DEPARTMENT OF MATHEMATICS

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Curriculum & Syllabus B.Sc Mathematics

REGULATION 2017

CURRICULUM AND SYLLABUS BEFORE REVISION

REGULATIONS – 2017

(Applicable to the students admitted from the Academic year 2017 – 2018 onwards)

SEMESTER I

Туре	Sub. Code	Name of the Course	L	Τ	Р	SS	H	С
CC-3 (DSC3A)	XMT101	Classical Algebra	3	2	0	-	5	4
UMAN 1	XMT102	Ariviyal Tamil	3	0	0	-	3	3
CC 1	XMT103	Fundamental Physics	3	1	0	-	4	4
CC 2 (DSC 2A)	XMT104	Foundation Course in Mathematics	3	2	0	-	5	4
AECC1	XGE105	Study Skills	1	0	2	2	3	1
UMAN 2	XUM106	Human Ethics, Values, Rights and Gender Equality	1	0	0	2	3	1
CC - 1 lab	-	Fundamental Physics(Practical -1)	0	0	0	-	3	-
		TOTAL	14	5	0	4	26	17

SEMESTER II

Туре	Sub. Code	Name of the Course	L	Т	Р	SS	Η	С
AECC 2	XGE201	Speech and Business Communication	3	0	0	-	3	3
AECC 3	XES202	Environmental Studies	2	1	0	-	3	2
CC 4	XMT203	Modern Physics	3	1	0	-	4	4
CC 5 (DSC 2B)	XMT204	Calculus	4	2	0	-	6	5
CC 6 (DSC 3B)	XMT205	Sequences and Series	4	2	0	-	6	5
GE1	-	*Open Elective -To be chosen by student	3	0	0	-	3	3
CC 1 Lab	XMT206	Fundamental Physics(Practical -1)	0	0	3	-	3	2
		TOTAL	19	6	3	0	28	24

SEMESTER III

Туре	Sub. Code	Name of the Course	L	Τ	Р	Н	C
CC 7	XMT301	Introduction to Computers and Office Automation (Theory)	2	2	0	4	3
SEC1	XMT302	General Intelligence – I	2	2	0	4	3
CC 8 (DSC 2C)	XMT303	Differential Equations and Laplace Transforms	4	2	0	6	5
CC 9 (DSC 3C)	XMT304	Analytical Geometry 3D	4	2	0	6	5
GE 2	-	*Open Elective - To be chosen by student	3	0	0	3	3
CC 7 lab	XMT305	Introduction to Computers and Office Automation (Practical)	0	0	2	2	1
		TOTAL	15	8	2	25	20

SEMESTER IV

Туре	Sub. Code	Name of the Course	L	Τ	Р	Η	C
CC – 10	XMT401	Object Oriented Programming with C++ (Theory)	3	0	0	3	3
SEC-2	XMT402	General Intelligence – II	2	2	0	4	3
CC- 11 (DSC 2D)	XMT403	Vector Calculus & Fourier Series	4	2	0	6	5
CC -12 (DSC 3D)	XMT404	Mechanics	4	2	0	6	5
GE 3	-	*Open Elective - To be chosen by student	3	0	0	3	3
CC -10 Lab	XMT405	Object Oriented Programming with C++ (Practical)	0	0	3	3	3
		TOTAL	16	6	3	25	22

Туре	Sub. Code	Name of the Course	L	Τ	Р	Η	С
SEC 3	XMT501	Numerical Methods with C Programming (Theory)	3	2	0	5	4
DEE 1A	XMT502A	Mathematical Statistics	4	2	0	6	5
DSE IA	XMT502B	Stochastic Processes					
	XMT503A	Abstract Algebra	4	2	0	6	5
DSE 2A	XMT503B	Discrete Mathematics					
	XMT504A	Modern Analysis	4	2	0	6	5
DSE 3A	XMT504B	Graph Theory					
GE 4	-	*Open Elective - To be chosen by student	3	0	0	3	3
SEC3 (Lab)	XMT505	Numerical Methods with C Programming (Practical)	0	0	2	2	2
Extra Credit		IPT(21 days)					2
		TOTAL	18	8	2	28	24 +2*

SEMESTER V

SEMESTER VI

Туре	Sub. Code	Name of the Course	L	Т	Р	Н	С
	XMT601A	Linear Algebra	4	2	0	6	5
DSEIB	XMT601B	Number Theory					
	XMT602A	Complex Analysis	4	2	0	6	5
DSE2B	XMT602B	Mathematical Modelling					
DSE3D	XMT603A	Linear Programming	4	2	0	6	5
DSE2D	XMT603B	Financial Accounting					
DSE4B	XMT604	Project	0	0	0	8	6
Extra							1
Credit		1135/1100/1130					
		TOTAL	12	6	0	26	21 +
							1*

Semester I

Subject	Name	Classical Alge	bra				
Subject	Code	XMT101					
_	L –T –I	Р-С	C:P:A		L –T –P	Р-Н	
	3 - 1 -	0 - 4	4:0:0		3 - 2 - 0	0 - 5	
Course	Outcome	•			Doma C or	ain/Level r P or A	
CO1	Define arbitrary	set, the axio Cartesian produ	ms of set theory and to co uct of sets.	onstruct	C(Rem Unders	embering tanding)	
CO2	Define whether explain	relation, functi a function is about countable	on and apply properties to det one-one, many-one, onto or into and uncountable sets.	ermine and to	C (Ren Unders Applyin	nembering tanding ng)	
CO3	Explain Exponer	o find	C (Ren Unders	nembering tanding)			
CO4	Explain difference	ve C (Remembering& Applying					
CO5	CO5 Explain Number theory, Euler's functions Divisibility and Congruence relations and to state and apply Fermat's theorem and Wilson's theorem.						
COURS	E CONT	ENT					
UNIT I	Canad	ant of a set Finit	to and Infinite act. Arian of autom	ion C.		15 hrs	
	Conce	sianProduct of s	ets.	510n – Se	et Algebi	ra –	
UNIT II						15 hrs	
	Relati sets.	ons and their t	ypes – Functions and their types-C	Countabl	e and U	Incountable	
UNIT II	I					15 hrs	
	Binon	nial theorem for	any rational index - Exponential and	d Logari	ithmic Se	eries.	
UNIT IN	7					15 hrs	
	Summ series	nations of serie	s – summation by difference series.	es – Su	ccessive	difference	
UNIT V						15 hrs	
	Numb Divisi	per Theory: Prim bility and Cong	e Numbers and Composite Numbers ruence relations - Fermat's theorem	s - Euleı - Wilsoı	r's functi n's theor	ion - em.	
			L=45 hrs	T=30	hrs Tot	tal = 75 hrs	
TEXT B	OOKS						

- 1. S. Narayanan& T. K. ManickavasagamPillai, "Algebra", Vol. 1, S. Viswanathan Pvt. Ltd., Chennai, 1999. Unit 1, 2: Chapter 2.
- 2. S. Narayanan& T. K. ManickavasagamPillai, "Algebra", Vol. 2, S. Viswanathan Pvt. Ltd. Chennai, 2004. Unit 2: Chapter 2. Unit 5: Chapter 5.
- 3. S. Narayanan & T. K. ManickavasagamPillai, "Modern Algebra", Vol. 1,
- S. Viswanathan Pvt. Ltd. Chennai, 2004. Unit 3, 4: chapter: 3, 4, 5.

REFERENCES

- 1. Seymour Lipschutz, Set theory & Related Topics, Schaum'soutlines, 2nd Edition, Tata McGraw Hill, New Delhi, 2005.
- 2. Arumugam&Issac, Classical Algebra, New gamma Publishing house, Tirunelveli, 2003.

E-REFERENCES

1. www.nptel.ac.in

Table 1 : Mapping of CO with GA's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2	1	1	1	1	1	1	1
CO 2	3	2	1	1	1	1	1	1	1
CO 3	3	2	1	1	1	1	1	1	1
CO 4	3	2	1	1	1	1	1	1	1
CO 5	3	2	1	1	1	1	1	1	1
Total	15	10	5	5	5	5	5	5	5
Scaled Value	3	2	1	1	1	1	1	1	1

 $1-5 \rightarrow 1, \qquad 6-10 \rightarrow 2, \qquad 11-15 \rightarrow 3$

Cou	irse Co	ode	XMT102	L	Т	Р	С				
Cou	rse Na	me	mwptpay; jkpo;	3	0	0	3				
Pre	requis	ite		L	Т	Р	H				
(C:P:A		3:0:0	3	0	0	3				
		C	COURSE OUTCOMES	DC)MA N	II	LEVEL				
After t	he con	pletio	n of the course, students will be able to								
CO1	Recog Jiwrh Nghd	g nize(n u;e;jEl ;wtw;i	<i>milahsk; fhZjy;</i>)gy;NtWmwptpay; ;gq;fs;>fiyr; nrhy;yhf;fcj;jpfs; wj; jkpo;nkhop %yk; mwpe;Jnfhs;sy;.	Cog ve	gniti	Ren	nember				
CO2 CO2 Choose (njupTnra;jy;)tlnkhopNtu;r;nrhw;fs;>Gtpapay;>epytp ay; gw;wpg; goe;jkpo; ,yf;fpaq;fs; %yk; ve mwpe;Jnfhs;sy;.							nember				
CO3	<i>Descr</i> nra;jp	<i>Describe(tpsf;Fjy;</i>)njhy;fhg;gpak; %yk; mwptpay; Cogniti ve									
CO4	Apply (gad; Wfy;t	Cogniti ve Apply			ly						
CO5 kw;Wk; g;FFwpj;JnjspTngWjy;.							lyze				
myF	-1		mwptpay;jkpo; mwpKfk;				9				
mwptp jkpopy nra;jy; tlnkho	pay;jkp /; El;gk - fi pNtu;r:	o; - n c;.gilg; yr;nrh ;nrhw;	ghwpapay;>njhopy;El;gk;>kUj;Jtk;>cotpay Gg; gzp– nrhy;yhf;fcj;jpfs; - El;gkhdNtWgl w;fs; - ,e;jpankhopfSf;Fg; nghJthdfiyr; fiskpFjpahff; nfhz;bUj;jiyg; gad;gLj;Jjy;.	;. jk hLfis nrl	popy czu;e hw;fi	; mw ; Jnrh scUth	ptpay; - y;yhf;fk; f;Fjy; -				
myF	-2	<u>, </u>	gpwmwptpay; Jiwfs;				9				
Gtpapa Fwpg; mwptp	ay;>ep <u>y</u> gpLk; bay; jkp	ytpay; capup oOf;F <u>,</u>	gw;wpgoe;jkpo; ,yf;fpak; Fwpg;gpLk; ay;>kz;zpay; gw;wpambg;gilr; nra;jpfs; jopay; cj;jpfs; - tsu; jkpo;.	jfty;f - jk	fs; - po;]	njhy kUj;Jt	;fhg;gpak f; fy;tp				
myF	-3		gy;NtWfiyfspy; mwptpay;				9				
nkhopa kz;zpa fiy>m	apay; y;>Gtp wptpay	f papay;> v; - vd;	y;tp– fl;llf; fiyf;fy;tp– rKj >fzf;fpay; Mfpait ,ize;jfy;tp - ,f;fhyt gtw;wpd; tpsf;fq;fs;.	jhaf;f f; f	fy;tp- fy;tpg	Nra;il ;; nş	∢f;fy;tp– ghJepiy–				
myF	-4		mwptpay; jkpopy; rpWfijfspd; gq;F				9				
rpWfij -,yf;fzk; cUthf;Fk; cj;jpfs; - rpwe;jrpWfijfs; - rpWfij tiffs; - ey;yrpWfijcUthf;fk; - tuyhW– r%fk; - nkhopngau;g;Gkw;Wk; mwptpay; rpWfijfs;.											
myF	- 5		mwptpay; jkpopy; ehlfq;fspd; gq;F								

ehlfk; - ehlf ,yf;f rupj;jpuehlfk;>r%f	zk;> ,Utifehlfq;fs; ehlfk; - eifr;Ritehlfq;	 gbg;gjw;Fupaehl fs; - mnkr;#u; ehlfc 	lfk; - ebg;gjw;Fupaehlfk; - q;fs; - njhopy;Kiwehlfq;fs;.
LECTURE	TUTORIAL	PRACTICAL	TOTAL
45			45
Nkw;ghu;itEhy;fs			
1. mwptpay; jkpo;	- lhf;lu; th.nr. Foe;ijr	;rhkp	
2. tsu; jkpo; - ,jo;fs	•		
3. ,yf;fpatuyhW– rj	pWfijgw;wpaJ		
4vf:fpatuvhW-C	bipdk: gw:wpaJ		

CO Vers

us PO Mapping

				PSO					
	1	2	3	4	5	6	7	1	2
CO1		1							
CO2		1							
CO3		1					1		
CO4	1	2	2	1		1	2		
CO5	2	2	2	2		1	2		
Total	3	7	4	3		2	5		
Scaled Value	1	1	1	1		1	1		

 $1-5 \rightarrow 1 \quad 6-10 \rightarrow 2 \quad 11-15 \rightarrow 3$

3-Strong Correlation, 2-Medium Correlation, 1-Low Correlation, 0-No Correlation

COU	RSE CODE	XMT103	L	T	Р	С			
COU	RSE NAME	FUNDAMENTAL PHYSICS	3	1	0	4			
C:P:A	A	4:0:0	L	Т	Р	Η			
PREF	REQUISITE		3	1	0	4			
:									
CO1	Recall and harmonic mo	Explain the basic principle simple tion and circular motion	Cognitiv	'e R U	Remember, Understand, Analyze				
CO2	Understand time and m waves.	Cognitiv	'e R	Remember , Analyze					
CO3	Understand rigidity mod tension and e	Cognitiv	re U A	Analyze Inderstan Applicatio	, Id, On				
CO4	Recall the thermal phy conductivity constant.	Cognitiv	re R A	emembe Analyze Applicatio	r, , on				
CO5	Acquire knows be able to source; under propagation of	owledge on interference, diffraction; determine wavelength of mercury rstand LASER action and production; of fibre optics.	Cognitiv	re U	Understan evaluatio				
UNIT	ISimple Har	monic Motion and Circular Motion	:		9+3				
Time Comp Lissaj motio Banki	period - An position of two ous figures - n - Accelerati ng on curved t	nplitude - Phase - Spring mass sy simple harmonic motions along a stra Damping force - Damped harmonic on of a particle in a circle - Centrip racks - Motion of a bicycle and a car a	stem - S aight line a oscillator petal and round a ci	Simple 1 and at ri - Unifo centrifu rcle.	pendulur ght angl orm circu gal force	n - es - ular es -			
UNIT	IISoundUnif	form circular motion			9+3				
Classi law - Ultras and us	Classification of sound - Characteristics of musical sound - Loudness - Weber Fechner law - Decibel - Absorption co-efficient - Reverberation - Reverberation time - Ultrasonic waves - Properties - Production : Magnetostriction and Piezo-electric method and uses.								
UNIT		9+3							
Elasticity - Elastic constants - Bending of beams - Young's modulus by non-uniform bending - Torsion in a wire - Determination of rigidity modulus of torsional pendulum - Viscosity - Coefficient of viscosity by Poiseuelle's method - Stoke's law - Terminal velocity - Surface Tension - Molecular theory of surface tension - Excess pressure									

inside a drop and bubble - Surface te	nsion by drop weight	method.	
UNIT IVThermal Physics			9+3
Kinetic theory of gases - Basic post	ulates - Ideal gas equ	ation - Vande	rwaal's equation
of states - Laws of thermodynamics	s - Entropy - Change	e of entropy in	n reversible and
irreversible processes - Lee's disc m	nethod for conductivit	y of bad cond	ductor - Stefan's
law of radiation - Solar Constant - ter	mperature of the sun.		
UNIT V Optics			9+3
Interference in thin films - Air we	dge - Diffraction -	Theory of pla	ne transmission
grating (normal incidence only) - I	LASER - Population	inversion - P	'umping - Laser
action - Nd-YAG laser - CO ₂ laser -	Fibre optics - Princip	ple and propag	gation of light in
optic fibres - Numerical aperture and	acceptance angle.		
	LECTURE	TUTORIA	AL TOTAL
	45	15	60
		15	00
TEXT BOOKS			
1. A Sundaravelusamy, "Allied	Physics I", Priya Pub	olications, 200	9.
2. R. Murugesan, I B.Sc. "Ancil	lary Physics", S. Char	nd & Co., 201	0.
REFERENCES			
1. Saigal. S, "Sound", Chand &	Co., Delhi,1990		
2. Brijlal and Subramanian, "El	ements of properties	of matter", S.	Chand Limited,
1974.			
3. Brijlal and Subramanian, "He	at and Thermodynam	ics", S. Chand	l Limited,2008
4. Brijlal and Subramanian, "Op	tics", S. Chand Limit	ed,2012.	

