Taim	n ant that to also is		se Objectives								
1	To im	part the technic	ues of engineering	graphics. Wladga of anginaari	na graphics in real li	fo drowings						
3	To pre	velop the skills	of students for eval	uating CAD softwar	re for its applications							
3   To develop the skills of students for evaluating CAD software for its applications												
		Cour	rse Outcomes (CO)	) with Bloom's Tax	onomy Level							
At the end of the course, the students will be able to,												
CO Course Outcome Statement/s Bloom's Bloom's Bloom's Taxon												
CO1 Understand the basic principle of Engineering graphics II Understanding												
Draw different views of components using the first angle III Applying												
CO2	projec	tions method.		-88								
CO3Apply the knowledge of engineering graphics in real lifeIIIApplyingapplications.IIIIIIIII												
List of Experiments / Lab Activities												
List of Experiments: Submission of drawing on following topics (Any two sheets on CAD) 1: Plane Curves and Conic Sections (Min. 5 Problems) 2: Projections of Points and Lines (Min. 5 Problems) 3: Projections of Planes and Solids (Min. 6 Problems) 4: Development of Lateral Surfaces (Min. 3 Problems) 5: Orthographic Projections (Min. 2 Problems) 6: Isometric Projections (Min. 2 Problems)												
			Т	ext Books								
1	Bhatt	N.D., Panchal '	V.M. and Ingle P.R.	, Engineering Draw	ing, Charotar Publis	hing House, 2014						
2	Shah, 2008.	M.B. and Ran	a B.C., Engineerin	g Drawing and Con	mputer Graphics, Pe	earson Education,						
3	Agrav	val B. and Agra	awal C. M., Enginee	ering Graphics, TMI	H Publication, 2012.							
1	) NT	** *	R	References								
1	Naray Warra	ana, K.L. and H	Kannaiah, Text bo	OK ON Engineering I	Drawing, Scitech Pu	blishers, 2008.						
2	2010	II J. Luzzader,										
3	Fredd McMi	erock E. Giese llan Publishing	ecke, Alva Mitchell g, 2010	others, Principles	s of Engineering G	rapnics, Maxwell						
1	1		Us	seful Links								
	https:/	/nptel.ac.1n/cou	arses/112/103/11210	13019/								

Course Contents for F. Y. B. Tech. Programme, Department of Computer Science & Engineering, AY 2023-24

3 https://www.youtube.com/watch?v=xXdpkQXDuMw&list=PL9RcWoqXmzaJT- fliqTSwUjWU4zCX H2A	2	https://nptel.ac.in/courses/105/104/105104148/
	3	https://www.youtube.com/watch?v=xXdpkQXDuMw&list=PL9RcWoqXmzaJT-fliqTSwUjWU4zCX_H2A

	CO-PO Mapping For Electrical Engineering Department														
	Programme Outcomes (PO) PSO														
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1         2         1         1         1         1															
CO2															
CO3					2					1					
The stren	gth of 1	mappir	ng is to	be wri	itten as	\$ 1,2,3;	Where	e, 1:Lo	w, 2:N	ledium	n, 3:Hig	gh			

	CO-PO Mapping Electronics Engineering Department														
		Programme Outcomes (PO)									PSO				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	1				1					1					
CO2			1												
CO3					2					1					
The stren	gth of 1	mappii	ng is to	be wr	itten as	\$ 1.2.3:	Where	e. 1:Lo	w. 2:N	Iedium	. 3:Hi	gh			

	CO-PO Mapping Computer Science and Engineering Department														
		Programme Outcomes (PO)										PSO			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1					3					1		1			
CO2			1												
CO3					3					1					
The stren	The strength of mapping is to be written as 1.2.3: Where, 1:Low, 2:Medium, 3:High														

CO-PO Mapping For Information Technology Department															
		Programme Outcomes (PO)									PSO				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1					3					1		1			
CO2			1												
CO3					3					1					
The stren	The strength of manning is to be written as 1.2.3: Where 1:Low 2:Medium 3:High														

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% Assessmen **Based** on Conducted by **Typical Schedule** Mark t S Lab activities, Lab Course During Week 1 to Week 8 LA1 30 attendance, journal Marks Submission at the end of Week 8 Faculty Lab Course During Week 9 to Week 16 Lab activities, LA2 30 Marks Submission at the end of Week 16 attendance, journal Faculty Lab Course Lab activities, Faculty and During Week 18 to Week 19 Lab ESE External 40 journal/ Marks Submission at the end of Week 19 performance Examiner as applicable Week 1 indicates starting week of a semester. Lab activities/Lab performance shall include performing

Course Contents for F. Y. B.Tech. Programme, Department of Computer Science & Engineering, AY 2023-24

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.

