

पं रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)

दूरभाष : 0771—2262802 (अकादमिक),0771—2262540 (कुलसचिव),फैक्स-0771—2262818, 2262607, ई-मेल: academicprsu3 û gmail.com

क्रमांक 1417 /अका. /पाठ्यक्रम / 2025

रायपुर, दिनांक :29/07/2025

प्रति,

प्राचार्य

संबद्ध समस्त महाविद्यालय पं.रविशंकर शुक्ल विश्वविद्यालय रायपुर

विषय :- स्नातक स्तर B.A./B.Sc. Part-III के पाठ्यक्रम में गणित विषय के Optional-I चार प्रश्न पत्रों के प्रकाशन के संबंध में।

संदर्भ :- विश्वविद्यालय का पत्र क्रमांक 1276/अका./2025, दिनांक 10.07.2025

---00---

शिक्षा सत्र 2025–26 बी.ए. / बी.एस.सी. भाग–तीन के पाठ्यक्रम गणित विषय के Optional-I के निम्नलिखित चार प्रश्न–पत्रों के पाठ्यक्रम संलग्न कर प्रेषित किए जा रहे हैं :-

Math-5T Optional I (Any One)

- 1. Mechanics
- 2. Numerical Methods
- 3. Linear Algebra
- 4. Integral Transforms and Fourier Analysis

आपसे अनुरोध है कि इसे यथा स्थान समाहित कर B.A./B.Sc. Part-III के शिक्षकों एवं छात्रों को अवगत कराते हुए अध्ययन—अध्यापन कार्च संपन्न करावें।

संलग्न :- उपरोक्तानुसार

भवदीय.

उप कुलसचिव (अका.)

रायपुर, दिनांक :29/07/2025

पृ. क्रमांक 1418/अका./पाठ्यक्रम/2025 प्रतिलिपि :-

- 1. उप-कुलसचिव परीक्षा / सहायक कुलसचिव गोपनीय विभाग
- 2. प्रभारी अधिकारी, नामांकन / उपाधि प्रकोष्ठ, कम्प्यूटर सेंटर गोपनीय / विकास विभाग
- 3. संचालक, आई.क्यू.ए.सी. सेल / अधिष्टाता, छात्र कल्याण
- 4. संचालक, महाविद्यालय विकास परिषद
- 5. संचालक, भारतीय राष्ट्रीय उपभोक्ता सहकारी संघ मर्यादित, 320AD इंदिरा नगर, स्पीकर हाउस के सामने, कांके रोड, रांची

6. कुलपति जी के सचिव / कुलसचिव के निज सहायक, पं.रविशंकर शुक्ल विश्वविद्यालय, रायपुर को सूचनार्थ अग्रेषित।

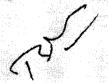
> व्हा अधिकारी (अका. —न्दर्भः/८

Scheme of B. Sc. Mathematics

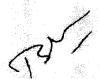
Year	Course Code	B A Subject Name	Theory/ Practical	Total Credit		ial Pics	
					Max	Min	
	MATH-1T Calculus	Calculus	Theory	4	50		
**** ;	MATH-2T	Algebra	Theory	4	50	- \$3	
First year	MATH-IP	Lab 1: Calculus and Algebra	Practical	2	50	1 m	
	(Any One)	Project 1 History of Mathematicians	Project	2	50		
(10000) à Mauri Ma e accessore conservant	MATH-3T	Differential Equations	Theory	4	50		
Second year	MATH-4T	Real Analysis	Theory	4	50	3.	
	MATH-2P (Any One)	Lab 2: Differential Equations and Real Analysis	Practical	2	50		
		Project 2: History of Mathematicians	Project	2	50		
	MATH-5T Optional I (Any One) Linear Algebra Theory Integral Transforms and Fourier Analysis Discrete Mathematics Theory MATH-6T Terrors and Differential Geometry		Mechanics	Theory	4	50	
		Numerical Methods	Theory	4	50		
		Linear Algebra	Theory	4	50		
		Theory	4	50			
Third		Discrete Mathematics	Theory	4	50		
year		Tensors and Differential Geometry	Theory	4	50		
(Any One	(Any One)	Number Theory	Theory	4	, \$.		
		Probability and Statistics	Theory	4	50		
	MATH-3P (Any One)	Lab 3: Mathematics Paper 1 and Paper 2	Practical	2	50)	
	v. * *	Project 3: History of Mathematicians	Project	2	50	17	

Note: There shall be four extra credits in all the years of under graduation as internship/apprenticeship. The certificate of extra credits would be provided by the concern university and is nor mandatory.