4. Brijlal and Subramanian, "Optics", S. Chand Limited, 2012.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2	1	1	1	1	1		1
CO 2	3	2	1	1	1	1	1		1
CO 3	3	2	1	1	1	1	1		1
CO 4	3	2	1	1	1	1	1		1
CO 5	3	2	1	1	1	1	1		1
Total	15	10	5	5	5	5	5		5
Scaled Value	3	2	1	1	1	1	1		1

Mapping of COs with POs

 $1 - \overline{5} - 1 \quad 6 - 10 - 2 \quad 11 - 15 - 3$

3-Strong Correlation, 2-Medium Correlation, 1-Low Correlation, 0-No Correlation

CO	COURSE CODE COURSE NAME									C
XM	T104		FOUN	1	0	4				
С	P	Α					L	Т	P	Η
4	0	0					3	2	0	5
PR	EREQUI	ISITE:	Basic of	concept of A	Algebra and Trigonometr	у				
CO	URSE O	UTCO	MES:			·	.,			
Cou	irse outc	omes:				Domain	Lev	el		
CO	1:Define	and A	pply fu	ndamental t	heorem of algebra to	Cognitive	Ren	nemb	ering	
	find tl	ne relat	ion bet	ween roots a	and coefficients.		App	olying	5	
CO	2: Expla	in the	transfo	rmation of e	equation and to solve	Cognitive	Unc	lersta	nding	,
	the re	ciproca	l equat	ion using N	ewton's method.		App	lying	5	
CO	3:Expan	d the tr	rigonon	netric functi	ons and to find the	Cognitive	Unc	lersta	inding	,
	series	s of trig	onome	tric functior	ns by apply the related		App	olying	3	
	prope	erties to	Solvet	he problem	IS.					
CO	4: Expla	ain hyp	erbolic	and inverse	hyperbolic functions	Cognitive	Ren	nemb	ering	
	and t	o find t	he loga	arithm of the	e complex numbers.		App	olying	5	
CO	5: Expla	ain Sun	nmatio	ns of trigono	ometric series and apply	Cognitive	Ren	nemb	ering	
	prope	erties to	find t	heir related	problems.		App	olying	5	
UNI	TI									15
The	ory of Eq	uations	s: Funda	amental The	eorem of Algebra - Relati	ions between	roots	and		
coet	ficients -	Symm	etric fu	nctions of r	oots.					
		C F	· · ·				<u>.</u>		~	
Trar	isformati	on of E	quation	1s - Recipro	cal Equations - Newton's	s Method of I	JIVISC	ors - I	Jesca	rtes
rule	of signs	– Horn	er's Me	ethod.						1 =
UNI				ffinations	simmer as any famous Erro				~n	15
1 rig	onometry	y: Expa	insion c	of functions,	sinnx, cosnx, tannx- Exj	pansion of si	n-x ai	ia co	s-xint	erms
		057 - 11	ropertie		-related problems.					15
Hvn	erbolic fi	inction	s -Inve	rse hvnerho	lic functions- Logarithm	of Complex	Numł	ers		13
		unetion	is mve	ise nyperoo	ne functions Logarithm	or complex	, unit	C 15.		1 =
UNI		of the or		is series D		1				15
Sun	imations	of trige	nomeu	nc series- Pi	roperties and their related	i problems.			TO	-
				LECTUR	TUTORIAL				TO	ſAL
					15				==	
TEN		VC		OV	15				15	
1 6	Norovor	\mathbf{N}	гкм	anickawasac	amPillai "Alashra" Va	1 2 S Viewo	notho	n Du	+	
1. S. L	td Ch	annai 7	1. K. W	amekavasag	amirmai, Aigeora, vo	1.2, 5. v 15 w 2	IIIatiia	ΠΓV		
	$nit 1 \cdot Ch$	anter 6	Secs 6	51_61/ I	Init 2 · Chanter 6 Secs 6	15-630				
2 5	Naravar	apter 0. Jan & T	, sees e f k m	anickavasac	amPillai "Trigonometry	r'' S Viswan	athan	Pvt	I td	
2. D.	hennai 2	1001		ameravasag	, ann mai, Trigonometry	, 5 . v iswaii	atilali	1	Ltu.,	
U U	nit 3. Ch	anter 3	Unit	4: Chapter	4.5 Unit 5. Chapter 6					
REI	TERENC	E E	UIII		i, c Chin 5. Chapter 0.					
1. A	rumugan	n &Issa	c. "The	orv of Equa	ations. Theory of Number	rs and Trigon	omet	rv". 1	New	
g	amma Pu	ıblishin	ng hous	e, Tirunelve	li, 2011.			, , ·		

Mapping of COs with POs

	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9
CO 1	3	2	1	1	1	1	1		1
CO 2	3	2	1	1	1	1	1		1
CO 3	3	2	1	1	1	1	1		1
CO 4	3	2	1	1	1	1	1		1
CO 5	3	2	1	1	1	1	1		1
Total	15	10	5	5	5	5	5		5
Scaled	3	2	1	1	1	1	1		1
Value									

 $1-5 \rightarrow 1$ $6-10 \rightarrow 2$ $11-15 \rightarrow 3$

3-Strong Correlation, 2-Medium Correlation, 1-Low Correlation, 0-No Correlation

COURSE NAME	STUDY SKILLS		
COURSE CODE	XGE105		
L –Т –Р –С	C:P:A	L –T –P	–SS- H
1 - 0 - 0 - 1	0.6:0.2:0.2	1 - 0 - 0	-2-3
Course Outcome:		Domain	/Level
		C or P	or A
Identify different strateg	ies of reading and writing skills.	C(Remember))
Revise the library skills in	n their learning process.	A(Internalizin	g Values)
Applydifferent technique	es to various types of material such as a	C(Apply)	
novel, newspaper, poem,	drama and other reading papers.	C(Appry)	
Usevisual aids to support	verbal matters into language discourse.	C(Understand	ing)
Prepare to face the writt	en exam with confidence and without any		
fear or tension.		P(Guided Res	ponse
COURSE CONTENT		I	
INTRODUCTION TO	STUDY SKILLS		9 hrs
Learning Skills and Stra	tegies of Learning - Cognitive Study skill	s and physical	study skills.
Library skills (How to	use Library), familiarization of library f	acilities by the	librarian -
familiarization of basic c	ataloguing techniques, how to ransack the	library etc.	
REFERENCE SKILLS		2	9 hrs
How to use the library	facilities for research and to write assig	nments - how	to find out
reference books, articles,	journals and other e- learning materials - I	now to use a did	ctionary and
thesaurus.			
READING RELATED	STUDY SKILLS		9 hrs
Process of reading, var	ious types of reading materials and va	ried reading to	echniques -
familiarization to mater	ials written by various authors - features	s of scientific	writing and
familiarization to scientif	fic writing by renowned authors - note mak	ing skills.	8
WRITING RELATED	STUDY SKILLS	0	9 hrs
Process of writing - char	acteristics of writing - discourse analysis -	use of visual ai	ds. and note
making and note taking s	skills.		,
EXAM PREPARATIO	N SKILLS		9 hrs
Anxiety reduction skills	- familiarization with various types of exan	n / evaluation te	chniques
etc	71		1
L=	15hrs; T=0 hrs;SS = 30hrs; Total = 4	45 hrs	
TEXT BOOKS			
1. Narayanaswamy,	"Strengthen Your Writing", Orient Longma	n, New Delhi, 2	2006
2. Sasikumar, "Wri	ting with A Purpose", ChampaTickoo, Oxf	ord University	Press.2009
3. Freeman, Sarah,"	StudyStrategies", New Delhi: Oxford University	ersity Press, Ne	W
Delhi 1979.			
4. Peter Viney,"Str	eamline English: Destinations", Oxford Un	niversity Press,	1992.
REFERENCES			

- 1. Susan Fawcett, "Evergreen: A Guide to Writing with Readings" Paperback 2013
- 2. Raymond Murphy,"English. Grammar in Use A reference and practice book for Intermediate", Third Edition, OUP, New Delhi, 2010
- 3. KiranmaiDutt and Geetha Rajeevan,"*A Course in Listening and Speaking* I & II", New Delhi: Foundation Books, Cambridge House, 2006.
- 4. David Bolton, "English Grammar in Steps", Richmond Publishing, New Delhi,2000

	GA 1	GA2	GA3	GA4	GA5	GA6	GA7	GA8	GA9	GA10	GA11	GA12
CO1	0	0	0	0	0	0	0	1	1	2	0	0
CO2	0	0	0	0	0	0	0	0	0	2	0	0
CO3	0	0	0	0	0	0	0	0	0	1	0	0
CO4	0	0	0	0	0	0	0	0	0	0	1	0
CO5	0	0	0	0	0	0	0	1	1	1	1	0
Total	0	0	0	0	0	0	0	2	2	6	2	0
Scaled value	0	0	0	0	0	0	0	1	1	2	1	0