	Walchand College of Engineering, Sangli (Government Aided Autonomous Institute)								
	AY 2023-24								
	Course Information								
Programme	me B.Tech. (Computer Science & Engineering)								
Class, Seme	ter First Year B. Tech., Sem II								
Course Cod	le	7CS15	52						
Course Nan	ne	Basics	s of Web Techn	ology Lab					
Desired Rec	quisites:								
T	Teaching SchemeExamination Scheme (Marks)								
Lecture	-		LA1	LA2	ESE	Total			
Tutorial	-		30	30	40	100			
Practical	2 Hrs/week								
Interaction	raction - Credits: 1								
		Co	urse Objective	es					
1	To enable students to deve	lop simp	ple web form u	sing basic web te	chnologies an	d host it.			
2	To enable students to deve	lop a res	sponsive web a	pplication.					
3	To make students understa them.	ind secur	rity issues invo	lved in web appl	ications and he	ow to handle			
4	To enable students to use c	latabase	s and content n	nanagement syste	em (CMS)				
	Course Outco	omes (C	O) with Bloom	i's Taxonomy L	evel				
At the end o	t the course, the students wi	II be abl	e to,	avat /a		Dla arra?a			
	Co	urse Ou	itcome Statem	ent/s		Bloom's Taxonomy Description			
C01	Explain responsive and authorization and authentic	static cation	layouts, datab	bases, web secu	urity, CMS,	Understand			
CO2	Implement web forms, we with suitable UI for a target	eb pages et device	using front-en	d and back-end	technologies	Apply			
CO3	Observe dynamic web laye	outs and	styling			Analyze			

#### List of experiments:

- 1. **Objective**: Get acquainted with web browsers and web development tools. **Tasks**:
  - a. Uninstall and install Google Chrome and Firefox
  - b. Start localhost server
  - c. Install Visual Studio Code
- 2. **Objective**: Create a basic HTML page with headings, div, paragraphs, and lists. **Tasks**:
  - a. Create website for registering students to 'ExeclTech College of Engineering' having 3 pages home.html, signup.html, login.html.
  - b. Use appropriates tasks for following content on home.html Name of the college, address of the college, information and image of the college
  - c. Create separate sections for: list of UG academic programs, list of PG academic programs, list of faculty members and contact information. Give appropriate title for each section.
- 3. **Objective**: Understand the concept of hyperlinks and anchor tags.

## Tasks:

- Provide hyperlinks for Sign up and Login on home.html. On click of Sign up, user should get navigated to signup.html page. On click on Login page, user should get navigated to login.html. These 2 pages can be blank.
- b. Provide Search link on the top that navigates to <u>www.google.com</u>
- c. Provide navigation links on the top of the page on home.html for the following: UG program, PG program, Faculty. On clicking on these links user should get navigated to respective section on the same page.
- 4. **Objective**: Apply styles to HTML elements using CSS

# Tasks:

- a. Add CSS rules to change the text colour, font, and size of all headers on home.html.
- b. Set background colour for the page and for paragraph tag.
- c. Apply borders and margins to elements to create visual effects for paragraph and header tags.
- 5. **Objective**: Understand how to create layouts using CSS positioning and floats.

# Tasks:

- a. Create a simple two-column layout using CSS positioning for home.html.
- b. Add various sections on home.html to div tags. Create float-right, float-left CSS class and apply to div tags.
- c. Convert links for UG programs, PG programs and Faculty into visually appealing boxes using div tag and appropriate styling.

# 6. **Objective**: Familiarize with the basics of JavaScript programming. **Tasks**:

- a. Perform arithmetic operations (add, subtract, divide and multiply) by creating functions and using JavaScript operators.
- b. Write a function that accepts 2 strings and returns concatenates string.
- c. Write a function to check if a number is odd or even.
- d. Write a function that accepts a number n and outputs all numbers from 0 to n in increasing order.
- 7. **Objective**: Understand the Document Object Model (DOM) and its significance.