		Part A: Introd	uction	
Pro	gram: Degree Course	Class: B. A. / B.Sc. Part III	Year: 2022	Session:2024-2025
1	Course Code	<u> </u>	aper - MATH - :	5T(I)
2	Course Title	Mechanics		
3	Course Type	Theory		iliyahat jatiin aan aa ka ka mata aa ka maan aa ka maan ah aa aa ka maan ah aa a
4	Pre-requisite (if any)		No	
5	Course Learning Outcome (CLO)	single centre,	ith subject matte to which were	er, which has been the drawn mathematicians,
	Disease all a complete programme in the comp		onomers and eng cessary condition	meers togetner. Is for the equilibrium of
	e and the second			is forces and learn the
		principle of vir acting on a par		ystem of coplanar forces
	- Page 199			of materialistic systems uniform cable hanging
	\$11 × 12		kinematics and k	inetics of the rectilinear
			motions of a cillatory motions	particle including the
	9	• Learn that a	particle moving	under a central force
		1 s 3s 14.575		ere deduced by him long
		beforethe mati	nematical theory	given by Newton.
6	Credit Value		4	
7	Total Marks	Maximum Marks : 50	Min	imum Passing Marks: 17
		\mathcal{J}		
		a d'		
	TEVAN CONTRACTOR			



Unit	Topics	No, of
I	Statics: Coplanar forces, Couples, Moment of force and a couple about a point and a line, Equilibrium of a particle and of a system of particles; Work and potential energy, Principle of virtual work for a system of coplanar forces acting on a particle, Forces which can be omitted in forming the equations of virtual work.	Period:
I	Centre of Gravity and Common Catenary: Concepts of Centre of mass and Centre of gravity, Centre of gravity of an uniform arc, plane area and solids of revolution; Common catenary, Approximations of a catenary.	12
III	Rectilinear Motion: Simple harmonic motion and its geometrical representation, Motion under inverse square law, Motion in resisting media, Concept of terminal velocity, Motion of varying mass.	12
IV	Motion in a Plane: Kinematics and kinetics of motion, Expressions for velocity and acceleration in cartesian, polar and intrinsic coordinates; Motion in a vertical circle, projectile and cycloidal motion.	12
V	Central Orbits: Equation of motion under a central force, Differential equation of an orbit, (p, r) equation of an orbit, Apses and apsidal distances, Areal velocity, Characteristics of central orbits, Kepler's laws of planetary motion.	12



Part C - Learning Resource

Text Books, Reference Books:

- 1. R. S. Varma (1962). A Text Book of Statics. Pothishala Pvt. Ltd.
- 2. P.L. Srivastava (1964). Elementary Dynamics. Ram Narain Lal, Beni PrasadPublishers Allahabad.
- 3. J. L. Synge & B. A. Griffith (1949). Principles of Mechanics. McGraw-Hill.
- 4. S.L. Loney (2006). An Elementary Treatise on the Dynamics of a Particle and of Rigid Bodies. Read Books.
- 5. A. S. Ramsey (2009). Statics. Cambridge University Press.
- 6. A. S. Ramsey (2009). Dynamics. Cambridge University Press.

E-Resources

- 1. Suggested Equivalent online courses: Web link NPTEL/SWAYAM/ MOOCs
- 2. https://www.voutube.com/playlist?list=PLwdnziV3ogoXUbQmP-T2gPhYXeEcxP6U8

Part D: Assessment and Evaluation
Suggested Continuous Evaluation Methods:

Maximum Marks:

50 Marks



This is to certify that the syllabus is framed by the Central Board of Studies (Mathematics) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

	isgan.		~ 1	
1.	Dr. Premlata Verma		Chairman	
	Asst. Prof. Govt. Bilasa Girls PG College, Bilaspur			\sim
2	Prof. R.R. Sahu	•	Member	Wh
٠.	Asst. Prof.			V
	Govt. MMR PG College, Champa			
3.	Mr. Yetendra Upadhyay	•	Member	N.V.
	Asst. Prof.			γ
	Govt. N.K. College, Kota			N ac
4.	Ram Lakhan Pandey		Member	Mush
	Asst. Prof.			
	Dr. B.R. Ambedkar Govt. College, Baloda			12.7
5.	Dr. Arun Kumar Mishra	•	Member	MU _
	Professor			
	Govt. DT PG College, Utal			<i>A</i>
6.	Dr. Shabnam Khan	.	Member	オピー
	Professor			
~	Govt. Digvijay PG College, Rajnandgaon			مسار م
7.	Dr. Padmayati	*	Member	(o
	Professor			
0	Govt. VYT PG Auto. College, Durg		X 3 (a the
о.	Dr. Anjali Chandravanshi		Member	GA
	Asst. Prof.			
a ·	Govt, J.Y. Chhattisgarh College, Raipur Manisha Gupta		Member	mempla
2.	Asst. Prof.	**************************************	IVICIIIOCA	0711
	GNA Govt. PG College, Bhatapara, Raipur			
10	. Mrs. Sangeeta Pandey	•	Member	Sant
* •	Asst. Prof.			Ofter
V . K .	R.G. Govt. PG College, Ambikapur			
11	. Dr. S.K. Bohre	4	Member	Chal
	Asst. Prof.			42
	I.G. Govt. PG College, Vaishalinagar, Bhilai			
12	. Dr. Samir Dashputre	•	Member	2
	Asst. Prof.		i Lisuri	7 20
	Govt. College, Arjunda, Balod			A L
13	. Dr. Chandrajeet Singh Rathore		Member	1
	Asst. Prof.			
	Govt. Jajwalyadev Naveen Girls PG College, Ja	njgir		
				Lulla
14	. Dr. Shri Nath Gupta		Member	BUTE-
سز ای	K. Govt. Arts & Science College, Raigarh		X.J.	
15	. Dr. Raghu Nandan Patel	•	Member	12
	Asst. Prof.			
	Govt. MLS College, Seepat			

······································		Part A: Introduct	ion	
Pro	gram: Degree Course	Class: B. A. / B.Sc. Y Part III	ear: 2022	Session:2024-2025
1	Course Code	Pape	r – MATH – 5'	rdo
2	Course Title	Numerical Methods		
3	Course Type	Theory		
4	Pre-requisite (if any)		No	
5	Course Learning Outcome (CLO)	and to check the a Learn about var methods to find n Solve initial a differential equati	al solutions ations. clutions of systemic	of algebraic and term of linear equations solutions. ting and extrapolating ons. value problems in
6	Credit Value		4	
7	Total Marks	Maximum Marks : 50	Minir	num Passing Marks :

	Total Periods: 60	
Unit	Topics	No. of Periods
!	Numerical methods for solving algebraic and transcendental equations: Round-off error and computer arithmetic, Local and global truncation errors, Algorithms and convergence; Bisection method, false position method, fixed point iteration method, Newton's method and secant method for solving equations.	12
II	Numerical Methods for Solving Linear Systems: Partial and scaled partial pivoting, LU decomposition and its applications, Thomas method for tridiagonal systems; Gauss-Jacobi, Gauss-Seidel and successive over-relaxation (SOR) methods.	12
Ш	Interpolation: Lagrange and Newton interpolations, Piecewise linear interpolation, Cubic spline interpolation, Finite difference	12
A		

	operators, Gregory-Newton forward and backward difference interpolations.	
IV	Numerical Differentiation and Integration: First order and higher order approximation for first derivative, Approximation for second derivative; Numerical integration: Trapezoidal rule, Simpson's rule and its error analysis, Bulirsch-Stoer extrapolation methods, Richardson extrapolation.	12
V	Initial and Boundary Value Problems of Differential Equations: Euler's method, Runge-Kuttamethods, Higher order one step method, Multi-step methods; Finite difference method, Shooting method, Real life examples: Google search engine, 1D and 2D simulations, Weather forecasting.	12

Part C - Learning Resource

Text Books and Reference Books:

- 1. Brian Bradie, A Friendly Introduction to Numerical Analysis, Pearson, 2006
- 2. C. F. Gerald & P. O. Wheatley, Applied Numerical Analysis (7th edition), Pearson Education, India. 2008
- M.K. Jain, S. R. K. Iyengar & R. K. Jain. Numerical Methods for Scientificand Engineering Computation (6th edition). New Age International Publishers. 2012
- 4. Robert J. Schilling & Sandra L. Harris. Applied Numerical Methods for Engineers Using MATLAB and C. Thomson-Brooks/Cole.1999

E- Resources:

- 1. Suggested Equivalent online courses: Web link NPTEL/ SWAYAM/ MOOCs
- 2. https://www.youtube.com/watch?v=pOtnzAX1XvI&list=PL3pGy4HtqwD0CW
 https://www.youtube.com/watch?v=pOtnzAX1XvI&list=PL3pGy4HtqwD0CW

and the second s	and the state of t	April 10 mg of 1988 to 1 mg of 1 mg of	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	 and the same and the same
	Part D: Assessr	nent and Evalua	ation	
Suggested Continuous	Evaluation Methods:			
Maximum Marks:		50 Mark		

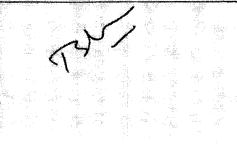


This is to certify that the syllabus is framed by the Central Board of Studies (Mathematics) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

HILL		سيداوست	
1.	Dr. Premlata Verma	Chairman T	
	Asst. Prof.	\sim	
	Govt. Bilasa Girls PG College, Bilaspur	liera	
2.	그리아 하다 하다 하다 하다면 하다면 하는데 그는 그 사람들이 되었다. 그렇게 하고 있는데 그렇게 되었다.	Member \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
	Asst. Prof.	\sim	
	Govt. MMR PG College, Champa		/
3.	Mr. Yetendra Upadhyay -	Member	
	Asst. Prof.	V	
	Govt. N.K. College, Kota	K K	
4.	Ram Lakhan Pandey -	Member \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
	Asst. Prof.		
	Dr. B.R. Ambedkar Govt. College, Baloda		
5	Dr. Arun Kumar Mishra	Member 40	
٠.	Professor	Manage April	
	Govt. DT PG College, Utai		
Ä	Dr. Shabnam Khan	Member 444	and the second
U.	그 집 그는 그래픽에 하게 하게 하셨습니 꿈꿨다. 그 라는 그는 사람들은 그는 그를 가는 그렇게 된 사람이 되었다.	Member _v-	***
	Professor		ħ
279	Govt. Digvijay PG College, Rajnandgaon		· · · · · · · · · · · · · · · · · · ·
1.	Dr. Padmavati	Member Part	
	Professor		
	Govt. VYT PG Auto. College, Durg	$r \mathcal{U}$	
8.	Dr. Anjali Chandravanshi	Member 4	aire ann an Aire ann ann ann ann ann ann ann ann ann an
	Asst. Prof.		
	Govt. J.Y. Chhattisgarh College, Raipur		1
9.	Manisha Gupta -	Member Meyey	P/g
	Asst. Profi		
	GNA Govt. PG College, Bhatapara, Raipur		
10	. Mrs. Sangeeta Pandey	Member Same	
	Asst. Prof.	\mathcal{O}^{\prime}	
86	R.G. Govt. PG College, Ambikapur		
11.	. Dr. S.K. Bohre	Member And	
	Asst. Prof.	- Cano-	
	I.G. Govt. PG College; Vaishalinagar, Bhilai		
12	Dr. Samir Dashputre	Member & C	
	Asst. Prof.	·····································	7 •
	Govt. College, Arjunda, Balod		
12	Dr. Chandrajeet Singh Rathore	Member /	
1.0	Asst. Prof.	Wielitoer / Y	
	그러지 그 하늘이 되면 가게 되는 것이다. 그렇게 들어 그 하셨다. 이번속부분이 그 중국이라는 그렇게 하는 일에 하는 생생이라고 말했다. 그 없었다.		
	Govt. Jajwalyadev Naveen Girls PG College, Janjgir		
1.4	Dr Chui Mach Caulle	bould-	
14	Dr. Shri Nath Gupta	Member JWF2	
3 5	K. Govt. Arts & Science College, Raigarh		
13	Dr. Raghu Nandan Patel	Member Wol	-
	Asst. Prof.		7.7
	Govt. MLS College, Seepat		