Table 1 : Mapping of CO with GA's

1-5= 1, 6-10 = 2, 11-15= 3

COURSE CODE	XUM106		L	Τ	Р		C		
COURSE NAME	Human Ethics, Values, Right Equality	s and Gender	1	0	0		1		
PREREQUISITES	Not Required	L T P SS							
C:P:A	1:0:0.0 1 0 0 E OUTCOMES Domain Loval								
COURSE OUTCOMES	5	Domain	Level						
C01	Relate and Interpret the human ethics and human relationships	Cognitive	Rei Un	neml dersta	ber, and				
CO2	Explain and Apply gender issues, equality and violence against women	Cognitive	Un Ap	dersta ply	and,				
~~~	Classify and Develop the	Cognitive &	An	alyze					
C03	identify of women issues and challenges	Affective	Red						
CO4	<b>Classify</b> and <b>Dissect</b> human rights and report on violations.	Cognitive	Un	derst	and, A	Analyz	æ		
CO5	List and <i>respond</i> to family values, universal brotherhood, fight against corruption by common man and good governance.	Cognitive & Affective	Reı	neml	ber, F	Respon	d		
UNIT I HUMAN	ETHICS AND VALUES	k				7			
HUMAN ETHICS ANI Human Ethics and value service, Social Justice, D Integrity and Competen development - Valuing T Self-Confidence, charact	<b>DVALUES</b> es - Understanding of oneself Dignity and worth, Harmony in H nce, Caring and Sharing, Ho Time, Co-operation, Commitment er building and Personality.	and others- mo numan relations onesty and Co t, Sympathy and	otive: hip: urag d Er	s and Fami e, V npath	l nee ly an /HO ³ iy, Se	ds- So d Soci s hol elf resp	ocial lety, istic bect,		
UNIT IIGENDER EQU	JALITY					9			
Gender Equality - Ge empowerment. Status of HDI, GDI, GEM. Contr Empowerment. UNIT IIIWOMEN ISS	nder Vs Sex, Concepts, def Women in India Social, Econo ibutions of Dr.B.R. Ambedkar, <b>UES AND CHALLENGES</b>	inition, Gender omical, Educatic Thanthai Periy	eq on, H ar aı	uity, lealth nd Pl	equ , Em nule 1	ality, ploym to Wor <b>9</b>	and ent, men		

Women Issues and Challenges- Female Infanticide, Female feticide, Violence against women, Domestic violence, Sexual Harassment, Trafficking, Access to education, Marriage. Remedial Measures – Acts related to women: Political Right, Property Rights, and Rights to Education, Medical Termination of Pregnancy Act, and Dowry Prohibition Act.

#### UNIT IV HUMAN RIGHTS

9

Human Rights Movement in India – The preamble to the Constitution of India, Human Rights and Duties, Universal Declaration of Human Rights (UDHR), Civil, Political, Economical, Social and Cultural Rights, Rights against torture, Discrimination and forced Labour, Rights and protection of children and elderly. National Human Rights Commission and other statutory Commissions, Creation of Human Rights Literacy and Awareness. - Intellectual Property Rights (IPR). National Policy on occupational safety, occupational health and working environment.

UNIT VGOOD GOVERNANCE AND ADDRESSING SOCIAL ISSUES11Good Governance - Democracy, People's Participation, Transparency in governance and audit,<br/>Corruption, Impact of corruption on society, whom to make corruption complaints, fight against<br/>corruption and related issues, Fairness in criminal justice administration, Government system of<br/>Redressal. Creation of People friendly environment and universal brotherhood.11

	LECTURE	SELF STUDY	TOTAL
	15	30	45
-			

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- 2. Bajwa, G.S. and Bajwa, D.K. "Human Rights in India: Implementation and Violations" (New Delhi: D.K. Publications, 1996).
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- 4. Jagadeesan. P., "Marriage and Social legislations in Tamil Nadu", Chennai: Elachiapen Publications, 1990).
- 5. Kaushal, Rachna, "Women and Human Rights in India" (New Delhi: Kaveri Books, 2000)
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- 9. Veeramani, K. (ed) Periyar Feminism, (Periyar Maniammai University, Vallam, Thanjavur: 2010).
- 11.Planning Commission report on Occupational Health and Safety
- http://planningcommission.nic.in/aboutus/committee/wrkgrp12/wg_occup_safety.p
- 11. Central Vigilance Commission (Gov. of India) website: http://cvc.nic.in/welcome.html.
- 12. Weblink of Transparency International: https://www.transparency.org/
- 13. Weblink Status report: https://www.hrw.org/world-report/2015/country-chapters/india

# Mapping of COs with Pos

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1								2				
CO2								3	1			
CO3								2				
CO4								3		2		
CO5								3	2	2		2
Total		2						13	3	4		2
Scaled Value		1						3	1	1		1

 $1-5 \rightarrow 1, \quad 6-10 \rightarrow 2, \quad 11-15 \rightarrow 3$ 

# Semester II

Course Name	SPEECH AND BUSINESS COMMUNIC	ATION
Course Code	XGE201	
L –Т –Р –С	C:P:A	L –T –P-H
3 - 0 - 0 - 3		3-0-0-3
Course Outcome		Domain
		C or P or A
CO1	<b>Define</b> and describe how to make effective speeches academically and in social situations.	C(Remember)
CO2	<b>Identify</b> the forms of language used in different speeches and how to listen actively and critically.	C(Understand)
CO3	<b>Ability</b> to incorporate the modern style of writing in Business Communication	C(Create)
CO4	Producethepropertoneoflanguagerequiredinwritingbusinesscommunication	C(Understand)
CO5	<b>Apply</b> discourse features in business communication, propriety and exactness in language.	C(Understand)
COURSE CONTENT		
UNIT I	PUBLIC SPEAKING	9 hrs
	Introduction to public speaking; functions skills and competencies needed for succ importance of public speaking skills in every of business, social, private, and all other place	of oral communication; sessful speech making; yday life and in the field ces of group work
UNIT II	TYPES OF SPEECHES	9 hrs
	Various types of Speeches: manuscript, in and extemporaneous speeches; analyzin occasion; Developing ideas; finding and usin Developing speech out line; Organization of development and conclusion; language use speeches; Adapting the speech structur paralinguistic features: tone, accent, rhythm,	npromptu, rememorized ng the audience and ng supporting materials; of Speech; introduction, ed in various types of ures to the Audience; pause and volume etc.
UNIT III	BUSINESS COMMUNICATION	9 hrs
	Introduction to business communication; m the style of writing letters, memos and rep block letters, full block letters, simplified let	nodern developments in orts: block letters, semi ters etc.

UNIT IV	WRITING SKILLS	9 hrs					
	The language/tone used in memos/min letters/assignments; art of writing E-mail etc	utes/telephone memos/					
UNIT V	GRAMMAR USAGE & REPORT WRITING	9 hrs					
The use of language: active and passive voice; the use of struct discourse features, propriety, accuracy, exactness, & other eler of language used in these writings; the format of various typ Reports/ projects etc.							
	L ·	- 45 T-0 Total - 45 hrs					
TEXT BOOKS							
1. Narayanaswam 1992	y V.R.,"Strengthen Your Writing", Orient	Longman, NewDelhi,					
2. Ghosh, R N;" A	A Course in written English", Oxford Press, N	ew Delhi, 2000S					

- 3. Jaya Sasikumar and ChampaTickoo,"Writing With A Purpose", Oxford University Press, Paper Back 1995
- 4. Freeman, Sarah: "Study Strategies:, New Delhi: Oxford University Press, 1979. 13.
- 5. Paul Gunashekar M.L. Tickoo, "Reading for Meaning", Ltd. Sultan Chand &Company, 2000

					P	C	РО										
	1	2	3	4	5	6	7	8	9	10	1	2					
CO1	0	2	0	0	0	0	0	0	0	0	0	0					
CO2	0	0	2	0	0	0	0	0	0	0	0	0					
CO3	0	0	0	2	0	0	0	0	0	0	0	0					
CO4	0	0	0	0	0	0	0	2	0	0	0	0					
CO5	0	0	0	0	0	0	0	0	0	2	0	0					
Total	0	2	2	2	0	0	0	2	0	2	0	0					
Scaled value	0	1	1	1	0	0	0	1	0	1	0	0					

# Mapping of COs with POs

 $1 - 5 \rightarrow 1, \quad 6 - 10 \rightarrow 2, \quad 11 - 15 \rightarrow 3$ 

0 - No relation, 1 - Low relation, 2 - Medium relation, 3 - High relation

Course	Name	ENVIRONME	ENTAL STUDIES			
Course	e Code	XES202				
	L –T –P	-C	C:P:A		L –T –P –H	
	2 - 1 - 0	-2			2 - 1 - 0 - 3	
Course	Outcome				Domain	
001		.1	<u> </u>		C or P or A	
COI	Describe	the significan	ce of natural resources	and	C(Remember,	
000	<i>explain</i> anthi	ropogenic impac	ts.	- 4 <b>1</b>	Understand)	
CO2	<b>mustrate</b> the	e significance of	t ecosystem, biodiversity and na	atural	C(Understand)	
<b>CO3</b>	geo bio cher	for the second second	maintaining ecological balance.		$C(\mathbf{D} \circ \mathbf{m} \circ \mathbf{m} \mathbf{h} \circ \mathbf{r})$	
005	nollution	ndrogognizethe	disaster phonomenon	najor	(Remember)	
CO4	<b>Explain</b> the		a policy dynamics and practice	a tha	A(Receiving) C(Understand	
004	control man	sures of global is	c, policy dynamics and practic	e the	C(Ulluerstallu,	
CO5	<b>B</b> ecognize t	he impact of por	substion and the concept of variou		Allalyse)	
05	welfare proc	the impact of pop	themodern technology towards	us	C(Understand,	
	environment	tal protection	themodern teenhology towards		Apply)	
	environmen					
COUR	SE CONTEN	NT				
UNIT	I INTRO	DUCTION T	O ENVIRONMENTAL ST	UDIES	101	
	AND EN	NERGY			12015	
	Definition resource extraction resource conflicts exploitate case sturt agricultur problem energy for energy degradate an indive for susta	on, scope and s: Use and over on, mining, dams s: Use and over- s over water, dar tion, environmen idies – Food re- ure and overgraz s, water logging needs, renewable sources, case s tion, man induce idual in conserv	importance – Need for public ver-exploitation, deforestation, s and their effects on forests and utilization of surface and ground ns-benefits and problems – Mine ntal effects of extracting and us esources: World food problems zing, effects of modern agricult g, salinity, case studies – Energy e and non-renewable energy so tudies – Land resources: Land ed landslides, soil erosion and de ation of natural resources – Equ	c aware case st l tribal j l water, eral resc ing mir s, chan ure, fer gy resou urces, u l as a esertific itable u	eness – Forest tudies. Timber people – Water flood, drought, ources: Use and neral resources, ges caused by tilizer-pesticide urces: Growing use of alternate resource, land ation – Role of use of resources	
UNIT	II ECOSY	STEMS AND I	BIODIVERSITY		7 hrs	
	Concept	of an ecosystem	m - Structure and function of a	in ecosy	ystem – Producers,	
	consumers and decomposers – Energy flow in the ecosystem – Ecological succession – Food chains, food webs and ecological pyramids – Introduction, types, characteristic features, structure and function of the (a) Forest ecosystem (b) Grassland ecosystem (c) Desert ecosystem (d) Aquatic ecosystem (ponds, streams,					
	lakes, ri	vers, oceans, est	uaries) – Introduction to Biodive	rsity –	Definition: genetic,	

	species and ecosystem diversity - Conse	ervation of biodiversity:	: In-situ and Ex-situ						
LINIT T	I ENVIRONMENTAL POLITION		10 hrs						
	Definition – Causes effects and control	ol measures of (a) Air	pollution (b) Water						
	pollution (c) Soil pollution (d) Marine	e pollution (e) Noise po	ollution (f) Thermal						
	pollution (g) Nuclear hazards – Solid	d waste management: (	Causes, effects and						
	control measures of urban and indus	strial wastes – Role c	of an individual in						
	prevention of pollution – Pollution ca	ase studies – Disaster i	management: flood,						
	earthquake, cyclone and landslide.								
UNIT I	<b>SOCIAL ISSUES AND THE ENVIRG</b>	ONMENT	10 hrs						
	Urban problems related to energy – V	Water conservation, rai	n water harvesting,						
	watershed management – Resettlement	t and rehabilitation of p	beople; its problems						
	and concerns, climate change, global v	warming, acid rain, ozo	one layer depletion,						
	nuclear accidents and holocaust, Wasteland reclamation – Consumerism and waste								
	Act Water (Prevention and control of Pollution) Act Wildlife Protection Act								
	Forest Conservation Act – Issues in	volved in enforcement	t of environmental						
	legislation – Public awareness.								
UNIT V	HUMAN POPULATION AND THE I	ENVIRONMENT	6 hrs						
	Population growth, variation among a	nations – Population e	explosion – Family						
	welfare programme – Environment an	nd human health – Hur	man rights – Value						
	education - HIV / AIDS – Women	and Child welfare pro-	ogramme- Role of						
	Information Technology in Environment	t and human health – Ca	ase studies.						
LECTU	RE TUTORIAL PR	RACTICAL TO	OTAL						
<u>30</u>	15   -	45	5						
	OOKS Giller T. C. Jr. "Environmental Science", W	a darra ath Dublishin a Ca	LIG A 2000						
	filler I.G. Jr., Environmental Science, wa	1. Miller T.G. Jr., "Environmental Science", Wadsworth Publishing Co, USA, 2000.							
2.	2. Townsend C., Harper J and Michael Begon,"Essentials of Ecology", Blackwell Science,								
3. 7	ownsend C., Harper J and Michael Begon,".	'Essentials of Ecology",	, USA, 2000. Blackwell Science,						
	ownsend C., Harper J and Michael Begon," JK, 2003 Privedi R.K and P.K.Goel, "Introduction to A	'Essentials of Ecology'', Air pollution''. Techno S	Blackwell Science,						
I	ownsend C., Harper J and Michael Begon," JK, 2003 rivedi R.K and P.K.Goel, "Introduction to A ublications, India, 2003.	'Essentials of Ecology'', Air pollution'', Techno S	, USA, 2000. Blackwell Science, Science						
4. '	ownsend C., Harper J and Michael Begon," JK, 2003 Frivedi R.K and P.K.Goel, "Introduction to A ublications, India, 2003. Disaster mitigation, Preparedness, Recovery	'Essentials of Ecology'', Air pollution'', Techno S y and Response'', SBS P	Blackwell Science, Gcience ublishers &						
4. ' 1	ownsend C., Harper J and Michael Begon," JK, 2003 Privedi R.K and P.K.Goel, "Introduction to A ublications, India, 2003. Disaster mitigation, Preparedness, Recovery Distributors Pvt. Ltd, New Delhi, 2006.	'Essentials of Ecology'', Air pollution'', Techno S y and Response'', SBS P	Blackwell Science, Science ublishers &						
4. ' 1 5. 1	ownsend C., Harper J and Michael Begon," JK, 2003 rivedi R.K and P.K.Goel, "Introduction to A ublications, India, 2003. Disaster mitigation, Preparedness, Recovery Distributors Pvt. Ltd, New Delhi, 2006. Sutterworth Heinemann, "Introduction to Inte	'Essentials of Ecology'', Air pollution'', Techno S y and Response'', SBS P ternational disaster mana	Blackwell Science, Science ublishers & agement",2006.						
4. ' 1 5. 1 6. (	ownsend C., Harper J and Michael Begon," JK, 2003 Privedi R.K and P.K.Goel, "Introduction to A ublications, India, 2003. Disaster mitigation, Preparedness, Recovery Distributors Pvt. Ltd, New Delhi, 2006. Butterworth Heinemann, "Introduction to Inter- bilbert M.Masters, "Introduction to Environ	Essentials of Ecology", Air pollution", Techno S y and Response", SBS P ternational disaster mana mental Engineering and	Blackwell Science, Blackwell Science, Science Ublishers & agement",2006. Science", Pearson						
1 4. ' 5. 1 6. ( 1	ownsend C., Harper J and Michael Begon," JK, 2003 Privedi R.K and P.K.Goel, "Introduction to A ublications, India, 2003. Disaster mitigation, Preparedness, Recovery Distributors Pvt. Ltd, New Delhi, 2006. Butterworth Heinemann, "Introduction to Inte Bilbert M.Masters, "Introduction to Environ Education Pvt., Ltd., Second Edition, New D	'Essentials of Ecology'', Air pollution'', Techno S y and Response'', SBS P ternational disaster mana mental Engineering and Delhi, 2004.	Blackwell Science, Blackwell Science, Science Ublishers & agement",2006. Science", Pearson						
4. ' 1 5. 1 6. 0 1 <b>REFER</b>	ownsend C., Harper J and Michael Begon," JK, 2003 Privedi R.K and P.K.Goel, "Introduction to A ublications, India, 2003. Disaster mitigation, Preparedness, Recovery Distributors Pvt. Ltd, New Delhi, 2006. Butterworth Heinemann, "Introduction to Intro- bilbert M.Masters, "Introduction to Environ Education Pvt., Ltd., Second Edition, New D ENCES	'Essentials of Ecology'', Air pollution'', Techno S y and Response'', SBS P ternational disaster mana mental Engineering and Delhi, 2004.	Blackwell Science, Blackwell Science, Science Ublishers & agement",2006. Science", Pearson						
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- 2. https://www.free-ebooks.net/ebook/Introduction-to-Environmental-Science
- 3. https://www.free-ebooks.net/ebook/What-is-Biodiversity
- 4. https://www.learner.org/courses/envsci/unit/unit_vis.php?unit=4
- 5. http://bookboon.com/en/pollution-prevention-and-control-ebook

# Mapping of CO's with PO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1							2	3	3
CO2							1	2	2
CO3							2	3	3
CO4							3	3	3
CO5							2	2	3

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$ 

Course	e Nam	ne	<b>MODERN PH</b>	IYSICS				
Course	e Code	e	XMT203					
	L-T	- <b>P</b> - <b>C</b>		C:P:A	L –T –I	Р-Н		
	3-1-	0-4		2.8:0.4:0.8	3-1-0	) – 4		
Course	e Outc	come			Domai	n/Level		
	_				C or I	P or A		
CO1	Defi	ne, exp	<b>lain</b> Atom mod	els and demonstrate Franck an	d C(Rememb	C(Remember,		
	Hertz	z metho	od; discuss the	phenomenon of Excitation an	d Understand	Understand)		
	ioniz	ation po	otentials.		P(Mechani	sm)		
CO2	Acqu	ire soli	d knowledge of	crystal Analyzenumber of atom	s, C(Analyze	,		
	atom	nic radiu	is coordination	number in crystal structure an	d Apply)			
COA	deter	rmine d	spacing in cubic	lattice using Miller indices.	1 0(11 1 4	1\		
CO3	Und	erstand	elementary part	icle, <b>explain</b> radioactive decay an	d C(Understa	ind)		
	T1SS1C	on, iusio	on.		A(Receive)	)		
<b>CO4</b>	Iden	tify the	basics of elect	tric field, magnetic field, <b>explai</b>	n C(Rememb	ber)		
	Amp	ere's ci	rcuital law and H	Faraday's law.	<u> </u>	,		
CO5	Und	erstand	the fundamenta	ll phenomena in electronics and	C(Understa	und)		
	desci	ribe the	working princip	ple and application of IC's.	A(Receive)	)		
COUR	SE CO	ONTEN	T					
UNIT	I		7+3 hrs					
Atom models - Somerfield and Vector atom models - F					Electron spi	n quantum		
	n	numbers	- Pauli's excl	usion principle - Excitation and	d ionization r	otentials -		
	E	Experim	ental determinat	ion - Franck and Hertz method.	r			
UNIT	II	-	(	CRYSTAL PHYSICS		8+3 hrs		
	T	attice -	Unit cell - Bray	ais lattice - Lattice planes - Mille	r indices - 'd' s	nacing in a		
		subic la	ttice - Calculati	ion of number of atoms per un	it cell - Atom	ic radius -		
	C	Coordina	ation number - P	Packing factor for SC, BCC, FCC	and HCP struc	tures.		
TINIT	ш			NUCLEAD PHYSICS		10 + 3 hrs		
UNIT	111			NUCLEAR THISICS		10+3 1118		
	N	Nucleus	- Nuclear size -	Charge - Nuclear energy - Mass	defect - Bindin	ng energy -		
	F	Radioact	tivity - Alpha, B	eta, Gamma radiation - Law of I	adioactive dec	ay - Decay		
	c	constant	- Half life - Mea	an life - Fission and Fusion - Eler	nentary particle	es and their		
	c	classifica	ations.					
UNIT	IV E	ELECTH	RICITY AND M	IAGNETISM		10+3 hrs		
	K	Kirchhot	ff's laws -Wh	eatstone network - Condition	for bridge	balance -		
	p	otentio	meter - interna	l resistance of a cell and ther	mo emf meas	surement -		
	Ň	Magneti	c field due to a	current carrying conductor - Biot	Savart's law -	field along		
	t	he axis	of a coil - For	ce on a current carrying conduc	tor in a magn	etic field -		
	A	Ampere'	s circuital law -	Faraday's law - Maxwell equation	is in free space			
UNIT	V F	ELECT	RONICS			10+3 hrs		

## Course Name CALCULUS

Basic electronics - Junction diode - Voltage regulation - Zener diode - Junction
transistor (PNP) - Digital electronics - AND, OR, NOT gates NAND and NOR
universal gates – Boolean Algebra- De Morgan's theorem - verification -
Elementary ideas of IC's.

L - 45 T-15 Total - 60 hrs

## TEXT BOOKS

1. Allied Physics I - A Sundaravelusamy, Priya Publications, 2009.

2. I B.Sc. Ancillary Physics - R Murugesan, S. Chand & Co., 2010

## REFERENCES

1. Introduction to Solid State Physics - C Kittel - 8th edition, Wiley Eastern Ltd., 2005.

- 2. Electricity and Magnetism Narayana Moorthy and Nagarathinam
- 3. Modern Physics by R Murugesan, S. Chand & Co., 2004
- 4. Digital principles and their applications Malvino and Leach, Tata Mc Graw Hill, 2010.

## Mapping of CO's with PO's

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1							2	3	3
CO2							1	2	2
CO3							2	3	3
CO4							3	3	3
CO5							2	2	3
Total							10	13	14
Scaled Value							2	3	3

 $1-5 \rightarrow 1$ ,  $6-10 \rightarrow 2$ ,  $11-15 \rightarrow 3$ 

0 – No relation, 1 – Low relation, 2 – Medium relation, 3 – High relation

Course	e Code XMT204						
	L - T - P - C	C:P:A	L –T –P –H				
	4-1-0-5	5:0:0	4 - 2 - 0 - 6				
Cours	e Outcome		Domain				
<u>CO1</u>	<b>Find</b> there dive of an eventu	no and contra of competence webstee	C or P or A				
COI	and to <b>Apply</b> Successi theorem	ve Differentiation and Leibnitz	C(Remembering, Applying)				
CO2	<b>Explain</b> Properties of defi Reduction formulae and E	nite integrals, Integration by parts, gernoulli's formula.	C(Understanding)				
CO3	<b>Evaluate</b> double integral coordinates	in both Cartesian and polar	C(Understanding, Applying)				
CO4	<b>Explain</b> and <b>evaluate</b> Bet relations.	a and Gamma integrals and their	C(Understanding)				
CO5	Find Jacobian, Change of variable in the case of two variables and three variables, - Transformation from Cartesian to polar coordinates.C(Remembering)						
	KSE CONTENT		101				
UNIT							
	applications - Curvatu Evolutes and Involut	re - Radius of Curvature and Centre es.	of Curvature -				
UNIT	II		18 hrs				
	Integral Calculus: Pro Reduction formulae -	perties of definite integrals - Integra Bernoulli's formula.	tion by parts –				
UNIT III			18 hrs				
	Integration as limit of integral- Evaluation of	an infinite sum. Multiple Integrals: f double integral - double integral in	Definition of double polar coordinates.				
UNIT IV			18hrs				
	Triple integrals. Improrelations.	pper Integrals: Beta and Gamma inte	grals and their				
UNIT	V		18hrs				
	Change of Variables: . and three variables - T Transformation from (	Jacobian - Change of variable in the ransformation from Cartesian to po Cartesian to spherical polar coordina	case of two variables lar coordinates - ntes.				
		L =60 hrs T =	<b>30 hrs</b> Total = $90$ hrs				
TEXT	BOOKS						
1. S. N	arayanan & T. K. Manicka	vasagam Pillai, Calculus, Vol.1. S. V	√ıswanathan Pvt. Ltd.,				
2 S N	ai, 2004. Unit 1: Chapter III Jaravanan & T. K. Maniekov	I, Unapter A Secs 10.2.1-10.3.1 Vasagam Pillai Calculus Vol 2 S V	Viswanathan Dut				
2.5. N	hennai 2004 Unit 2. Chant	er 1 Secs 1 1 1-1 15 1 Unit 3. Chan	viswanaman rvi. iter I Secs 1 15 2				
Chapte	er 5. Secs $5.1-5.3.2$ . Unit 4	: Chapter 5 Secs 5.4-5.5.4 Chapter 7	7 Secs 7.1.1-7.5.				
Unit 5:	Chapter 6	1 ··· · · · · · · · · · · · · · · · · ·	······				

## REFERENCES

- 1. George B. Thomas, JR &Ross L. Finney, Calculus and Analytic Geometry, Sixth edition,
  - Narosa Publishing House, New Delhi, 1986.
- 2. Arumugam & Isaac, Calculus, Vol.1&2, New Gamma Publishing House, 1999.

## Table 1 : Mapping of COs with POs

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

 $1-5 \rightarrow 1$ ,  $6-10 \rightarrow 2$ ,  $11-15 \rightarrow 3$ 

0 – No relation, 1 – Low relation, 2 – Medium relation, 3 – High relation

Course	Name	SEQUENCES AND SERIES						
Course	e Code	XMT205						
L –1	С-Р-С	C:	P:A	L –T	`-Р-Н			
4- 1	- 0- 5	4:0	.5:0.5	4 – 2	2-0-6			
Course	Outcome			Do	main			
				C or	P or A			
CO1	<b>Explain</b> B	ounded Sequences, Mono	tonic Sequences,	C(Unders	tanding)			
	Convergen	nt Sequence, Divergent Se	equences, Oscillating	0(0114415	(11101118)			
~~~	sequences			G (II I				
CO2	Explain B	Schavior of Monotonic fui	nctions	C(Unders P(Guidad	tanding)			
CO3	Evoloinau	beaquances limit points	and Cauchy sequences	C(Unders	tonding)			
05	Explainsu	iosequences, mint points	and Cauchy sequences	C(Unders	tanunig)			
CO4	Apply cor	nparison test to infinite se	eries to test the	C(Unders	tanding			
	convergen	ce and to Explain Cauch	y's general principal of	Applying)			
005	convergen		N 1 9	Q(A 1 '				
005	Apply D Alembert's ratio test, Cauchy's root test to test C(Applying)							
	Abaaluta	The and to test the series	Alternating Series and	A(Receiv	ing)			
COUD	Absolute C	Convergence of the series						
	SE CONTI	ENT			10.1			
UNII	I Seque	nces		G	<u>18 nrs</u>			
	Seque	led Sequences – Monoton	ic Sequences – Convergent	Sequence	– Divergent			
UNIT	I Algel	ora of Limits			18 hrs			
	Behav	ior of Monotonic function	18.					
UNIT	II Some	theorems on limits			18 hrs			
	Subsec	quences – limit points: Ca	uchy sequences.					
UNIT	V Serie	S	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,		18 hrs			
	Infinit	e series – Cauchy's gener	al principal of convergence	e – Co	omparison –			
	test the	eorem and test of converg	ence using comparison test	(compari	son test			
	statem	ent only, no proof).		_				
UNIT Y	V Test o	f convergence using D A	lembert's ratio test		18 hrs			
	Cauch	y's root test – Alternating	s Series – Absolute Converg	gence (Stat	ement only			
	for all	tests).						
LECT	URE	TUTORIAL	TOTAL					
60		30	90					
ТЕХТ	BOOKS							
1.Dr.S	Arumugam	&Mr.A.Thangapandi Isa	ac Sequences and Series –	NewGamm	а			
Publish	ing House -	- 2002 Edition.			-			
Unit I :	Chapter 3	Sec. 3.0 – 3.5 Page No :	39-55					
Unit II	: Chapter 3	: Sec. 3.6, 3.7 Page No:5	6 - 82					
Unit III	: Chapter 3	3 : Sec. 3.8-3.11, Page No	:82-102					

Unit IV : Chapter 4 : Sec. (4.1 & 4.2) Page No : 112-128.

Unit V : Relevant part of Chapter 4 and Chapter 5: Sec. 5.1 & 5.2Page No:157-167.