## Tasks:

- a. Create login.html which accepts Username and Password. Provide Submit button.
- b. On click of button, check if username is 'admin' and password in 'PwD123'. If entered details are correct, navigate to home.html and provide text message 'Login successful!' on the home.html in green. If details are incorrect, navigate to home.html and provide text message 'Unsuccessful login..' on the home.html in red.
- 8. **Objective:** Create HTML forms for user input and handle form submission using JavaScript. **Tasks:**

a.	Design signup.html to accept following information from user: First name, Last name, Age,
	Contact number, Address (multi-line input should be accepted), Email ID, Username, Password
	and Confirm Password. Provide Submit button.

- b. Modify home.html, signup.html and login.html to give common header of name of college and suitable colour scheme. Align all elements, if required, suitably.
- c. Perform following validation of fields on signup.html. Give pop up error message.
- i. Names should be alphabets only
- ii. Age should be numeric
- iii. Contact number should be only numeric and 10 digits long.
- iv. Email ID should contain @
- v. Password and Confirm Password should be same.
- 9. **Objective**: Apply design principles for mobile-friendly websites using media queries. **Tasks**:
  - a. Apply media queries to home.html, signup.html and login.html.
  - b. Test responsive UI on browsers by web developer tools in the browser.
  - c. Observe how div tags are floating and change CSS if required.
  - d. Use off the shelf responsive UI frameworks like Bootstrap and create home-responsive.html using grid layout.
- 10. **Objective**: Understand server-side scripting languages, databases, and data storage.

## Tasks:

- a. Install and set up a server-side scripting environment (PHP or Node.js).
- b. Connect to a database (e.g., MySQL) and perform basic CRUD operations.
- c. Display data from the database on a web page.

(Instructor to provide necessary table creation script and data. Students are only expected to get the data from DB and display on web page.)

11. **Objective**: Understand web hosting and domain registration concepts.

## Tasks:

- a. Explore various web servers.
- b. Explore how to enable localhost on Windows system.
- c. Host home.html on local system
- d. Explore various domain providers and their costings
- 12. Objective: Implementing User Authentication and Authorization

## Tasks:

- a. Provide user authorization and authentication such that
- b. All users should be able to access home.html, signup.html and login.html.
- c. Only following users should get navigated to home.html with proper success message.

Username	Password
User1	PwD125
User2	PwD124
admin	PwD123

d. Validate all pages properly and check for security issues, if any.

13. **Objective**: Get familiar with Content Management Systems.

## Tasks:

- a. Explore popular CMS platforms (e.g., WordPress, Joomla).
- b. Install and set up a CMS on a local development environment.
- c. Create and manage content using the CMS's interface.

	Text Books						
1	Web Technology: Theory and Practice by M. Srinivasan, Released June 2012, Publisher(s):						
1	Pearson India, ISBN: 9788131774199						
	References						
	Web Application Security by Andrew Hoffman, Released March 2020, Publisher(s): O'Reilly						
1	Media, Inc. ISBN: 9781492053118						

2	Web Technologies by Achyut Godbole and Atul Kahate, Publication: Tata McGraw-Hill Education Pvt. Ltd., ISBN13: 9781259062681
	Useful Links
1	https://www.w3schools.com/

	CO-PO Mapping													
		Programme Outcomes (PO)								PSO				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3												2	2
CO2	2		2		3				3				2	3
CO3	1		1							2			1	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.

related activities if any.

		Asses	sment					
There are three	There are three components of lab assessment, LA1, LA2 and Lab ESE.							
IMP: Lab ES	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				
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	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								

Course Contents for F. Y. B.Tech. Programme, Department of Computer Science & Engineering, AY 2023-24