	and the state of t	Part A: Introd	luction	
Pro	ogram: Degree Course	Class: B. A. / B.Sc. Part III	Year: 2022	Session:2024-2025
1	Course Code	Pe	iper – MATH – 5	T(ii)
2	Course Title	Linear Algebra		
3	Course Type	Theory		
4	Pre-requisite (if any)		No	
5	Course Learning Outcome (CLO)	 isomorphism the Understand the factorization. Find canonical f Obtain various transformations. Apply Cauchyon inner productions. 	oroperties of lin orems. concept of poly form of linear tran variants of d Schwarz inequa	nomials and their prime asformations. iagonalisation of linear lity for deriving metric obtain orthonormal basis
6	Credit Value		4	
7	Total Marks	Maximum Marks: 50	Min	imum Passing Marks:

	Part B; Content of the Course Total Periods: 60					
Unit	Topics	No. of Periods				
1	Properties of Linear Transformation: Vector spaces, Linearly independent and dependent sets, Bases and dimension, Linear transformation, Linear functional, Dual spaces and second dual space, Transpose of linear transformation, Algebra of linear	12				
	transformations, Isomorphism theorems.	h				



	Polynomials: Algebras, The algebra of polynomials, Lagrange interpolation, Vandermonde matrix, Polynomial ideals, Taylor's formula, The prime factorization of a polynomial, Algebraically closed fields.	12
III.	Elementary Cannonical Forms: Determinant functions, Characteristic values of a linear transformation, Cayley-Hamilton theorem for linear transformations, Annihilating polynomials, Invariant subspaces, Minimaland characteristic polynomials.	12
IV	Diagonalisation and Jordan Cannonical Form: Diagonalisability of linear transformations, Direct sum decomposition, Invariant direct sums, The primary decomposition theorem, Triangular form, Jordan canonical form, trace and transpose.	12
V	Inner Product Spaces: Definition and examples of inner product space, orthogonality, Cauchy-Schwarz inequality, Gram-Schmidt orthogonalisation, Diagonalisation of symmetric matrices, Hermitian, Unitaryand normal operators.	12

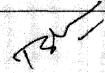
Text Books, Reference Books,

- 1. I. M. Gel'fand. Lectures on Linear Algebra. Dover Publications. 1989
- 2. Kenneth Hoffman & Ray Kunze. Linear Algebra (2nd edition). Prentice-Hall. 2015
- 3. Nathan Jacobson. Basic Algebra I (2nd edition). Dover Publications. 2009
- 4. Nathan Jacobson Basic Algebra II (2nd edition). Dover Publications. 2009.
- 5. Serge Lang Introduction to Linear Algebra (2nd edition). Springer India. 2005.
- 6. Gilbert Strang, Linear Algebra and its Applications (2nd edition). Elsevier. 2014

E- Resources:

- 1. Suggested Equivalent online courses: Web link NPTEL/ SWAYAM/ MOOCs
- https://www.youtube.com/watch?v=9h_Q-R6sXbM&list=PL7oBzLzHZ1wXQvQ938Wg1-soq09GywgOw

		Part l): As	sessm	ent an	d Ev	aluatio	m		\$ ···	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Suggested Conti	nuous	Evaluation	Met	hods:					180		
Maximum Mark	3.				5	0 M	arks				4. 1
						/ ,	,				

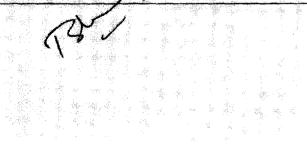


This is to certify that the syllabus is framed by the Central Board of Studies (Mathematics) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