REFERENCES

1. Prof. S. Surya Narayan Iyer, "Algebra", Margham publications, Chennai, 2002.

2. Prof. M.I.Francis Raj, "Algebra", Margham publications, Chennai, 2004.

Mapping of COs with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled	3	2		1	1		1	1	1
value									

 $1-5 \rightarrow 1, \quad 6-10 \rightarrow 2, \quad 11-15 \rightarrow 3$

Course Name FUNDAMENTAL PHYSICS (PRACTICAL - I)								
Course	e Code	XMT206						
Prereq	uisite			-				
L –]	Г –Р –С	C:P:A		L	, —Т —Р —Н			
0-	0 - 3- 2		0.4-1-0.6		0-0-3-3			
Course	e Outcome:		Dor	nair	1			
			(C or]	P or	A)			
CO1	Recall the	eusageof laboratory instruments and	Cognitive	Un	derstand			
	measure	the Young's modulus of Non – uniform	Psychomotor	Me	echanism			
000	pending		0					
002	Explaina	of a wire	Affective	Sei	luina			
CO3	Moninul	of a will	Cognitive	Va An	nly			
005	wire usin	a Air wedge	Psychomotor	Ар Ме	pry chanism			
CO4	Affective				ganization			
004	Compar	eandexplain the Calibration of voltmeter	Psychomotor	Set	guillzation			
CO5	D "		Psychomotor	Per	rception			
	Describe the Band gap of the semiconductor Affective Or				ganization			
List of	Experimen	nts			Hours			
1 Non-uniform Bending - Pin and Microscope Method								
2 Torsional pendulum - Determination of rigidity modulus of a wire 3								
3	3 Co-efficient of viscosity of Liquid using graduated burette 3							
4	Spectromet	ter - Refractive index of solid prism (A, D	and µ)		3			
5	Post Office	Box - Determination of Band gap of a se	mi-conductor		3			
6	Air wedge	- determination of thickness of thin wire			3			
7	Potentiome	eter - Calibration of voltmeter			3			
8	LASER gr	ating - Determination of wavelength of I	LASER and size	of	3			
0	the micro-p	particle						
9	Air wedge-	Determination of thickness of thin wire			3			
10	AND, OR,	and NOT logic gates - verification of trut	h table		3			
11	Potentiome	eter – Calibration of voltmeter or ammeter			3			
12	Laser grati micro parti	ng – determination of wave length of la cle	ser and size of t	he	3			
13	Semi condu	uctor of diode – forward and reverse bias c	haracteristics		3			
14	Meterbridg wire	ge – Determination of resistance and spec	ific resistance of	fa	3			
TEXT	BOOKS							
1.BSc2. An ACentral3. A TeSemest	Practical Ph Advanced C l Book Ager ext Book of er 1 - Physi	ysics, C. L. Arora, (S. Chand) ourse in Practical Physics, D. Chattopadhy ncy) Advanced Practical Physics, S. Ghosh, (N cs (Honours) Theory Paper	ay and P. C. Rak	shit. Age	, (New ency) 7			

Semester 1 - Physics (Honours) Theory Paper.

4. Shukla R. K. and Anchal Srivastava, Practical Physics, New Age International (P) Ltd, Publishers, 2006.

5. Arora C. L., B.Sc Practical Physics, S. Chand and Company Ltd, 2007.

REFERENCES

1. Squires G. L., Practical Physics, 4 th Edition, Cambridge University Press, 2001.

2. Halliday D., Resnick R. and Walker J., Fundamentals of Physics, 6th Edition, John Wiley and Sons, 2001.

3. Jenkins F.A. and White H.E., Fundamentals of Optics, 4th Edition, Mc Graw Hill Book.

Mapping with Programme Outcomes

COs	PO ₁	PO ₂	PO ₃	PO ₄	PO ₅	PO ₆	PO ₇	PO ₈
CO ₁	1	1	1		2	1	1	1
CO ₂	2	3	2	1	2	2	1	2
CO ₃	1	3	2		1	2	2	2
CO ₄	1	1	2		1	2	1	1
CO5	2	3	1		2	2	2	1
Total	6	11	8	1	8	9	7	7
Scaled Value	2	3	2	1	2	2	2	2

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

Semester III

COURS	SE COD	E	COURSE NAME		L	J T		Р	C			
XMT30)1		INTRODUCTION TO COMPUTERS		2 1			0	3			
	-		AND OFFICE AUTOMATION									
С	Р	Α										
3	0	0			L	Τ		P	H			
					2	2 2 0 4						
PRERE	QUISIT	'E: Nil	2									
COUR	SE OUT	COME	S:	Б	•		Ŧ					
Course	outcome	2S:	Literation to Communication With Lorent	Do	omai	n	Le	vel	L			
Window	enne an	d Exp	ord nod Doint and Hard disk	C	ogniti	ve	Ke	memi dorati	onding			
Windows properties, word pad, Paint and Hard disk. Unde									boring			
CO2. D		т гури	in word i locessing using wis word.	C	Understanding							
CO3:E	xnlain Int	roducti	on to worksheet and Excel and how to	Co	ooniti	ve	Un	derst	anding			
useExce	el sheet.	100000			9		Remembering					
							Ap	plyin	g			
CO4: E	CO4: Explain Formatting the worksheet and how to take print Cognitive											
inExcel	inExcel sheet.											
CO5: E	xplain M	S-POV	/ER POINT and to know important govt.	Co	ogniti	ve	Understanding					
webpag	e's for va	rious f	orms, formats, exams.									
									•			
	tion to C	1	m Black diagram Managing Devices Operat		Creat		`		9			
Introduc	ction to V	Vindou	er: Block diagrafii, Melliones, Devices, Operat	ing ow	Sysu Sysu	ort b		nces.	one			
Task ba	r - shorte	ut icon	s. Starting windows - Desktop - closing wind	ize	s - St Max	imiz	ulle e (n - K Nose	Active			
& Inact	ive Wind	ows - F	Personal tools. Word pad: Creating & Saving a t	file.	oper	ning	the	savec	d file.			
word pr	ocessing.	Paint:	creating & editing bitmaps - Multimedia tools	- fi	le sys	stem	. Ha	ard di	isk:			
Drive -	folders -	file - E	xploring the files. My Computer - Explorer - n	novi	ing fi	les, o	dele	eting,	cut,			
copy, pa	aste - Exp	oloring	web.		_			_				
UNIT I	Ι								9			
Word P	rocessing	using	MS WORD: Word processing - Advantages –	MS	WO	RD -	- D	efinit	ion.			
Docume	ent: Creat	te - sav	e - Printing - Resave – Close- Exiting word. Ed	ditir	ng: O	peni	ngo	docur	nent –			
cursor n	novemen	t - seled	ting text - deleting - undo redo - Moving text	- Co	opyin	g tey	xt. F	Forma	atting			
text: Fo	nt - parag	graph fo	ormatting - bullets & numbering - getting help	- fir	nd an	d rep	olac	e text	t - spell			
checkin	g and cor	rection	- grammar checking - auto correct - auto text	- us	ing tl	nesai	irus	s – us	ing tabs			
- definir	ng & chai	nging p	age setup - page print options. Tables: creating	g &f	forma	atting	g, m	nultip	le			
columns	s. Math e	quatior	s and type setting in MS Word.						•			
UNIT		no dr4°	an to markshoot and Engel Definition Al	~ ~ 4	~ ~ ~ ~	0	•	4	9			
Worlash	CEL: INT	ontorin	on to worksneet and Excel - Definitions - Adva	anta	iges -	Org	ant	zatioi	ranga			
WUIKSIK	et alea -	enterm	g information - number - Formula - save - data	a all	giiiik	- III -	cul	ung -	- range -			

definition - specifying - changing column width - row height - centering cell across column, hiding columns and rows - moving and copying data - inserting and deleting rows and columns.

UNIT IV		9							
MS-EXCEL: Formatting the worksheet - printing - setting up page and margindefining header and									
footer - print options. Chart: creation - changing type - resize and move - controlling the									
appearance - m	odifying - deleting - printing - naming ranges - using statistical, M	athematical and							
financial function	ons - using drawing tool bar.								
UNIT V		9							
MS-POWER F Presentation, A ID, Using search exams.	MS-POWER POINT: Introduction - Menus - Toolbar - Navigating Power Point– Creating Slides, Presentation, Animation, etc - working with Power Point. Internet: Internet Browsing, creating mail ID, Using search engines etc. – To know important govt. webpage's for various forms, formats, exams								
LECTURE	TUTORIAL	TOTAL							
15	30	45							
TEXT BOOK									
1. Sanjay	Saxena, MS-Office -2000 for every one, Vikas Publishing House F	Pvt. Ltd., New							
Delhi, 2	2000. Unit 1: Part I, Unit 2: Part II, III, Unit 3, 4: Part IV, Unit 5: Part V.	,							
REFERENCE									
1 DV T	wali D.C. Safeware for Windows 08 Made simple TATA McCrow								

1. R.X. Taxali, P.C. Software for Windows 98 Made simple, TATA McGraw-Hill Publishing Company Ltd., New Delhi, 2001.

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2			1				1
CO 2	3	2			1				1
CO 3	3	2			1				1
CO 4	3	2			1				1
CO 5	3	2			1				1
Total	15	10			5				5
Scaled value	3	2			1				1

 $1 - 5 \rightarrow 1, 6 - 10 \rightarrow 2, 11 - 15 \rightarrow 3$

COURSE	XMT302			L	Т	P	С			
CODE										
COURSE	GENERAL INTELLIG	2	1	0	3					
NAME										
PREREQUISI	BASIC PROPERTIES	Т	Р	Η						
ТЕ										
C:P:A	3:0:0			2	2	0	4			
COURSE OUTC	OMES:					1				
Course outcomes			Domain		L	evel				
CO1: Explain the	e basic concepts of number	rs.	Cognitive	Rem	ember	ring				
H.C.F. & L.C.M o	of numbers and to solve the	;	8	Unde	erstan	ding				
problems.										
CO2: Explain the basic concepts of Decimal Cognitive Remembering										
Fractions, Simplif	Unde	erstan	ding							
problems.						0				
CO3: Explain the	Rem	ember	ring							
Roots &Cube Roo	ots, Average and to solve th	ne	U	Unde	erstan	ding				
problems	,	_				0				
CO4: Explain the	basic concepts of Problem	ıs	Cognitive	Rem	ember	ring				
on Numbers. Problems on Ages and to solve the Understanding										
problems.										
CO5: Explain the basic concepts of Surds & Cognitive Remembering										
Indices, Percentage and to solve the problems. Understanding										
Numbers H.C.F.	& L C M of Numbers									
UNIT II							9			
Decimal Fractions	, Simplification.						t			
UNIT III							9			
Square Roots & C	ube Roots, Average.									
							Δ			
Drobloms on Num	hara Broblama on Agaa						9			
Problems on Num	bers, Problems on Ages.									
UNIT V							9			
Surds & Indices. H	Percentage.									
		<u>.</u>								
	LECTUR E	TUT	ORIAL	ТОТ	TAL					
	15	30		45						
TEXTBOOK										
1. R.S. Aggar 20 th editio	rwal, Quantitative Aptitude n (2013)	e for Co	ompetitive Ex	amina	tions,	S Cl	nand;			
REFERENCES										

- 1. Banking awareness by Sangram Keshari Rout and Soumya Ranjan Behera, B.K. Publications Pvt. Ltd.; Second edition (2014).
 - 2. UGC-CSIR NET/SET by Dr. Pawan Sharma and Anshuman, Arihant Publication.
 - 3. Fast Track Objective Arithmetic by Rajesh Verma, Arihant Publication , Edition 2012.

E-REFERENCES

- 1. www.careerbless.com
- 2. www.jagranjosh.com
- 3. www.bestguru.com

Table 1: Mapping of CO's with PO's:

	PO1	PO2	PO 3	PO4	PO 5	PO6	PO7	PO8	PO9
CO1	3	1							1
CO2	3	1							1
CO3	3	1					1		1
CO4	3	1		1			1		1
CO5	3	1		1			1		1
Total	15	5		2			3		5
Scaled value	3	1	0	1	0	0	1	0	1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODE			COURSE NAME	L	Т	Р	С		
XMT3	303		DIFFERENTIAL EQUATIONS	4	1	0	5		
			TRANSFORMS						
С	Р	Α							
-									
5	0	0		L	Т	Р	Η		
				4	2	0	6		
PREREQUISITE: Nil									
COURSE OUTCOMES:									
Cours	e outco	mes:		Dom	ain	Level			
CO1:5	Solve sin	nple p	roblems related to First order, higher	Cogn	itive	Apply	ing		
degree	differe	ntial e	quations solvable for x, solvable for	U		11.2	U		
y, solv	vable fo	r dy/d	x, Clairaut's form – Conditions of						
integra	bility of	f M dx	+ Ndy = 0.						
CO2:	2: Solve second order differential equations with Cognitive								
consta	nt coeffi	icients	- Linear equations with variable						
coeffic	ients –	Metho	d of Variation of Parameters.						
CO3:	Formati	on of I	Cogn	itive	Apply	ring			
SolveP	DE of t	he star	ndard forms - Lagrange's method -						
Solvin	g of Cha	arpit's	method	_					
CO4:	SolveP	DE of	second order homogeneous equation	Cogn	itive	Applying			
with C	onstant	coeffic	cients – Particular integrals of the						
forms (eax+by,	Sin(az	$x+by$), $Cos(ax+by)$, $x^{2}y^{3}$ and						
e	(X,Y). Find I	a m 1aaa	Transformer and Inverse Lonloss	Carr	:+:	Dama	mhan		
CO5: Transf	rme of	using	Standard formulae Basic theorems	Cogn	live	ing			
l lansi & simi	ole annli	ication	s Use of Laplace Transforms in			Δnnlv	ina		
solving	\overline{O} ODE \overline{V}	with co	onstant coefficients			¹ ppiy	шş		
UNIT	J J			<u>.</u>		18			
First o	- order. h	igher	degree differential equations solvab	le for	x. sol	vable f	or v.		
solvab	le for dy	v/dx, C	Clairaut's form – Conditions of integra	bility of	of M d	x + N d	$\mathbf{y} = 0$		
– simp	le probl	ems.	6	J			5		
+	1								
UNIT	II	-				18			
Particu	lar inte	grals o	t second order differential equations v	with co	nstant	coeffici	ents -		
Linear	equation	ons wit	th variable coefficients – Method of	variati	ion of	Parame	ters (
Umit t	mra & f	ngner	order equations).						
UNIT	III					18			
Forma	tion of	Partia	al Differential Equation – General,	Parti	cular	& Con	plete		
integra	ls – Sol	lution	of PDE of the standard forms - Lagra	nge's r	nethod	- Solvi	ng of		

UNIT IV				18
PDE of sec integrals of	cond order homogen f the forms eax+by, S	eous equation with Sin(ax+by), Cos(ax	h Constant coeffic x+by), x ^r y ^s and e ^a	cients – Particular f^{x+by} . $f(x,y)$.
UNIT V				18
Inverse La constant co	place Transforms – pefficients.	Use of Laplace	Transforms in se	olving ODE with
		LECTURE	TUTORIAL	TOTAL
		60	30	90
TEXT BO	OKS			
 T.K.Ma S.Visw Arumu Unit : 1 Unit : 2 Unit : 3 Unit : 4 	anicavachagom Pillay anathan Publishers P gam & Isaac, Differe Chapter IV – Sec Chapter V – Sec Chapter XII – Sec Chapter V [2]	y &S.Narayanan, l Pvt. Ltd., 1996. ential Equations, N ctions 1,2 & 3, Ch tions 1,2,3,4 & 5, ections 1 – 6 [1]	Differential Equat lew Gamma Publi apter II – Section Chapter VIII – Se	ions, shing House 6 [1] ection 4 [1]
Unit: 5	Chapter IX – See	ctions 1 – 8 [1]		
REFEREN	NCES			
REFEREN 1. M.D.R	NCES aisinghania , Ordinar	y and Partial Diffe	erential Equations	, S.Chand& Co
REFEREN 1. M.D.R 2. M.K. V	NCES aisinghania , Ordinar 'enkatraman, Engine	y and Partial Diffe ering Mathematics	erential Equations s, S.V. Publication	, S.Chand& Co ns, 1985 Revised

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$
COURSE CODECOURSE NAMELTP									
XMT304	ļ		ANALYTICAL	4	1	0	5		
	·		GEOMETRY 3D						
C	P	Α		_					
5	0	0		L	Τ	Р	H		
				4	2	0	6		
PREREC	QUISITE: N	Nil							
COURS	E OUTCON	AES:							
Course o	outcomes:	•	1	Domain		Level	•		
	d coordinat	es in sp	bace, direction cosines of	Cognitive		Remember	ing		
a line, a	ingle betwe	en line	e and to explain angle			Understand	erstanding		
between	planes and	distance	e of a plane from a point.	<u> </u>		D 1	•		
CO2: Fl	na line of ir	itersecti	ion of planes, coplanar	Cognitive		Remember	ing		
lines, skew lines, Shortest distance between skew lines. CO3:Explain section of sphere by plane-tangent Cognitive Understandi									
Ines.CognitiveUnderstandCO3:Explain section of sphere by plane-tangentCognitiveUnderstand							ling		
CO3:Explain section of sphere by plane-tangent Cognitive Understand							ung		
generated	blanes, condition of tangency and system of spheres generated by two spheres.								
CO4· F	vnlain and t	o find f	he equation of surface	Cognitive		Remember	ino		
cone.	Sphann and t	o mia t	ind the equation of surface, Cognitive Rememberi Understand						
intersecti	on of straigh	nt line a	nd quadric cone . tangent			Chacibrain	*****8		
plane									
and norm	nal.								
CO5: E	xplain the c	ondition	n for plane to touch the	Cognitive Understand					
quadric c	one, conditi	on that	the cone has three	-		-			
mutually	perpendicul	ar gen	erators and condition for						
 intersection of straight line and quadric cone , tangent plane and normal. CO5: Explain the condition for plane to touch the quadric cone, condition that the cone has three mutually perpendicular generators and condition for the plane to touch the conicoid. UNIT I Coordinates in space-Direction consines of a line in space-angle between lines in space 									
UNIT I							18		
Coordina	tes in space-	Directi	on consines of a line in spa	ice-angle betw	een l	ines in space	; —		
equation	of a plane in	norma	l form. Angle between pla	nes – Distance	of a	plane from	a		
point.							10		
UNIT II							18		
Straight l	ines in space	e – line	of intersection of planes -	plane containi	ng a	line. Coplar	nar		
lines – sk	ew lines and	l shorte	st distance between skew l	ines- length of	the j	perpendicula	r		
from poir	nt to line.						*		
UNIT II	[18		
General e	equation of a	sphere	-Section of sphere by plane	e-tangent plane	es –c	ondition of			
tangency	-system of s	pheres g	generated by two spheres -	System of sph	eres	generated by	/ a		
sphere an	d plane.						40		
UNIT IV			• • •	. 1. 1 1	•		18		
The equa	tion of surfa	ce - co	ne – intersection of straigh	t line and quad	ric c	one – tangen	It		
plane and	i normal.						10		
UNITV							18		

Condition for plane to touch the quadric cone - angle between the lines in which the plane cuts the cone. Condition that the cone has three mutually perpendicular generators- Central quadrics – intersection of a line and quadric – tangents and tangent planes – condition for the plane to touch the conicoid.