	Walchand College of Engineering, Sangli									
			A	<b>Y 2023-24</b>	nsiliule)					
			Cour	se Information						
Progra	amme		B. Tech. (Electr	onics Engineerin	g)					
Class,	Class, Semester First Year B. Tech., SemI									
Cours	e Code		7VS152							
Cours	e Name		Engineering Ski	ills-II						
Desire	Desired Requisites: -									
]	<b>Feaching</b>	Scheme		Examinatio	on Scheme	(Marks)				
Practi	cal	2 Hrs/	LA1	LA2	Lab Es	SE	Total			
<b>T</b> 4		Week	20	20	40		100			
Intera	ction	-	30	30	$\frac{40}{1}$		100			
				(	realts: 1					
			Соц	rse Objectives						
1	To provi	de basic know	ledge of handling	electrical equipn	nent and saf	ety.				
2	To impa	rt skills to plan	and implement s	imple electrical w	viring.					
3	To prov	ide exposure to	the students with	h hands on experi	ence on var	ious basic eng	gineering			
1	To expla	in Electrical a	and Electronics Er	igineering.	etronic bell	amarganey 1	amp etc			
	Тослри	Cours	e Outcomes (CO	) with Bloom's	<b>Faxonomy</b>	, energency ia Level	amp etc.			
At the	end of the	course, the stu	udents will be able	e to,	<u> </u>					
СО	CO     Course Outcome Statement/s     Bloom's Taxonomy Level     Bloom's Taxonomy Description									
CO1	Identify	the instrument	ts for measuremen	nt of electrical pa	rameters.	I	Remembering			
CO2	<b>Illustrat</b>	e working ons.	of switchgear f	for electrical sa	afety and	III	Applying			
CO3	Identify	and explain the	he use of electron	ic instruments.			Understanding			
04	Build al	ia rest simple	electronic gadget			111	Applying			
		]	List of Experime	ents / Lab Activi	ties/Topics					
List of Engine Modu	f Lab Acti eering Sk le 1:	ivities: (minim ills (Electrical	num 08 experime )	ents)						
i.	Mea	surement of El	lectrical Paramete	ers in DC Circuits	•					
ii. Madul	Mea	surement of El	lectrical Paramete	ers in Single Phas	e AC Circui	ts.				
i.	ie 2: Stud	lv of various tv	mes of wires and	cables.						
ii.	Basi	c wiring schen	nes for residential	and industrial ap	plications.					
iii.	. Den	nonstrate the op	peration of fuse, N	ACCB, ELCB						
Modu	le 3: Dror	portion of Fort	hing Dit for Floot	rical Installation	Safaty					
ii.	Disr Iron	nantling, Asser , Plate Tube W	mbly and Fault Fi Vater Heater, Use	nding of Ceiling of Megger.	Fans / Table	e Fans, Autom	atic Electric			
Engine Modul measu	Engineering Skills (Electronics) Module 1: Introduction to Lab Instruments like CRO, Power supply, Oscillator, Multi meter. Frequency measurement, AC-DC voltage measurement using CRO and multi meter									
Modul relays,	le 2: Stu PCB etc.	dy of component of the string and left	nents (Resistance ead identification	e, capacitor, Di	ode, Transi	stor, Transfo	rmer, switches,			
Modu	le 3: Elect	ronics Gadget	building & testing	g (Gadget must w	vork)					

	Textbooks
1	Make: Electronics, by Charles Platt, Published by Maker Media, 2015
2	Electronics Projects For Dummies, by by Earl Boysen and Nancy Muir, Published by Wiley
	Publishing, Inc., 2006
3	D.C. Kulshreshtha, "Basic Electrical Engineering", 1 st revised editionMcGraw Hill, 2012.
4	D.P Kothari and I.J Nagrath, "Basic Electrical Engineering", Tata McGraw Hill, 2010.
	References
1	Paul Horowitz, Winfield Hill, "The Art of Electronics", Cambridge University Press, 1989
2	E-learning material through Intranet/Internet
2	V. N. Mittle and Arvind Mittal, "Basic Electrical Engineering", 2 nd edition, Tata McGraw
5	Hill.
4	
	Useful Links
1	
2	
3	
4	

CO-PO Mapping														
		Programme Outcomes (PO) PSO											50	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1			1		2				1				1	
CO2			1		2				1				1	
CO3				2					1					1
CO4				2					1					2
The stre	ength of	mappi	ng is to	be wri	tten as	1,2,3; v	where, 1	: Low,	2: Mec	lium, 3	High			
Each CO	O of the	e course	e must 1	map to	at least	one PC	), and p	referab	ly to or	nly one	PO.			

		Asses	sment	
There are three	components of la	b 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
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 indicate experiments, m	es starting week of ini-project, preser	f a semester. Lab ac ntations, drawings, p	tivities/Lab performance shall include performance shall include performance shall include performance at the performance of th	rming s per the

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.