LECTURE	TUTORIAL	TOTAL
60	30	90

TEXTBOOK

1. Shanthi Narayanan and Mittal P.K,"Analytical Solid Geometry" 16th Edition S.Chand &Co., New Delhi,2005.

2. Narayanan and Manickavasagam Pillay, T.K.," Treatment as Analytical Geometry"

S.Viswanathan (Printers & Publishers) Pvt. Ltd., 2008

Unit I : Chapter I, Sec 1.5 to 1.9, Chapter II Sec 2.1 to 2.3, Pages : 10-31

Chapter II Sec 2.4 to 2.8 pages : 32-47 of [1] Unit II : Chapter III section 3.1-3.7,

pages 55-89 of [1] Unit III : Chapter VI Sec. 6.1 to 6.6 pages : 121-143 of [1]

Unit IV : Chapter V Sec.43 to 47 pages : 103-113 of [2]

Unit V : Chapter V Sec.49 to 53, Pages:115-125 of [2]

REFERENCE

1. P.Duraipandian& others, "Analytical Geometry 3 Dimensional", Edition, 1998.

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled	3	2		1	1		1	1	1
value									

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURS	E CODE		COURSE N	AME	L	Т	P	С
XMT305	5		INTRODUCTION TO CO	DMPUTERS AND	0	0	2	1
			OFFICE AUTOMATI	ON (Practical)				
С	Р	Α						
1	0	0			L	Т	P	H
					0	0	2	2
PRERE	QUISITE	:XMT	301					
COURS	E OUTCO	OMES	:	T				
Course of	outcomes:	_		Domain	Leve]		
CO1:De	fine and A	Apply\	Vindows properties, Note pad	Cognitive	Reme	emberi	ing	
Applicat	ions				Appl	ying		
CO2: D	efine and	Apply	V Control Panel Setup	Cognitive	Reme	ember	ing	
,Designii	ng Adverti	semen	t and Document creation		Appl	ying		
with spec	cial feature	es like	header, footer, tables, etc.	~				
СОЗ:Ар	ply typing	, practi	ces on Algebraic &	Cognitive	Remembering			
Transcen	dental Equ	uations	s, System of Equations,		Appl	yıng		
Matrices	, Equation	s, etc.	in MS Word.	a	TT 1	. 1	•	
СО4: Ех	xplain Tabl	le crea	tion and Table editing,	Cognitive	Applying			
I able to	lext / lex	t to 18	ible conversion in MS		Appl	ying		
word, El	ectricity B	sill cre	ation, wark sneet creation					
	nnly Doug	or Doir	t presentation on various	Cognitivo	Applying			
concents	PPIY 10wo Regression		tion Worksheet	Cognitive	Аррі	ying		
	F PRACT	ICAI	S					
1 Note r	ad Applic	ations						
2 Contro	ol Panel Se	etiin						
3. Design	ning Adver	rtiseme	ent and Document creation w	ith special features]	ike he	ader. f	ooter	•
tables, et	с.							,
4. Typing	g practices	on Al	gebraic & Transcendental Eq	uations, System of I	Equati	ons, M	Iatric	es,
Integral	1			ŕ				
5. Table creation and Table editing, Table to Text / Text to Table conversion							ord	
6. Electricity Bill creation, Mark sheet creation and Charts in Work Sheet								
7. Power	Point pres	sentatio	on on various concepts					
8. Regres	ssion Equa	tion W	Vorksheet					

Semester IV

COU	COURSE CODE COURSE NAME L T P						С				
XMT	401		OBJECT ORIENTED PROGRAM WITH C++ THEORY	MMING	3	0	0	3			
С	Р	Α									
3	0	0			L	Т	Р	Н			
	. i				3	0	3				
PREI	REQU	ISITE:									
COURSE OUTCOMES:											
Cour	se outo	comes:		Domain		Lev	el				
CO1: consta consta dynan	Define ants, ba ants, ty nic init	e and Apasic, user pe comp ializatio	oply keywords, Identifiers and r defined, derived data types symbolic patibility - declaration of variables - n of variables.	Cognitive		Rem App	nembe lying	ering			
CO2: protot inline overlo	Defin yping functionading	e and A – call by ons - def - math li	Apply the main function - function reference - return by reference - Fault, constant arguments – function fibrary functions.	Cognitive		Rem App	nembe lying	ering			
CO3: privat memb object	Define e mem ers - s s as fu	e and A ber func- static m nction a	Applynesting of member function - ction - array within class - static data ember functions - array of objects - rguments - friendly functions.	Cognitive		Rem App	nembe lying	ering			
CO4: - copy defini opera	Defin constang ope tors.	e and A ructor -d rator ove	pplydynamic initialization of objects lynamic constructors – destructors - erloading - overloading unary, binary	Cognitive		Rem App	nembe lying	ering			
CO5: multip inheri constr	O5: Define and Applymultilevel inheritance – Cognitive Remem Applying theritance - hierarchical inheritance - hybrid heritance - virtual base class - abstract classes - onstructors in derived classes.							ering			
UNII	' I			±		i	9	9			
What token symbo of var	is C++ s - key olic co iables.	Appli words - onstants	cations of C++ - A simple C++ program Identifiers and constants - basic, user d - type compatibility - declaration of var	m - An exan efined, deri riables - dyr	mple ived nam	e with data ic init	types tializa	s - ation			
UNII	' II						g	9			
Opera	tor in (C++ - sc	ope resolution, member differencing, r	nemory ma	nage	ement	t				

operators - manipulators - type cast operator - the main function - function prototyping – call by reference - return by reference - inline functions - default, constant arguments – function overloading - math library functions.

UNIT III

9

9

9

C structure - specifying a class - defining member function - a C++ program with class making an outside function inline - nesting of member function - private member function - array within class - static data members - static member functions - array of objects -objects as function arguments - friendly functions.

UNIT IV

Constructors – parameterized constructors - multiple constructors in a class -constructors with default arguments - dynamic initialization of objects - copy constructor -dynamic constructors – destructors - defining operator overloading - overloading unary, binary operators.

UNIT V

Defining derived classes - single inheritance - multilevel inheritance - multiple inheritance-hierarchical inheritance - hybrid inheritance - virtual base class - abstract classes - constructors in derived classes.

LECTURE	TUTORIAL	TOTAL
45	0	45

TEXTBOOK

1. E. Balagurusamy, Object Oriented Programming with C++, Third edition, Tata McGrawHill publication, New Delhi, 2006.Unit 1: Chapters: 2.1 - 2.5, 3.1- 3.11, Unit 2: 3.13-3.18, 4.1-4.9 & 4.11.Unit 3: 5.1- 5.9, 5.11-5.15. Unit 4: 6.1-6.8, 6.11, 7.2-7.5.Unit 5: 8.1-8.11.

REFERENCES

1. V. Ravichandran, Programming with C++, Second Edition Tata McGraw - Hill, New Delhi, 2006.

2. H. Schildt, The complete Reference of C++, Tata-McGraw-Hill publishing Company Ltd.New Delhi, 2003.

Table 1: COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2			1				1
CO 2	3	2			1				1
CO 3	3	2			1				1
CO 4	3	2			1				1
CO 5	3	2			1				1
Total	15	10			5				5
Scaled	3	2			1				1
value									

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODE		L	Т	P	C				
COURSE NAME	GENERA	L INTELLIGE	NCE- II		2	1	0	3	
PREREQUISITE	BASIC PI	ROPERTIES O	F NUMB	ERS	L	Т	Р	Η	
C:P:A	3:0:0				2	2	0	4	
COUDSE OUTCOM	FS.								
COURSE OUTCOM	ES:			Domain	Lovol				
Course outcomes	vic concents	of profit and loss	ratio	Cognitive	Remembering				
& proportion and to so	lve the prob	olems	s, 1atio	Cognitive	Un	derst	anding	g	
CO2: Explain the bas	Re	mem	bering	5					
Rule and to solve the p	Un	derst	andin	g					
CO3: Explain the bas	sic concepts	of time & work,	pipes &	Cognitive	Re	mem	bering	5	
cisterns and to solve th	e problems				Un	derst	andin	g	
CO4: Explain the bas	ic concepts	of time & distance	e and	Cognitive	Re	mem	bering	5	
problems on trains an	d to solve th	he problems			Un	derst	andin	g	
CO5: Explain the bas allegation or mixture a	sic concepts	of boats and stre	ams and	Cognitive	Re Un	mem derst	bering and in	σ	
					o			Б	
Profit & Loss Ratio &	Proportion								
UNIT II	Topontion	•			9				
Partnership, Chain Rul	e.								
UNIT III					9				
Time & work, Pipes&	Cisterns.								
UNIT IV					9				
Times & Distance, Pro	blems on T	rains.			T _				
UNIT V		•			9				
Boats & Streams, Alle	gation or M	ixture.	ΤΙΤΟ		ТС	лтат			
		LECIURE 15	30	KIAL	10	JIAI	1		
ΤΕΧΤ ΒΟΟΚ		15	30						
1.R.S. Aggarwal, Q edition (2013)	Quantitative	Aptitude for Cor	npetitive	Examinations	, S (Chanc	l; 20 th	 l	
REFERENCES									
 Banking awaren Publications Pvt. L UGC-CSIR NET Fast Track Object 	ess by Sang td.; Second I/SET by Dr ctive Arithm	ram Keshari Rou edition (2014). r. Pawan Sharma netic by Rajesh V	t and Sou and Ansh erma, Ari	mya Ranjan B uman, Arihar hant Publicati	eher nt Pu on, H	a, B.I blicat Editio	K. tion. n 201	2.	
E-REFERENCES									
1.www.careerbless 2.www.jagranjosh. 3.www.bestguru.co	.com com om								

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1							1
CO2	3	1							1
CO3	3	1					1		1
CO4	3	1		1			1		1
CO5	3	1		1			1		1
Total	15	5		2			3		5
Scaled value	3	1	0	1	0	0	1	0	1

Table 1: Mapping of CO's with PO's:

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

CC CC)UR)DE	RSE 2	COURSE NAME	L	Τ	Р	С
XN	AT4	03	VECTOR CALCULUS & OTHER SERIES	4	1	0	5
С	P	Α					
5	0	0		L	T	Р	Н
	.1	.1		4	2	0	6
PR	ER	EQU	JISITE: Algebra, vectors				
CC	DUR	SE (OUTCOMES:				
Co	urs	e out	comes:	Domain	Level		
CC den sol Laj pro	nbering ng						
CC inte wo Vo)2: egra ork d olum	Find 1,cor one e int	I vectorintegration ,tangential line nservative force field, scalar potential, by a force, Normal surface integral, egral and to solve simple problems.	Cognitive	Remen Applyi	nbering ng	
CC Th pro)3:U eore oblei oblei	J se em, (ns & ns.	Gauss Divergence Theorem, Stoke's Green's Theorem and to solve Simple Verification of thetheorems for simple	Cognitive	Remembering Applying		
CC per ode)4: riodi d &	Exp c fur even	lain Fourier Series expansion of actions with Period 2π Make Use of functions in Fourier Series.	Cognitive	Unders Applyi	tanding ng	
CC sin ser)5: e sei ies.	Exp ries,	lain Half-range Fourier cosine Series & Change of interval & Combination of	Cognitive	Unders	tanding	
UN	II	I					18
Ve Dii Laj	ctor recti plac	diffe onal ian d	erentiation –velocity & acceleration-Vector derivative – divergence & curl of a vector ouble operator –simple problems.	or & scalar fie or solinoidal&	elds –Grad irrotation	lient of a al vectors	vector-
UN	TI	II					18
Ve do	ctor ne b	inte y a fe	gration – Tangential line integral – Conser orce - Normal surface integral- Volume in	rvative force t ntegral – simp	field –scal le problen	lar potent	tial- Work
UN	IIT	III		<u> </u>			18
Ga	uss	Dive	rgence Theorem – Stoke's Theorem- Gre	en's Theorem	– Simple	problem	S

&Verificat	ion of the theorems for simple proble	ems.									
UNIT IV			18								
Fourier series- definition - Fourier Series expansion of periodic functions with period 2π – Use											
of odd & even functions in Fourier Series.											
UNIT V:			18								
Half-range	Fourier Series - definition- Develop	ment in Cosine series & in	Sine series - change								
of interval	- Combination of series.										
	LECTURE TUTORIAL TOTAL										
	LECTURE TUTORIAL TUTAL 60 30 90										
TEXT BO	OK		I								
1. M.L. Kh	anna, Vector Calculus, Jai Prakash N	lath and Co., 8th Edition, 1	986.								
2. S. Naray	anan, T.K. Manicavachagam Pillai, (Calculus, Vol. III, S. Viswa	anathan Pvt Limited,								
and Vijay	V Nicole Imprints Pvt Ltd, 2004.										
UNIT – I -	Chapter 1 Section 1 & Chapter 2 Sec	ctions 2.3 to 2.6, 3, 4, 5,	7 of [1]								
UNIT – II ·	- Chapter 3 Sections 1, 2, 4 of [1]U	NIT – III - Chapter 3 Section	ons 5 & 6 of [2]UNIT								
– IV - Chaj	oter 6 Section 1, 2, 3 of [2]										
UNIT – V	- Chapter 6 Section 4, 5.1, 5.2, 6, 7 o	f [2]									
REFEREN	ICES										
1. P.Duraip	andiyan and Lakshmi Duraipandian,	Vector Analysis, Emarald									
publishers	(1986).										
2. Dr.S.Arı	imugam and prof. A.ThangapandiIss	ac, Fourier series, New Ga	mma								
publishing	house (Nov12).										

Table 1: COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled	3	2		1	1		1	1	1
value									

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODECOURSE NAMELT										
XMT	404		MECHANICS		4	1	0	5		
С	P	Α								
5	0	0			L	Т	Р	H		
	<u> </u>				4	2	0	6		
PRER		SITE: A	Algebra							
COUL	KSE OI	JICON	1ES:	n	•	т	•			
Cours		omes:		Dom		Leve	l			
		asic Co	concepts and Principles - Forces acting at a Point	Cogn	itive	Keme	emberi	ing		
	xpiainL	ami s i	neorem and Applications - Parallel Forces - Like			Unde	rstand	ing		
and U	mike Pa	ITALLEL F	orces - Moment of a force – Couples – Related							
problems.										
CO2. Eriotic	Explai	in Equin	ation Angle of Friction Cone of Friction	Cogn		Unde	istanu	mg		
Proper	ni - Lav	l related	nrohlems							
	Dofino	and F	valain Motion in a Straight line under uniform	Com	itiva	Reme	mhori	inα		
accele	ration	Newton	's I aws of motion Projectiles Path of Projectile	Cogn		Unde	rstand	ing ing		
and R	ange on	an Incli	ined Plane.			Chuc	Onderstanding			
CO4:	Explai	n Collis	ion of Elastic Bodies. Direct and Oblique Impact	Cogn	itive	Unde	Understanding			
Loss c	of Kinet	ic Energ	y, Related Properties and Simple Problems.	008		onderstanding				
CO5:	Explai	i n Motio	n under the action of Central Forces, Properties,	Cogn	itive	Unde	rstand	ing		
Differ	ential E	quation	of Central Orbit, Pedal Equation of Central	U				U		
Orbit,	Velocit	ties in a	Central Orbit, Law of Forces, Properties and							
Relate	d Probl	ems.								
UNIT	I			1		-	18			
Basic	Concep	ts and P	rinciples - Forces acting at a Point - Lami's Theore	em and	Appl	ication	s -			
Paralle	el Force	s - Like	and Unlike Parallel Forces - Moment of a force -	Couple	es^{11}	Related	1			
proble	ms.			-						
TINIT	TT					-	18			
Equili	hrium o	fThraa	Forces acting on a rigid body Friction I aws of	Frictio	n Ai	ngla of	LO Fricti	on		
- Cone	of Fric	$r_{1} = P$	roperties and related problems	FILCHO	II - AI	igie oi	FICU	on		
- Con	. 01 1110	1011 - 1	roperties and related problems.							
UNIT	III					-	18			
Motion in a Straight line under uniform acceleration - Newton's Laws of motion. Projectiles										
Defini	tion - P	ath of P	rojectile - Range on an Inclined Plane - Properties	and Pr	oblem	s.				
UNIT IV 18										
Impul	se and I	mpact:	Collision of Elastic Bodies – Direct and Oblique Ir	npact -	- Loss	of Kin	etic			
Energ	y – Rela	ated Pro	perties and Simple Problems.							
TINIT	X 7					-	10			
UNII	V						LÕ			

Central Orbits: Motion under the action of Central Forces - Properties and Related Problems -Differential Equation of Central Orbit - Pedal Equation of Central Orbit -Velocities in a Central Orbit - Law of Forces - Properties and Related Problems.

LECTURE	TUTORIAL	TOTAL
60	30	90
TEXT BOOKS		
1. M. K. Venkataraman, Statics, Agasthia	ar Publications, Trichy,	2004.
Unit 1: Chapters 2, 3, 4Unit 2: Chapters 5	5, 7	
2. M. K. Venkataraman, Dynamics, Agas	sthiar Publications, Tric	chy, 2004.
Unit 3: Chapters 3: section 3.22, Chapter	4: Section 4.3, Chapte	r 6
Unit 4: Chapter 8Unit 5: Chapter 11	· •	
DEPENDINGER		
REFERENCES		
1. T. K. ManickavasagamPillai, Statics, S	S. Viswanathan& Co., O	Chennai, 1980.
2. S. Narayanan, Dynamics, S. Chand &	Co., New Delhi, 1980.	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

Table 1: COs VS POs Mapping

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODECOURSE NAMELTP										
XM	Г405		OBJECT ORIENTED PROGRAMMING W C++ (Practical)	ITH	ITH 0 0 3					
С	Р	Α								
3	0	0		LT						
		<u> </u>	0	0	3	3				
PRE	REQU	ISITE:				I	I			
COL	JRSE C	UTCON	1ES:							
Cou	rse outo	comes:		Don	nain	Leve	1			
CO1	: Apply	identifier	s and constants, user defined, derived data types	Cogr	nitive	Applying				
CO2: return overle	• Apply h by refe oading -	the main rence - in math libr	function - function prototyping – call by reference - line functions - default, constant arguments – function ary functions.	Cogr	nitive	Applying				
CO3 funct	Apply at ions - ar ions.	array with ray of obje	in class - static data members - static member ects -objects as function arguments - friendly	Cognitive Applyin			/ing			
CO4: Apply initialization of objects - copy constructor -dynamic Cognitive constructors – destructors.										
CO5 Cons	: Apply structors	y hybrid s in derive	inheritance - virtual base class - abstract classes - ed classes.	Cog	nitive	Appl	ying			

LIST OF PRACTICALS

- 1.List the prime numbers in a given range
- 2. Display Fibonacci series
- 3. Sorting given list of names in alphabetical order
- 4. Sorting given list of numbers in ascending order
- 5. Read and display for a given matrix of any order
- 6. Compute simple and compound interest values
- 7. Computer biggest among three numbers
- 8. Compute biggest among N integers
- 9. Compute factorial of a given number using recursive function

.

- 10. Write a program to swap the values using functions
- 11. Print perfect squares in a given range
- 12. Write a program to solve a quadratic equation and test with three types of roots.
- 13. Write a program to calculate the following functions to 0.0001% accuracy

a)
$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \cdots$$

b)
$$SUM = 1 + \left(\frac{1}{2}\right)^2 + \left(\frac{1}{3}\right)^3 + \left(\frac{1}{4}\right)^4 \cdots$$

c) $\cos x = 1 - \frac{x^2}{x^4} + \frac{x^4}{x^4} - \cdots$

c)
$$\cos x = 1 - \frac{1}{2!} + \frac{1}{4!} - \frac{1}{4!}$$

14. Write a program to calculate variance and SD of N numbers

- 15. Write a program to read two matrices and compute matrix multiplication using functions
- 16. Prepare employee details using class with array of objects
- 17. Program to illustrate objects as function arguments
- 18. Program to illustrate parameterized constructors
- 19. Program to illustrate multiple constructors in a class
- 20. Show by a suitable program: how the unary minus operator is overloaded?
- 21. Show by a suitable program: how the binary operator is overloaded?
- 22. Prepare student mark list by using multilevel inheritance
- 23. Program to illustrate multiple inheritance
- 24. Prepare student mark list by using hybrid inheritance
- 25. Prepare student mark list by using the concept of virtual base class

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled	3	2		1	1		1	1	1
value									

Table 1: COs VS POs Mapping

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

Semester V

COURSE CODECOURSE NAMELTF										
X	MT5	01		NUMERICAL METHODS WITH 'C' PROGRAMMING	3	1	0	4		
С	P		A							
4	0		0		L	Τ	Р	H		
				3	2	0	5			
Pl	RER	EQ	UISIT	E:			<u> </u>	<u>.</u>		
C	OUR	SE	OUT	COMES:	Ţ					
C	ours	e ou	tcome	S:	Domain	Le	evel			
C Ex or	O1:A xpres perato	App sior ors.	ly Vari 1s, Mat	ables and Data types, Operators and hematical Functions-Input and output	Cognitive	7				
C sta W	02: atemo HIL	Exj ents E, D	olain D , GOT O, FO	Decision making and Branching using IF O statement, Decision making and looping - R statements and Arrays.	Cognitive	Ur Aț	Understanding Applying			
C or fu	O3:U	J sel arac	Iandlin ters, S	g of character strings, Arithmetic operations tring handling functions and User defined	Cognitive	Aţ	oplying	5		
C	04: \$	Solv	ving alg	gebraic and transcendental equations.	Cognitive	Applying				
C	05:	Fin	d Inter	polation with equal and unequal intervals.	Cognitive	Remembering				
U	NIT	I			<u>i</u>	15				
St M	ructu athei	ire o nati	of C p cal fun	rograms-Constants, Variables and Data types ctions-Input and output operators.	-Operators	and	Expre	ssions-		
U	NIT	II				15				
Do lo	ecisio oping	on g - \	making VHILE	g and Branching-IF statements-GOTO state , DO, FOR statements-Arrays.	ement-Decis	ion	makin	ig and		
U	NIT	III				15				
Ha fu	andli nctio	ng ns -	of cha User c	racter strings - Arithmetic operations on c lefined functions - Recursion.	characters -	Str	ing ha	andling		
U	NIT	IV				15				
Cu alg No	urve gebra ewto	fitti tic n R	ng-Lin and tr aphson	ear and parabolic curves by the method of leas anscendental equations - Bisection method, method - Solving simultaneous algebraic equa	st squares p false posit ations - Gau	rinci tion 188-S	ple - S metho leidel 1	Solving od and nethod		

- Gauss elimination method.		
UNIT V:		15
Interpolation - Newton's forwar	d and backward	difference formulae - Lagrange's
interpolation formula - Numerical	integration using T	Trapezoidal and Simpson's one-third
rules - solution of ODE's - Euler me	ethod and Runge-Ku	tta fourth order method.
IECTUDE	ΤΙΤΛΟΙΑΙ	ΤΩΤΑΙ
	1010KIAL 30	75
TEXT BOOKS	30	75
1 E Balagurusamy Drogramming	in ANSI C Sixth of	dition Tata Ma Gray Hill Publishing
Co. Ltd. New Delbi 2012 (For	III ANSI C, SIXIII C Units I II and III)	inton, Tata Mc-Oraw Thin Fublishing
2 MK Venketraman Numerical n	offices in Science a	nd Engineering National Publisher
Company Fifth Edition 2001 (For Units IV and V)	nd Engineering, National I donsiter
Unit 1: Chapters 1-4 of [1]	for ones i vana v)	
Unit 2: Chapters 5-7 of [1]		
Unit 3: Chapters 8-9 of [1]		
Unit 4: Chapter 1, Sections 1.7-1.8,	Chapter 3, Sections	2, 4 and 5, Chapter 4, Sections 2, 6
of [2]		
Unit 5: Chapter 6, Sec 3, 4, Chapter 8	, Sec 4, Chapter 9, S	bec 8,10, Chapter 11, Sec10,16 of [2]
REFERENCES		
1. Yashavant.P.Kanetkar, Let us 'C'	, BPB Publications,	2002.
2. Rajaraman, Computer oriented nu	imerical methods, Pi	rentice-Hall of India, 1971.

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2			1				1
CO 2	3	2			1				1
CO 3	3	2			1				1
CO 4	3	2			1				1
CO 5	3	2			1				1
Total	15	10			5				5
Scaled	3	2			1				1
value									

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

CO CO	URSE		COURSE NAME		L	Т	Р	C		
XM	IT502A		MATHEMATICAL STATISTICS		4	1	0	5		
С	Р	Α								
4	0.5	0.5			L	Т	Р	H		
	<u> </u>	<u> </u>			4	2	0	6		
PR	EREQI	J ISITE	<u> </u>			<u>.</u>				
СО	URSE	OUTCO	OMES:							
Coi	irse out	nain	Leve	l						
CO	1:Find	nitive	Reme	emberi	ng					
$-\mathbf{N}$	Ioments	U		Unde	rstand	ing				
Ado	lition ar	nd Multi								
con	ditional									
CO	2: Exp	lain Ra	ndom variables – Discrete and Continuous,	Cog	nitive	Reme	emberi	ng		
Def	ine Prob	ability	Mass Function and Density Function –		ying					
Dis	tribution	n Functi	ons – Properties – Mathematical Expectations –							
Mea	an, Vari	ance an	d Moments – Moment Generating Functions –	Psyc	hom	Guided				
Sim	ple pro	perties		otor		Resp	onse			
CO	3:Expla	ain Dis	screte distributions Binomial Distribution and	Cog	nitive	Unde	rstand	ing		
Poi	sson dis	stributio	n – Continuous: Normal Distribution Properties							
and	Applica	ations.								
CO	4: Exp	lain Cu	rve Fitting by the Method of Least Squares and to	Cog	nitive	Remembering				
finc	Correla	tion, Ro	egression, Equations of Regression Lines, Angle			Understanding				
bety	ween Re	gressio	n Lines – Properties and Applications.	~	• •					
CO	5: Exp	lain Ty	pes of Sampling – Parameters and Statistical	Cog	nitive	e Understanding				
Tes	ts of Sig	gnifican	ce – Null Hypothesis – Large Sample Tests –	A CC		D	•			
San	npling L	Distribut	ions: t, Chi – Square and F distributions.	Affe	ctive	Rece	ving			
UN	ITI			~		18				
Mea	asures o	f Centra	al Tendency – Measures of Dispersion – Moments,	Skew	ness a	nd Ku	rtosis -	-		
The	ory of H	robabil	ity: Definition – Axioms – Addition and Multiplica	tion 1	heore	ms –Ba	aye's			
The	orem of	n condit	ional probability and its applications.							
UN	ľľ II					18	-			
Random variables – Discrete and Continuous – Definition of Probability Mass						nction	and			
Density Function – Distribution Functions – Properties – Mathematical Expectation							Aean,			
Variance and Moments – Moment Generating Functions – Simple properties										
UNII III Theometical distributions Discontex D										
I neoretical distributions – Discrete: Binomial Distribution and Poisson distribution – Cont Normal Distribution Properties and Applications							ntinuo	us:		
INIT IV 10										
		ng hr 41-	a Mathad of Lagat Sayama Completion Dramat		Dagrag	10	Fanat:	ong		
		ng Uy th on Line	c Inicial of Least Squares – Correlation – Properties	t = 8 - 1	vegres	51011 — 1 0116	∟quati	ons		
			s – Angie Detween Regression Lines – Froperties a	nu Ap	pricati	10				
UIN	11 V					10				

Sampling: Introduction – Types of Sampling – Parameters and Statistical Tests of Significance – Null Hypothesis – Large Sample Tests – Sampling Distributions: t, Chi – Square and F distributions.

LECTURE	TUTORIAL	TOTAL
60	30	90

TEXT BOOKS

1. S. Arumugam& A. Thangapandi Isaac, Statistics, New Gamma Publishing House, 2006. Unit 1: Chapter 1: Sections 1.0 -1.4; Chapter 2: Section 2.0-2.5; Chapter 3: Sections: 3.0-3.2; Chapter 4: Sections: 4.0 -4.2; Chapter 11: Sections: 11.0 -11.2. Unit 2: Chapter 12: Sections 12.0 -12.5.Unit 3: Chapter 13: Sections 13.0-13.3.Unit 4: Chapter 5: Section 5.0, 5.1; Chapter 6: Section 6.0-6.3Unit 5: Chapter 14: Sections 14.0-14.5.

REFERENCES

 J.N. Kapoor& H.C. Saxena, Mathematical Statistics, S. Chand & Co Pvt. Ltd., New Delhi, 1994.
 S. C. Gupta & V. K. Kapoor, Fundamentals of Mathematical Statistics, S. Chand & Co Pvt. Ltd., New Delhi,

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSI	E CODE		COURSE NAM	/IE	L	T P		С		
XMT502	B		STOCHASTIC PRO	4	1	0	5			
С	Р	Α								
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5	0		L	Ί	Р	H				
					4	2	0	6		
PRERE()UISITE :			<u>.</u>	<u>I</u>	<u>I</u>				
COURSI	E OUTCO	DMES:								
Course o	utcomes:			Domain		Level				
CO1:Exp – Laplace - Difference and Matri	plain Gene transforms ce equation x analysis.	rating func of a probal s – Differe	tion - Laplace transforms bility distribution function ntial difference equations	Cognitive	e	Understandir				
CO2: Ex inMarkov	xplain Stati Chains –H	ionary Proc igher transi	ess and solve problems tion probabilities.	Cognitive	e	Understanding Applying				
CO3:Fin Determina of Markov	d Classif tion of high system – l	ication of her transitio Limiting be	states and chains – on probabilities – Stability haviour.	Cognitive	Remembering					
CO4: Ex – Generali process.	CO4: ExplainPoisson Process and related distributions - Generalization of Poisson Process – Birth and death process.							nding		
CO5: Ex reliability channel m	xplain Stoo and solve odels – Bu	chastic Proc problems in lk Queues.	cess in queuing and n M/M/1 models - Multi	Cognitive	e	Und App	nderstanding pplying			

UNIT I		18
Generating function - Laplace transforms – Laplace transforms	of a probability c	listribution
function - Difference equations - Differential difference equation	s – Matrix analys	is.
UNIT II		18
Stochastic Process - Notion - Specification - Stationary Pr	ocess - Markov	Chains –
Definition and examples – Higher transition probabilities.		
UNIT III		18
Classification of states and chains - Determination of highe	r transition prob	abilities –
Stability of Markov system – Limiting behaviour.	•	
UNIT IV		18
Poisson Process and related distributions - Generalization of P	oisson Process -	Birth and
death process.		
UNIT V		18
Stochastic Process in queuing and reliability - queuing systems -	- M/M/1 models -	– Birth and
		1
death process in queuing theory – Multi channel models – Bulk Q	ueues.	,
LECTURE	ueues. TUTORIAL	TOTAL
death process in queuing theory – Multi channel models – Bulk Q LECTURE 60	TUTORIAL 30	TOTAL 90
death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS	TUTORIAL 30	TOTAL 90
death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 2)	TUTORIAL 30 3.6,3.7,3.8), Chap	TOTAL 90
death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 3 (Omitting 4.5 and 4.6) and Chapter 10 (Omitting 10.6,10)	TUTORIAL 30 3.6,3.7,3.8), Chap 7). Unit 1: Chapt	TOTAL 90 oter 4 er 1 – Sec
Image: death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 2, Omitting 4.5 and 4.6) and Chapter 10 (Omitting 10.6,10 1.1, 1.2, 1.3, Appendix A 1, 2, 3, 4. Unit 2: Chapter 2 – S	TUTORIAL 30 3.6,3.7,3.8), Chap .7). Unit 1: Chapt ec 2.1, 2.2, 2.3 &	TOTAL 90 oter 4 er 1 – Sec c Chapter 3
death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 3, 000) 1.1, 1.2, 1.3, Appendix A 1, 2, 3, 4. Unit 2: Chapter 2 – S – Sec 3.1, 3.2. - Sec 3.1, 3.2.	TUTORIAL 30 3.6,3.7,3.8), Chap 7). Unit 1: Chapt ec 2.1, 2.2, 2.3 &	TOTAL 90 oter 4 er 1 – Sec chapter 3
Image: death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 3 (Omitting 4.5 and 4.6) and Chapter 10 (Omitting 10.6,10 1.1, 1.2, 1.3, Appendix A 1, 2, 3, 4. Unit 2: Chapter 2 – S – Sec 3.1, 3.2. Unit 3: Chapter 3 – Sec 3.4, 3.5, 3.6.	TUTORIAL 30 3.6,3.7,3.8), Chap 7). Unit 1: Chapt ec 2.1, 2.2, 2.3 &	TOTAL 90 oter 4 er 1 – Sec c Chapter 3
death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 3 (Omitting 4.5 and 4.6) and Chapter 10 (Omitting 10.6,10 1.1, 1.2, 1.3, Appendix A 1, 2, 3, 4. Unit 2: Chapter 2 – S – Sec 3.1, 3.2. Unit 3: Chapter 3 – Sec 3.4, 3.5, 3.6. Unit 4: Chapter 4 – Sec 4.1, 4.2, 4.3, 4.4	TUTORIAL 30 3.6,3.7,3.8), Chap 7). Unit 1: Chapt ec 2.1, 2.2, 2.3 &	TOTAL 90 oter 4 er 1 – Sec chapter 3
Image: death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 10.6,10 (Omitting 4.5 and 4.6) and Chapter 10 (Omitting 10.6,10 1.1, 1.2, 1.3, Appendix A 1, 2, 3, 4. Unit 2: Chapter 2 – S – Sec 3.1, 3.2. Unit 3: Chapter 3 – Sec 3.4, 3.5, 3.6. Unit 4: Chapter 4 – Sec 4.1, 4.2, 4.3, 4.4 Unit 5: Chapter 10 – Sec 10.1, 10.2, 10.3, 10.4, 10.5	TUTORIAL 30 3.6,3.7,3.8), Chap 7). Unit 1: Chapt ec 2.1, 2.2, 2.3 &	TOTAL 90 oter 4 er 1 – Sec c Chapter 3
death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 3. (Omitting 4.5 and 4.6) and Chapter 10 (Omitting 10.6,10 1.1, 1.2, 1.3, Appendix A 1, 2, 3, 4. Unit 2: Chapter 2 – S – Sec 3.1, 3.2. Unit 3: Chapter 3 – Sec 3.4, 3.5, 3.6. Unit 4: Chapter 4 – Sec 4.1, 4.2, 4.3, 4.4 Unit 5: Chapter 10 – Sec 10.1, 10.2, 10.3, 10.4, 10.5 REFERENCES	TUTORIAL 30 3.6,3.7,3.8), Chap 7). Unit 1: Chapt ec 2.1, 2.2, 2.3 &	TOTAL 90 oter 4 er 1 – Sec chapter 3
death process in queuing theory – Multi channel models – Bulk Q 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 3 (Omitting 4.5 and 4.6) and Chapter 10 (Omitting 10.6,10 1.1, 1.2, 1.3, Appendix A 1, 2, 3, 4. Unit 2: Chapter 2 – S – Sec 3.1, 3.2. Unit 3: Chapter 3 – Sec 3.4, 3.5, 3.6. Unit 4: Chapter 4 – Sec 4.1, 4.2, 4.3, 4.4 Unit 5: Chapter 10 – Sec 10.1, 10.2, 10.3, 10.4, 10.5 REFERENCES 1. First Course in Stochastic Processes by Samuel Karlin.	TUTORIAL 30 3.6,3.7,3.8), Chap 7). Unit 1: Chapt ec 2.1, 2.2, 2.3 &	TOTAL 90 oter 4 er 1 – Sec 2 Chapter 3
Image: death process in queuing theory – Multi channel models – Bulk Q LECTURE 60 TEXT BOOKS 1. J.Medhi, Stochastic Processes, Chapters 1,2,3 (Omitting 3 (Omitting 4.5 and 4.6) and Chapter 10 (Omitting 10.6,10 1.1, 1.2, 1.3, Appendix A 1, 2, 3, 4. Unit 2: Chapter 2 – S – Sec 3.1, 3.2. Unit 3: Chapter 3 – Sec 3.4, 3.5, 3.6. Unit 4: Chapter 4 – Sec 4.1, 4.2, 4.3, 4.4 Unit 5: Chapter 10 – Sec 10.1, 10.2, 10.3, 10.4, 10.5 REFERENCES 1. First Course in Stochastic Processes by Samuel Karlin. 2. Stochastic Processes by Srinivasan and Metha (TATA M	TUTORIAL 30 3.6,3.7,3.8), Chap 7). Unit 1: Chapt ec 2.1, 2.2, 2.3 &	TOTAL 90 oter 4 er 1 – Sec c Chapter 3

COs	VS	POs	Mapping	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODECOURSE NAMELT							С
XMT503.	A	ABSTRACT ALGEBRA		4	1	0	5
C P	Α						
5 0	0			L	Т	Р	Η
				4	2	0	6
PREREQ	UISIT	E:					
COURSE	OUT	COMES:		•	_		
Course ou	utcome	s:	Don	nain	Leve	l 	
CO1:Define and ExplainProperties of Group with examples Cognitive Reme Unde						emberi rstand	ng ing
CO2: ExplainSubgroups - Cyclic Groups-Order of an Element – Cognitive Under Cosets and Lagrange's Theorem.							ing
CO3: Define and ExplainNormal Subgroups and Quotient Groups Cognitive Reme							ng
- Isomorphism – Homomorphism. Unde							ing
CO4: Def	CO4: Define ring and to Explain properties of rings, Types of Cognitive Rem						
rings, Characteristic of a ring – subrings – Ideals - Quotient rings. Under							
CO5: Ex integral d	plain H omain	omomorphism of rings – Field of quotient of an – unique factorization domain-Euclidean domain.	Cog	nitive	Unde	rstand	ing
IINIT I						10	
Groups · I	Definiti	on and Examples – Elementary Properties of a Grou	n _ F	anivale	nt De	finitio	nc
of a Group	pPern	nutation Groups.	h – r	quivan		1111110	115
UNIT II						18	
Subgroup	s - Cyc	lic Groups-Order of an Element – Cosets and Lagran	ige's	Theore	m.		
UNIT II	[18	
Normal Su	ubgrou	ps and Quotient Groups - Isomorphism –Homomorp	hism.				
UNIT IV						18	
Rings: De	finition	s and Examples - Elementary properties of rings –Is	omor	phism	- Type	s of	
ringsCha	aracteri	stic of a ring – subrings – Ideals - Quotient rings.					
UNIT V						18	
Maxi mal unique fac	and Pr ctorizat	ime IdealsHomomorphism of rings – Field of quoti ion domain-Euclidean domain.	ent o	f an int	egral d	lomain	_
LECTU E	U R	TUTORIAL				TOT	AL
- 60		30				90	
TEXT BO	OOKS						

1. S Arumugam and A Thangapandi Isaac, Modern Algebra, SciTech Publications,
Chennai, 2003.
Unit 1: Chapter 3 Sections 3.1-3.4
Unit 2: Chapter 3 Sections3.5-3.8
Unit 3: Chapter 3 Sections 3.9-3.11
Unit 4: Chapter 4 Sections 4.1-4.8
Unit 5: Chapter 4 Sections 4.9- 4.11, 4.13-14
REFERENCES
1. N. Herstein, Topics in Algebra, John Wiley & Sons, Student 2nd edition, 1975.
2. Vijay, K. Khanna and S.K. Bhambri, A Course in Abstract Algebra, VikasPublishing House
Pvt.Ltd.