		IGOVERNMENT AIGED AT	tonomous Institute)								
	100 LV C MC 10	AY 202	23-24	Construction of the second							
		Course Info	ormation								
Progra	amme	B.Tech. (I.T. & Computer Engineering)									
Class,	Semester	First Year B. Tech., Sem I/ II									
Cours	e Code	7CH103 Engineering Chemistry (I.T./ Computer) Chemistry course at Secondary and Higher secondary level									
Cours	e Name										
Desire	d Requisites:										
				niske bus en							
	Teaching Scheme		e (Marks)								
Lectur	re 2 Hrs/week	MSE	MSE ISE ES								
Tutori	al 0 Hrs/week	30	100								
			Credits: 3								
		Course Ob	viectives								
	To make student familia	ar with engineering pro	perties associated wi	th different ma	terials to use						
1	them successfully in pra	them successfully in practice.									
2	To provide knowledge a	nd significance of chara	acterization and cher	nical analysis fo	r using						
	materials in different er	rent engineering applications.									
	dr pro gre										
and the second	Course	Outcomes (CO) with	Ploom's Toxonomy	Loval							
At the	end of the course, the stu	dents will be able to.	bloom's raxonomy	Level							
			Start Achiever	Bloom's	Bloom's						
CO	Cour	se Outcome Statemen	t/s	Taxonomy	Taxonomy						
001	Fundada Assura aleganical	analysia. Calasifia yalu		Level	Description						
	Explain terms chemical	analysis, Calorific value	alorific value, water parameters,								
L	applications		n, water s muustria	11	ng						
CO2	Draw schematic of wat	er softeners, Glass e	lectrode, GLC setup,		Understand						
-	Calorimeters			I	ng						
CO3	Classify types of che	mical analysis, hard	water, Engineering		Understand						
	materials, types of poly	mers. Chromatography.	Set Burthing Charles	I	ng						
CO4	Calculate concentration	of solutions, % of and	alyte gravimetrically,	And AN Inc.	Secold Lines						
	hardness of water, Calo	rific values			Applying						
Modul	le	lodule Module Contents									
Modul	le Module 1. General p	Module Con principles of chemical A	tents Analysis Part A: Volur	netry	Hours						
Modul	le Module 1. General p Chemical analysis,	Module Con principles of chemical A Its types/ classificat	tents Analysis Part A: Volur ion, Different way:	metry s to express	Hours						

application of type analysis & Numerical problems. Module 2. General principles of chemical Analysis Part B: Gravimetry & Instrument Gravimetry and its requirements, applications and Numerical problems. pH metry, potentiometry, Single beam spectrophotometry w.r.t. Principle,

Instrumentation, Calibration, Application Chromatography and its types & Introduction to GLC, Introduction for SEM, TEM, AFM and its applications. Advantages and Disadvantages of instrumental and non-instrumental methods.

(Dr. Dodla S. Rao) (A A Powar)

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(K.V. Machale) · Szur (K.V. Machale) · Szur