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODECOURSE NAMELT						P	С		
	XMT503B		DISCRETE MATHEM	ATICS	4	1	0	5	
С	Р	Δ							
5	0	<u>А</u> 0			L	Т	Р	H	
	·	Ľ, Š	<u> </u>		4	2	0	6	
PREREQ	UISITE: Alg	ebra							
COURSE	OUTCOME	S:							
	(Course Outc	omes:	Domain		Level			
CO1:Def	ine and App	oly truth tab	les and the rules of	Cognitive		Remer	nberii	ng	
propositio	onal and prec	licate calcul	us.	~		Applyi	ng		
CO2: Ap	ply the follo	wing metho	ds direct proof, indirect	Cognitive		Applyi	ng		
proof, and proof by contradiction, and case analysis to									
formulate short proofs.									
CO3:Sol	ve linear recu	arrence relat	ion with constant	Cognitive		Apply	ng		
coefficier	its, non-hom	ogeneous re	currence relations						
and non r	omogeneous	s recurrence	relations using						
methods (of generating	functions.	Declear Alasha	Camiting		T I a d a m		~	
CO4: EX	Explain Basic	clean functi	i Boolean Algebra,	Cognitive		Unders	standi	ng	
$CO5 \cdot An$	nly Rooloon	algobra Lo	aia gatas and aircuits	Cognitivo		Annly	na		
combinat	orial circuits	Boolean ex	pression and	Cognitive		Аррту	ng		
karnaugh	man	, DOOICAII C							
UNIT I	map.							18	
Mathema	tical Logic-	Proposition	l calculus- Basic Logical (operators- condi	tiona	1 state	ments	- Bi	
condition	al statement-	tautologies	- contradictions- equivaler	ice implications.		.i state	1101105	21	
UNIT II			1	F				18	
Norms fo	rms- Theory	of inference	e for the statement calculus	s- The predicate	calc	ulus in	feren	ce	
theory an	d predicate c	alculus.		, produce					
UNIT III								18	
Recurren	ce relations a	and generation	ng functions- recurrence re	lation- solution	of li	near re	curre	nce	
relation w	with constant	coefficients	- Non homogeneous recur	rence relations s	oluti	on of l	Non –	-	
homogen	eous recurrei	nce relations	- Methods of generating fu	unctions.					
UNIT IV								18	
Basic the	orems on Bo	olean Algeb	ra- Duality principle Bool	ean functions.					
UNIT V								18	
Boolean	functions- Ap	oplications of	of Boolean algebra- Logic	gates and circuit	s -co	ombina	torial		
circuits- I	Boolean expr	ression – kai	naugh map.						
	LECT	TURE	TUTO	RIAL			TOT	AL	
TEVE PC	6 00V	0	3	0				90	
	JUK D Tacard 1-1	D Mar 1	· "Diamota Mathematica"	at ma at a market a market 1		ati	t c		
I. J.	ы. I remblay,	K. Manohai	Accrow Hill International	structures with a	ipplic	ations	to Dom:	nt	
	2007								
REFER	ENCE								

1.M.K. Venkatraman, N.Sridharan&N.Chandrasekaran, "Discrete Mathematics", The National Publishing company India, 2000.

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2	1	1	1		1	1	1
CO 2	3	2	1	1			1	1	1
CO 3	3	2	1	1			1	1	1
CO 4	3	2	1	1	1		1	1	1
CO 5	3	2	1	1	1		1	1	1
Total	15	10	5	5	3	0	5	5	5
Scaled value	3	2	1	1	1		1	1	1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODECOURSE NAMELT								C	
XMT5	504A		MODERN ANALYSIS		4	1	0	5	
C	P	٨							
C	1	A							
5	0	0			L	Т	Р	Η	
		i			4	2	0	6	
PRER	EQUIS	ITE:							
COUF	RSE OU	TCOM	IES:						
Cours	e outco	mes:		Don	nain	Leve			
CO1:I	CO1:Define and ExplainMetric Spaces. Cognitive Re								
CO2: Closure	CO2: Define and Explain Subspaces- Interior of a set- Closed sets – Cognitive Reconstruction Closure- Limit point-Dense sets.								
CO3: Define and ExplainComplete metric space: Completeness- Cantor's Cognitive Reintersection theorem-Baire's Category theorem.									
CO4: continu	Explain ity-Disc	Continu ontinuou	ity: Continuity – Homeomorphism-Uniform s functions on R.	Cog	nitive	Remembering			
CO5 :	Define a	and Exj	plainConnectednessand Compact space	Cog	nitive	Reme Unde	emberi rstand	ng ing	
UNIT	Ι			<u>i</u>				18	
Metric sets-eq	Spaces: uivalent	Definition metrics.	ons and examples-Bounded sets in a metric space-Open	ball in	a me	tric spa	ce-Ope	en	
UNIT	II							18	
Subspa	ces- Inte	rior of a	set- Closed sets – Closure- Limit point-Dense sets.			i			
UNIT	III							18	
Comple	ete metri	c space:	Completeness- Cantor's intersection theorem-Baire's C	ategor	y theor	em.			
UNIT	IV							18	
Continu	uity: Cor	tinuity –	Homeomorphism-Uniform continuity-Discontinuous f	unctio	ns on R				
UNIT	V							18	
Conne	ctedness	s: Defin	ition and examples, Connected subsets of R- Connected	ectedr	less an	d co	ontinui	ty;	
Compa and co	act space ntinuity	e: Comp	pact subsets of R-Equivalent characterization for co	mpac	tness-	Compa	ctness	5	
LEC	CTURE	TUT	ORIAL			TO	TAL		
60		30						90	
TEXT	BOOK	S							

1. S.Arumugam& A. Thangapandi Isaac, Modern Analysis, New Gamma Publishing House, Palayamkottai, 2002.Unit 1-Secs 2.1-2.4. Unit 2-Secs 2.5-2.10. Unit 3-Secs 3.1-3.2. Unit 4-Secs 4.1-4.4. Unit 5-Secs 5.1-5.3, 6.1-6.4.

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- 1. N. P. Bali, Real Analysis, An imprint of Laxmi Publications Pvt. Ltd., New Delhi, 2005.
- 2. Sterling K. Berberian, A First Course In Real Analysis, Springer, New York, 2004.
- 3. Robert G. Bartle and Donald R. Sherbert, Introduction to Real Analysis, John Wiley and Sons, New Delhi, 1982.
- 4. Richard R. Goldberg, Methods of Real Analysis, Oxford & IBH Publishing CO. PVT. LTD., New Delhi, 1970.

5. S. C. Malik & Savita Arora, Mathematical Analysis, New Age International LTD., New Delhi, 1992.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

Table 1: COs VS POs Mapping

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

	COUR COD	SE E		L	Τ	P	С		
XM	IT504B		GRAPH THEORY		4	1	0	5	
С	Р	A							
5	0	0			L	Т	Р	H	
-	<u> </u>						_		
					4	2	U	0	
PR	EREQU	J ISITE:							
CO	URSE	OUTCO	MES:						
Coi	irse ou	tcomes:		Domain	l	Level			
CO	1:Defin	e and Ex	xplainKonigsberg Bridge Problem -	Cognitiv	ve	Reme	mbe	ering	
Gra	phs and	subgrap			Under	sta	nding		
inde	ependen	t sets and	l coverings.	~ ••				•	
CO	2: Defi	ine and l	Explain Walks, Trails and Paths –	Cognitiv	ve	Reme	mbe	ering	
Cor	inectedi	ness and	Components - Eulerian Graphs.			Under	stai	nding	
CO	3: Def	fine and	l ExplainHamiltonian Graphs (Omit	Cognitiv	ve	Reme	Remembering		
Cha	vatal T	heorem)	- Characterization of Trees - Centre of a	U		Under	Understanding		
Tre	e.								
CO	4: Defi	ne and E	xplainPlanarity and Properties -	Cognitiv	ive Remembe			ering	
Cha	racteriz	ation of l	Planar Graphs.			Understandin			
CO	5: Defi	ine and I	ExplainDirected Graphs and its	Cognitiv	tive Remem			nbering	
Pro Diil	perties, cstra's a	Kruskal' Igorithm	s algorithm - Shortest Path Problem –			Under	sta	nding	
UN	T I		•			1		18	
Intro	duction	ı - The K	onigsberg Bridge Problem - Graphs and su	ubgraphs	: Defir	ition ar	d		
Exa	mples -	Degrees	- Subgraphs - Isomorphismindependent	sets and	coveri	ngs.			
UN	IT II							18	
Mat	rices - (Operation	is on Graphs - Walks, Trails and Paths $-C$	onnected	lness a	nd			
Con	nponent	s - Euleri	an Graphs.						
UN	III TII							18	
Han	niltonia	n Graphs	(Omit Chavatal Theorem) - Characterizati	ion of Tre	ees - C	entre of	ГаТ	ree.	
UN	ITIV							18	
Plar	arity: I	ntroductio	on - Definition and Properties - Characteri	zation of	Plana	Graph	5.		
UN	IT V							18	
Dire	ected Gi	aphs: Int	roduction - Definitions and Basic Properti	es – Som	e App	lication	5:		
Con	nector l	Problem -	Kruskal's algorithm - Shortest Path Prob	lem – Dij	kstra's	s algorit	hm.		
	LEC	FURE	TUTORIAL			TC	DTA	L	
(D-T-)-	60	A¥ 7	30					90	
TE	KT ROO	UK							

1. S. Arumugam and S. Ramachandran, Invitation to Graph Theory, SciTech Publications (India) Pvt. Ltd., Chennai, 2006. UNIT-I Sec 1.0, 1.1 and Chapter -2 Sec 2.0, 2.1, 2.2, 2.3, 2.4.2.6 Chapter-1 UNIT-II Chapter-2 Sec 2.8,2.9 ,Chapter-4 Sec 4.1,4.2 and Chapter-5 Sec 5.0,5.1 Chapter-5 Sec 5.2, Chapter-6 Sec 6.0, 6.1, 6.2. UNI-III Sec 8.0, 8.1, 8.2. UNIT-IV Chapter-8 UNIT-V Chapter-10 Sec 10.0, 10.1 Chapter-11 Sec 11.0, 11.1, 11.2 **REFERENCES** 1. Narsingh Deo, Graph Theory with applications to Engineering and Computer Science, Prentice Hall of India, 2004.

2. Gary Chartrand and Ping Zhang, Introduction to Graph Theory, Tata McGraw-Hill Edition, 2004.

Table 1: COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODE				COURSE NAME	L	Т	Р	С		
XN	AT50	IT505 NUMERICAL METHODS WITH 'C' 0 0 2 PROGRAMMING(Practical)						2		
C	Р		A							
2	0		0		L	Т	Р	H		
					0	0	2	2		
PR	ERI	EQI	UISITI	E:						
CC)UR	SE	OUTC	OMES:						
Co	urse	ou	tcomes	:	Domain	Le	vel			
CC Ex ope)1:A press erato	ppl ion rs.	y Varia s, Matł	ables and Data types, Operators and mematical Functions-Input and output	Cognitive	Ap	plying	5		
CO2: Explain Decision making and Branching using IF statements, GOTO statement, Decision making and looping - WHILE DO FOP statements and Arrays								Understanding Applying		
CC on fur	03:U chan	seH ract	landling ers, St	g of character strings, Arithmetic operations ring handling functions and User defined	Cognitive	Ap	oplying	5		
CC)4: S	olv	ing alg	ebraic and transcendental equations.	Cognitive Applying			3		
CC)5:]	Fin	d Interp	polation with equal and unequal intervals.	Cognitive	Remembering				
Lis	st of	Pra	cticals		£					
	1.	Sol	ution of	f a Quadratic Equation (all cases)						
	2. Sorting of names in alphabetical order. 5. Matrix Operations (Addition, Subtraction,									
	3 String Manipulation without using String functions (String longth String									
	Comparison, String copy, Polidrome checking, counting words and lines in strings –									
	use function pointers).									
	4.	Bis	ection a	and Newton-Raphson method						
	5.	Lag	granges	Interpolation formula.						
	6.	Gaı	uss Elin	nination Method.						
	7.	Eul	er and]	Runge-Kutta (II order only) methods.						
	8.	Tra	pezoida	al and Simpson's 1/3rd Rule.						

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2			1				1
CO 2	3	2			1				1
CO 3	3	2			1				1
CO 4	3	2			1				1
CO 5	3	2			1				1
Total	15	10			5				5
Scaled value	3	2			1				1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

Semester VI

	COU	RSE DE	COURSE NAME	AME L T P C			С				
X	MT60	1A	LINEAR ALGEBRA		4	1	L 0 5				
С	Р	Α									
5	0	0			L	Т	Р	Η			
					4	2	0	6			
Pl	RERE	QUISI	TE:Matrices								
C		FOI	TCOMES								
U	UUNC		ICOWES.	Dom	ain	Ιον	۵Ì				
С	01:De	e fine ar	nd Explain vector spaces subspaces linea	r Cogi	nitive	Ren	ember	ino			
Ŭ	transformation and span of a set with examples							ling			
C	CO2: Define Linear Independence. Basis and Dimension Cognitive Remember							ing			
an	d to fi	ndRan	k and Nullity.	8-		Remembering					
C	03:Ex	plain	matrix of a linear transformation .Inner	Cogi	nitive	Remembering					
Pr	oducts	space a	nd to Define with examples	0		Understanding					
or	thogo	nality, (GramSchmidtorthogonalisation					U			
pr	ocess	and or	thogonal complement.								
C	04: D	efine A	Algebra of Matrices, Types of Matrices and	l Cogi	nitive	Ren	nember	ing			
to	find t	he inve	erse of a matrix and Rank of a matrix.								
C	05: E	Explain	Characteristic equation and Cayley –	Cogi	nitive	Ren	nember	ing			
Ha	amilto	n theo	rem and to find Eigen values and			Und	erstand	ling			
Ei	gen ve	ectors.	-								
U	NIT I	Vect	or Spaces			•	~	18			
V	ector s	paces -	- Definition and examples – Subspaces-lin	ear trans	forma	tion –	Span c	of a set.			
U	NIT I	[Basis	and Dimension					18			
Li	near I	ndepen	dence – Basis and Dimension –Rank and I	Nullity.							
U	NITII	I Mat	rix and Inner Product Space					18			
Μ	atrix c	of a line	ear transformation -Inner product space – l	Definition	n and	examp	oles –				
O	thogo	nality -	- Gram Schmidt orthogonalisation process	– Orthog	gonal	Comp	lement	•			
U	UNIT IV : Theory of Matrices 18										
A	gebra	of Mat	rices - Types of Matrices - The Inverse of	a Matrix	x − Ele	ement	ary				
Tı	ansfor	matior	ns – Rank of a matrix.								
U	NIT V	': Chai	racteristic equation and Bilinear forms					18			
C	haract	eristic	equation and Cayley -Hamilton theorem –	Eigen va	alues a	and Ei	gen veo	ctors			
	LEC	FURE	I	TUTOR	IAL		TOTA	L			
	60			30			90				
T	EXT I	BOOK									

1. Arumugam S and Thangapandi Isaac A, "Modern Algebra", SciTech Publications (India) Ltd., Chennai, Edition 2012. Unit1: Chapter 5, Sec 5.1 to 5.4, Unit2: Chapter 5, Sec 5.5 to 5.7, Unit3: Chapter 5, Sec 5.8, Chapter 6, Sec 6.1 to 6.3, Unit4: Chapter 7 Sec 7.1 to 7.5 Unit5: Chapter 7, Sec 7.7, 7.8

REFERENCE

1. I. N. Herstein, "Topics in Algebra", Second Edition, John Wiley & Sons (Asia), 1975.

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COU	JRSE C	ODE	COURSE NAME		L	Т	Р	C		
XMT60)1B		NUMBER THEORY		4	1	0	5		
С	Р	Α								
5	0	0			L	Т	Р	H		
	i				4	2	0	6		
PRERF	OUISIT	`E:				1	L	1		
COURS	SE OUT	COMES:								
				D	omai	n	Level			
CO1:D	efine and	Explain	Euclid's Division Lemma – Divisibility	- C	logniti	ve	Remem	bering		
The Linear Diophantine Equation – The Fundamental Theorem of Understan										
Arithmetic.										
CO2: 1	Define an	d Explain	Permutations and Combinations –	C	Cogniti	ve	Remem	bering		
Fermat'	s Little T	heorem –	Wilson's Theorem – Generating		U		Underst	anding		
Functio	ns.		C C					U		
CO3:D	efine and	Explain	Basic Properties of Congruences, Resi	due C	Cogniti	ve	Remem	bering		
Systems. Linear Congruences – The Theorems of Fermat and Understand										
Wilson.	Wilson.									
CO4:D	4:Define and Explain The Chinese Remainder Theorem – Cognitive Remembering							bering		
Polynor	Polynomial Congruences – Combinational Study of F(n).									
CO5: 1	Define an	d Explain	Formulae for $d(n)$ and $s(n) -$	C	Cogniti	ve	Remem	bering		
Multipli	icative A	rithmetic	Function – The Mobius Inversion		-		Underst	anding		
Formula	ì.									
UNIT I								18		
Euclid's	s Divisio1	n Lemma	- Divisibility - The Linear Diophantine	e Equat	ion – '	The 1	Fundame	ental		
Theorer	n of Aritl	hmetic.								
UNIT I	T							18		
	-									
Permuta	ations and	l Combin	ations – Fermat's Little Theorem – Wils	son's T	heore	m – (Generati	ng		
Function	ns.									
UNIT I	II							18		
Basic P	roperties	of Congru	uences, Residue Systems. Linear Congr	uences	– The	The	orems of	f Fermat		
and Wil	son Revi	sited.								
UNIT I	V							18		
The Chi	nese Rer	nainder T	heorem – Polynomial Congruences – C	ombina	ational	Stuc	dy of F(r	ı).		
IINIT V								18		
Formula	ne for d(n	and s(n)	– Multiplicative Arithmetic Function –	- The M	Inhius	Inve	ersion Fo	rmula		
1 Official				ITORI		111 /		I.		
	60	RL	30				90	-		
TEXT	BOOK						70			
1.	Number '	Theory by	George E Andrews, Hindustan Publish	ing Co	rporat	ion -	- 1984 T	Edition		
Unit I	Init I Chapter - 2 Sec. 2.1 - 2.4 pages 12-20									
Unit II	: (Chapter –	3 Sec. 3.1. 3.4 pages 30-44							
Unit III	: (Chapter –	4Sec. 4.1 – 4.2 Pages 49 – 55. Sec. 5.1-	- 5.2 Pa	iges 58	8-65				
Unit IV	: (Chapter –	4 Sec. 5.3 – 5.4 pages 66-74. Sec. 6.1 F	Pages 7	5-81					
Unit V	Unit V : Chapter -5 Sec. $6.2 - 6.3$ Pages 82-92									

REFERENCES

1. Basic Number Theory by S.B.Malik, Vikas Publishing House Pvt. Ltd.,

2. A First Course Theory of Numbers by K.C.Chowdhury. Asian Books Pvt. Ltd., I Edition, (2004).

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

 $1-5 \rightarrow \overline{1, 6-10} \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODE	COURSE NAME	L	ТР	C											
XMT602A	COMPLEX ANALYSIS	6 4	1 0	5											
C P A															
5 0 0		L	T P	Н											
		4	2 0	6											
PREREQUISIT	Е:		L												
COURSE OUTCOMES:															
		Domain	Level												
CO1:Explain Cl	R equations to verify analytic functions ar	nd to Cognitive	Understand	ling											
find harmonic fu	nctions and harmonic conjugate.	C	Remember	ing											
CO2: ExplainC	onformal mappings - Linear and Non-line	ear Cognitive	Understand	ling											
transformationsa	nd to find Bilinear transformations		Remember	ing											
CO3:Explain C	Integral Cognitive	Remember	ing												
formulaand to fir	ndsimple problems.		Understand	ling											
CO4: Explain Ty	pes of singularities - Properties of	Cognitive	Understand	ling											
singularitiesand t	to find Taylor's and Laurent's series – Exp	pansion.	Remember	ing											
CO5: ExplainR	esidue theorem and to find Integration of	Cognitive	Understand	ing											
Tunctions of the t	ype involving cosxsinx.		Remember	ing											
Analytic function	- Cauchy Riemann Equation in Cartesia	n and polar co-ordinates -	Harmonic	10											
function Properti	es and applications.	in and polar co-ordinates -	mannome												
UNIT II				18											
Conformal mapp	ings - Linear and Non-linear transformati	ons – Bilinear transforr	nations -												
Properties and ap	plications.														
UNIT III				18											
Integration in the	Complex plane - Cauchy's Integral theor	rem - Cauchy's Integral f	ormula -												
Liouville's theore	em - Maximum modulus theorem - Appli	cations and simple proble	ms.												
UNIT IV		· · · · · ·	·	18											
Taylor's and Lau	rent's series - Expansion of functions in r	power series - Singular po	oints - Type	s of											
singularities - Properties of singularities - Identification of singularities.															
UNIT V 18															
Calculus of Resi	dues: Residue theorem - Integration of fu	nctions of the type involv	ing cosxsin	Х-											
Applications and	problems relating to residues.	ΛΝΙΑΙ													
LECIUKE	TUT	UKIAL	IUIAL												
60	30		90												
TEXT BOOK				60 30 90											
1. S. Narayanan & T.K. ManickavasagamPillai, Complex Analysis, S. Viswanathan Publishers,															
---	---	-------------------------	------------------------------	--	--	--	--	--	--	--					
Chennai, 1997.	Unit 1: Chapter 1,	Unit 2: Chapter 2,	Unit 3: Chapter 3												
Unit 4: Chapter 4,	Unit 5: Chapter 5														
REFERENCES															
1. S. Arumugam, A.	Thangapandi Isaac& A	. Somasundaram, Con	nplex Analysis, SciTech												
Publications, India	a, Pvt. Ltd., 2004.														
2. S. Ponnusamy, Fo	2. S. Ponnusamy, Foundations of Complex Analysis, 2ndEdition, Narosa Publication, New														
Delhi, 2005.															
3.R. V. Churchill &J	.W.Brown, Complex v	ariables and applicatio	ns, 5thEdition, McGraw Hill,												
Singapore, 1990.															

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

COs VS POs Mapping

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODE	COURSE NAME		L	Τ	Р	С
XMT602B	MATHEMATICAL MODELLIN	G	4	1	0	5
C P A						
5 0 0			L	Т	Р	H
			4	2	0	6
PREREQUISIT	E:					
COURSE OUT	COMES:					
		Domain	Lev	vel		
CO1: Define and	Explain Linear Growth and Decay	Cognitive	Rer	nemberi	ng	
Models – Non-Li	near Growth and Decay Models –		Unc	lerstand	ing	
Compartment Mo	odels – Dynamic problems – Geometrical					
problems.		~				
CO2: Define an	d Explain Population Dynamics –	Cognitive	Rer	nemberi	ng	
Epidemics – Con	partment Models – Economics –		Unc	lerstand	ıng	
Medicine, Arms	Race, Battles and International Trade –					
Dynamics.		<u> </u>		1 1		
CO3: Define ar	d Explain Planetary Motions – Circular	Cognitive	Rer	nember	ng	
Motion and Mot	ion of Satellites – Mathematical Modelling		Unc	ierstand	ing	
CO4 Define and	Final Equations of Second Order.	Camiting	Dar			
Difference Equat	Explain Basic Theory of Linear	Cognitive	Understanding			
Economics and E	ions with Constant Coefficients –		UIIC	ierstand	ing	
Genetics Proba	hility Theory					
CO5, Define on	d Explain Solutions that can be Modelled	Comitivo	Dor	nombor	na	
Through Graphs	Mathematical Modelling in Terms of	Cognitive	Inc.	lerstand	ing ing	
Directed Graphs	Signed Graphs, Weighted Digraphs and		UIK	iei stand	ing	
Unoriented Gran	hs					
			I			18
Mathematical M	odelling through Ordinary Differential Equa	tions of Fi	rst ord	er : Lin	ear Gro	wth and
Decay Models –	Non-Linear Growth and Decay Models – Co	mpartment	Mode	els – Dv	namic r	roblems
– Geometrical pr	oblems.	r		5	r	
UNIT II						18
Mathematical M	odelling through Systems of Ordinary D	ifferential	Equa	tions of	f First	Order :
Population Dyna	mics – Epidemics – Compartment Models	– Econon	nics –	Medici	ne, Arn	ns Race,
Battles and Intern	national Trade – Dynamics.				,	
UNIT III						18
Mathematical M	odelling through Ordinary Differential Ed	quations o	f Seco	ond Or	der : F	lanetary
Motions - Circu	lar Motion and Motion of Satellites - M	- Iathematica	al Mo	delling	through	n Linear
Differential Equa	tions of Second Order – Miscellaneous Math	ematical M	Iodels			
UNIT IV						18
Mathematical M	odelling through Difference Equations : Sin	mple Mode	els – l	Basic T	heory o	f Linear
Difference Equat	ions with Constant Coefficients – Economi	ics and Fir	ance -	- Popul	ation D	ynamics

and Genetics – Probability Theory.								
UNIT V		18						
Mathematical Modelling through Graphs : Solution	s that can be Mode	elled Through Graphs –						
Mathematical Modelling in Terms of Directed Grap	ohs, Signed Graphs,	Weighted Digraphs and						
Unoriented Graphs.								
LECTURE	TUTORIAL	TOTAL						
60	30	90						
TEXT BOOK	•							
1. J.N. Kapur, Mathematical Modelling, Wiley Eastern	Limited, New Delhi,	1988.						
Unit 1: Chap 2, Sec 2.1 – 2.6, Unit 2: Chap 3, Sec 3.1 – 3.6, Unit 3: Chap 4, Sec 4.1 – 4.4								
Unit 4: Chap 5, Sec 5.1 – 5.5, Unit 5: Chap 7, Sec 7.1 – 7.5								
REFERENCES								
1. J.N. Kapur, Mathematical Models in biology and	d Medicine, EWP, Ne	ew Delhi, 1985.						

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1		1	1	1
CO 2	3	2		1			1	1	1
CO 3	3	2		1			1	1	1
CO 4	3	2		1	1		1	1	1
CO 5	3	2		1	1		1	1	1
Total	15	10	0	5	3	0	5	5	5
Scaled value	3	2		1	1		1	1	1

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COI	URSE C	CODE	COURSE NAME		L	Т	P	С		
XMT6)3A		LINEAR PROGRAMMIN		4	1	0	5		
C	P	٨								
C	1	A								
4.5	0.5	0.5				L	Т	Р	H	
						4	2	0	6	
PRERI	EQUISI	FE: Linear	Algebra			I				
COUR	SE OUT	COMES:								
]	Dom	ain	Le	vel		
CO1:F	indGrap	hical Solut	tion, Solve LPP using Simplex Metho	d, (Cogn	itive	Re	membe	ering	
Big M l	Method a	andTwo Pł	nase Method.				Ap	plying		
CO2:	F ind For	mulation of	of Primal - Dual Pairs and Solve dual	(Cogn	itive	Re	membe	ering	
Simplex	x Method	1.]	Psycł	nomo	Ap	plying		
CO3.6	alva Tra	nonortatio	n Duchlama and Assignment Duchla	1	Com	:+:	Gu	ided R	esponse	
by usin	g various	s methods.	n Problems and Assignment Proble	IIIS V	Cogn	litive	Ар	prying		
CO4:S	olve Seq	uencing Pi	roblems with 'n' jobs and 'k' machine	s - (Cogn	gnitive Applying				
Problen	ns with '	n' jobs and	d 2 machines- Problems with 2 jobs and	nd						
k mach	ines - Pro	oblems wit	th 2 jobs and 3 machines.	1	Affec	ctive	Re	ceiving	5	
CO5: S	Solve Tw	vo persons	Zero sum games - maximin and	(Cogn	iitive	Ap	plying		
strategi	x princip es - Grat	hical meth	nod - Dominance property.							
									18	
Introdu	ction to a	onvex set	s - Mathematical Formulation of LPP	- Gra	nhice	al Sol	ution	-Simn	10 ex	
Method	– Big M	I Method -	- Two Phase Method.	Olu	pine	1 00	ution	Simp		
UNIT I	I								18	
Duality	in Linea	r Program	ming: Formulation of Primal - Dual P	airs -	Dua	lity a	nd Si	mplex	Method	
- Dual S	Simplex	Method.				•				
UNIT I	II								18	
Transpo	ortation I	Problems:	Mathematical formulation of the prob	lem -	findi	ng in	itial b	asic fe	asible	
solution	using N	orth West	Corner Rule and Vogel's approximat	ion m	etho	d -M	oving	toward	ds	
Optima	lity - Un	balanced 7	Fransportation Problems. Assignment	Probl	ems:	Mat	hema	tical		
formula	tion of A	Assignmen	t Problems - Assignment algorithm –	Routi	ng P	roble	ms.		1.0	
UNITI	V · D				1 1	• ,	1 4 9	· 1	18	
Sequen	cing Pro es- Probl	ems: Pro	polems with 'n' jobs and 'k' machines 2 jobs and k machines - Problems with	- Pro h 2 iol	olem bs an	s wit id 3 r	n n´j nachii	jobs ar nes.	na 2	
UNIT V	V			J.2.					18	
Game T	Theory: T	wo person	ns Zero sum games - maximin and min	nimax	prin	ciple	- Gai	nes wi	thout	
saddle j	points - N	Mixed strat	tegies - Graphical method - Dominanc	e pro	perty	7.				
	LECTU	JRE]	TUTO	ORIA	L	1	ТОТА	L	
	60		3	0			(90		

TEXT BOOK

1. KantiSwarup, P. K. Gupta& Man Mohan, Operations Research, Sultan Chand& Sons, New Delhi, Twelfth Edition, 2005.Unit 1: chapter 2: 2.1,2.2, chapter 3: 3.2, chapter 4; 4.1, 4.4. Unit 2: chapter 5: 5.2, 5.3, 5.7, 5.9.Unit 3: Chapter 10: 10.2,10.9, 10.14, Chapter 11: 11.2, 11.3.Unit 4: Chapter 12: 12.1 – 12.6.Unit 5: Chapter 17: 17.1 – 17.7.

REFERENCES

1.P. K. Gupta & D. S. Hira, Operations Research, S. Chand & Company Ltd., New Delhi, 2002.

2.J. K. Sharma, Operations Research theory and its applications, 2nd Edition, Macmillan, New Delhi, 2006.

3.R. Panneerselvam, Operations Research, Prentice Hall of India Pvt. Ltd., New Delhi, 2002.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO 1	3	2		1	1			1	1
CO 2	3	2		1				1	1
CO 3	3	2		1				1	1
CO 4	3	2		1	1			1	1
CO 5	3	2		1	1			1	1
Total	15	10	0	5	3	0	0	5	5
Scaled	3	2		1	1			1	1
value									

COs VS POs Mapping

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$

COURSE CODE	COURSE NAME	L	Т	Р	С
XMT603B	FINANCIAL ACCOUNTING	4	1	0	5
C P A 5 0 0		T.	Т	Р	н
		1	2	0	6
PREREOUISITE:	1	•		v	.
COURSE OUTCOM	IES:				
		Doma	in	Level	
CO1:Prepare financial Accounting Principles.	l statements in accordance with Generally Accept	ted Cogni	tive	Applyin	ıg
CO2: Prepare Bank R errors.	econciliation Statement and to identify and rectify	y Cogni	tive	Applyin	ıg
CO3:Compare and s	solve single entry to double entry system.	Cogni	tive	Applyin	ıg
CO4:Calculate accou	ant current, average due date and insurance	Cogni	tive	Applyin	ıg
CO5: Calculate depr	reciation on fixed assets.	Cogni	tive	Applvin	g
UNIT I					18
Final Accounts - Introdu Revenue expenditure	action - Manufacturing Account -Trading Accourt	nt - Distinctio	on bety	ween Capi	tal and
Assets and Liabilities -	Adjustments	s aujustinent	s - Cla	issincation	1 01
UNIT II					18
Rectification of errors -	Bank Reconciliation Statement.				10
UNIT III					18
Single Entry - Objective	es - Definition - Salient features - Limitations of S	Single Entry	- Asce	rtainment	of
Profit - Statement of Af	fairs Method - Conversion Method - Difference b	etween State	ement	and Affair	s and
Balance Sheet.					1.40
UNITIV		T C		1 . 1	18
Account current - Avera Average clause - Loss o	age Due Date - Insurance claim - Abnormal items f Profit.	- Loss of pr	operty	and stock	_
UNIT V					18
Depreciation, Reserves depreciation - causes of Balance Method - Chan Revaluation Method.	and Provisions - Depreciation, Depletion and Am depreciation - methods of recording depreciation ges in method of depreciation - Machine Hour Ra	ortization - (- straight lin ate Method -	Object ie met Deple	ives of pro hod - Dim tion Meth	oviding inishing od -
LECTURE	TUTO	RIAL	ТО	TAL	
60	30		90		
TEXT BOOK					•
1. T.S.Reddy&A.Mur 2. M.C.Shukla, T.S.Gre	thy - Financial Accounting - recent edition, N wal. Advanced Accounts (volume I) recent edition	/larghan Pul on, S.Chand&	olicati & Co.,	ons, Che Ltd., New	nnai. ⁄ Delhi.
REFERENCES					
1 R.S.N. Pillai, Bagav	vathi&S.Uma - Advanced Accounting (Finan	cial Accour	nting)	volume I	,
2. R.L. Gupta & V.K.	Gupta, Financial Accounting, recent edition,	Sultan Cha	and &	Sons, Ne	ew
Delhi. 3. S.P. Jain & K.L. Nara	anj, Advanced Accountancy, Kalyani Publication	s, Ludhiana.			

COs VS POs Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3				1	1		1
CO2	2	2					2		1
CO3	2	2				1			1
CO4	2	2				1			
CO5	2	2							
Total	11	11	0	0	0	3	3	0	3
Scaled	3	3	0	0	0	1	1	0	1
value									

 $1-5 \rightarrow 1, 6-10 \rightarrow 2, 11-15 \rightarrow 3$