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ш	Modules 3. Water Chemistry - Natural sources of water, Impurities in natural water. Water quality parameters Hardness- Definition, Causes, Types, Expressing hardness, units to measure hardness, Numerical problems on hardness calculation, ill effects of hard water in steam generation, Alkalinity, Chloride, Dissolved oxygen(DO), Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) its significance. Ion exchange method of water softening.							
IV	Module 4 : Corrosion Science Definition of corrosion, Types of corrosion, Dry & wet corrosion, Electrochemical & Galvanic series & its importance, Mechanism of Hydrogen evolution and Oxygen absorption corrosion, Factors influencing rate of corrosion, Various methods for protection from corrosion viz. Surface coatings(Electroplating, Galvanizing, Tinning) Cathodic and Anodic protection.	7						
v	Module 5: Energy Science Fuel and its classification, Characteristics of good fuel, Properties of solid, liquid and gaseous fuels. Calorific value, Gross and net calorific value, its units, and determination by Bomb and Boys calorimeter, Numerical problems on calorific value.	6 .						
VI	Module 6: Non-metallic Materials: Engineering materials and its types, polymer: Polymerization reactions. Addition and condensation and co polymerization Plastic & types of plastics, Properties & uses of PVC, PS, Bakelite, Epoxy resin. Elastomers and its properties, Natural rubber and its drawbacks, process of vulcanization Properties and uses of Butyl rubber, Neoprene and Thiokol, Insulating Materials: Introduction, characteristics, Classification, Properties and uses of Glass wool, Thermocole and Asbestos.	6						
1	Textbooks							
2	S.K. Singh, Engineering Chemistry", New Age Publication, 3rd Edition, 2005.							
3	Jain P.C. and Jain Monika, "Engineering Chemistry", Dhanpat Rai Publication, 3rd Edition, 200. 2013	3. L6th Edition,						
		and the second second						
	Defensees							
1	References O G Palanna, "Engineering Chemistry" Tata McGraw Hill 2000	, Million III						
1	References           O G Palanna, "Engineering Chemistry" Tata McGraw Hill 2009.           Mendham, R.C. Denney, J.D. Barnes, M.J.K Thomas, "Quantitative Chemical analy Pearson Education, 6th Edition , 2008.	rsis", Vogel's						
1 2 3	References O G Palanna, "Engineering Chemistry" Tata McGraw Hill 2009. Mendham, R.C. Denney, J.D. Barnes, M.J.K Thomas, "Quantitative Chemical analy Pearson Education, 6th Edition, 2008. S.S Dara, "Engineering Chemistry" S. Chand and Company 2008.	rsis", Vogel's						
1 2 3 4	References           O G Palanna, "Engineering Chemistry" Tata McGraw Hill 2009.           Mendham, R.C. Denney, J.D. Barnes, M.J.K Thomas, "Quantitative Chemical analy Pearson Education, 6th Edition , 2008.           S.S Dara, "Engineering Chemistry" S. Chand and Company 2008.           Askeland and Phule , "The Science and Engineering of Materials" Thomson Pub           Edition , 2003	vsis", Vogel's						
1 2 3 4 5	References           O G Palanna, "Engineering Chemistry" Tata McGraw Hill 2009.           Mendham, R.C. Denney, J.D. Barnes, M.J.K Thomas, "Quantitative Chemical analy Pearson Education, 6th Edition , 2008.           S.S Dara, "Engineering Chemistry" S. Chand and Company 2008.           Askeland and Phule , "The Science and Engineering of Materials" Thomson Pub Edition ,2003           V.R. Gowarikar, Polymer Science", Wiley Eastern Publication, 1986. 1st Edition	olication 4th						
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1 2 3 4 5 6	References           O G Palanna, "Engineering Chemistry" Tata McGraw Hill 2009.           Mendham, R.C. Denney, J.D. Barnes, M.J.K Thomas, "Quantitative Chemical analy Pearson Education, 6th Edition , 2008.           S.S Dara, "Engineering Chemistry" S. Chand and Company 2008.           Askeland and Phule , "The Science and Engineering of Materials" Thomson Pub Edition ,2003           V.R. Gowarikar, Polymer Science", Wiley Eastern Publication, 1986, 1 <sup>st</sup> Edition Douglas A. Skoog, E James Holler, Stanely R Crouch, " Principles of Instrumenta Thomson publication, 2007, 6 <sup>th</sup> Edition           Useful Links           https://edu.rsc.org/resources           A free resource for Chemistry teachers and students of all levels, including higher hosted by Royal Society of Chemistry.	plication 4th I Analysis", r education,						
1 2 3 4 5 6 1 2 3	References           O G Palanna, "Engineering Chemistry" Tata McGraw Hill 2009.           Mendham, R.C. Denney, J.D. Barnes, M.J.K Thomas, "Quantitative Chemical analy Pearson Education, 6th Edition , 2008.           S.S Dara, "Engineering Chemistry" S. Chand and Company 2008.           Askeland and Phule , "The Science and Engineering of Materials" Thomson Pub Edition ,2003           V.R. Gowarikar, Polymer Science ", Wiley Eastern Publication, 1986, 1 <sup>st</sup> Edition Douglas A. Skoog, E James Holler, Stanely R Crouch, " Principles of Instrumenta Thomson publication, 2007, 6 <sup>th</sup> Edition           Useful Links           https://edu.rsc.org/resources           A free resource for Chemistry teachers and students of all levels, including higher hosted by Royal Society of Chemistry.           https://www.digimat.in/nptel/courses/video/122106028/L01.html	vsis", Vogel's plication 4th Il Analysis", r education,						

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	Programme Outcomes (PO)										PSO			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3													
CO2	3													
CO3	3													1
CO4	3		~											1

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, surprise or declared test etc.

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)

Dr. Dodla S. Rao) A-A-Powar (Triv. N.B. (Triv. v.B. (T

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