man	nokani.	
1.	Dr. Premlata Verma -	Chairman T
	Asst. Prof.	
	Govt. Bilasa Girls PG College, Bilaspur	()111-
2.	Prof. R.R. Sahu	Member YVV
	Asst. Prof.	
	Govt. MMR PG College, Champa	
3.	Mr. Yetendra Upadhyay	Member \\
	Asst. Prof.	$oldsymbol{V}$
	Govt. N.K. College, Kota	
4.	Ram Lakhan Pandey -	Member ()
	Asst. Prof.	
	Dr. B.R. Ambedkar Govt. College, Baloda	
5	Dr. Arun Kumar Mishra	Member Kil
v.	Professor	Michieu ars
	그림 그 그리고 그림으로 보는 그 살아 있다. 그는 그는 그는 그를 보고 있다.	
4	Govt. DT PG College, Utai Dr. Shabnam Khan	5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5
υ.	그는 그들은 이야기 이번 이렇게 이렇게 된다. 그렇는 그렇는 그 게 그는 그는 그 이번에 그로 이 점이다. 그 이상이나를	Member
	Professor	
_	Govt. Digvijay PG College, Rajnandgaon	, Luc
7.	그래 아이트 프랑스 프랑스 아이는 얼마나 하는 아이를 가장하는 그 사람들이 가장 그렇게 되었다.	Member Con
	Professor	
	Govt. VYT PG Auto. College, Durg	
8.	Dr. Anjali Chandravanshi -	Member C
	Asst. Prof.	
	Govt. J.Y. Chhattisgarh College, Raipur	
9.	Manisha Gupta	Member Myss 9
	Asst. Prof.	
	GNA Govt. PG College, Bhatapara, Raipur	
10.	. Mrs. Sangeeta Pandey	Member Say
	Asst. Prof.	Q0 1
	R.G. Govt. PG College, Ambikapur	
11.	Dr. S.K. Bohre	Member A
	Asst. Prof.	رابح المحادث
	I.G. Govt. PG College, Vaishalinagar, Bhilai	
12.	Dr. Samir Dashputre	Member 9
	Asst. Prof.	Wemen 7 m
	Govt. College, Arjunda, Balod	
13	Dr. Chandrajeet Singh Rathore	Mark A
10.	Asst. Prof.	Member (V
	Govt. Jajwalyadev Naveen Girls PG College, Janjgir	
14.	Dr. Shri Nath Gupta	Member man
	K. Govt. Arts & Science College, Raigarh	- TIN
15.	Dr. Raghu Nandan Patel	Member 1
	Asst. Prof.	
	Govt. MLS College, Seepat	
		왕이 되지만 선생이 가는 사람이 있는 것이 되는 것이다. 경기 교육이 있는 것이 있다.

	The state of the s				
		Part A: Introd	uction		
Pro	ogram: Degree Course	Class: B. A. / B.Sc. Part III	Year: 2022	Session:2024-2025	
1	Course Code	Pa	per – MATH – 5T	(iv)	
2	Course Title	Integral Transforms and Fourier Analysis			
3	Course Type	Theory			
4	Pre-requisite (if any)		No		
5	Course Learning Outcome (CLO)	 This Course will enable the students to: Know about piecewise continuous functions, Dirac defunction, Laplace transforms and its properties. Solve ordinary differential equations using Laplatransforms. Explain Parseval's identity, Plancherel's theorem a applications of Fourier transforms to boundary value problems. Learn Fourier series, Bessel's inequality, term by te differentiation and integration of Fourier series. 			
6	Credit Value				
7	Total Marks	Maximum Marks: 50	Minim	num Passing Marks:	

Part B: Content of the Course Total Periods: 60				
Unit	Topics	No. of Period:		
	Laplace Transforms: Integral transform, Kernel of an integral transform, Reduction of integral transform into Laplace transform, Linearity, Existence theorem, Laplace transforms of derivatives and integrals, Shifting theorems, Change of scale property, Laplace transforms of periodic functions, Dirac's delta function.	12		
II	Further Properties of Laplace Transforms and Applications: Differentiation and integration of transforms, Convolution theorem, Integral equations, Inverse Laplace transform, Lerch's theorem, Linearity property of inverse Laplace transform, Translations theorems of inverse Laplace transform, Inverse	12		



	transform of derivatives, Applications of Laplace transform in obtaining solutions of ordinary differential equations and integral equations.	
Ш	Fourier Transforms: Fourier and inverse Fourier transforms, Fourier sine and cosine transforms, Inverse Fourier sine and cosine transforms, Linearity property, Change of scale property, Shifting property, Modulation theorem, Relation between Fourier and Laplace transforms.	12
IV	Solution of Equations by Fourier Transforms: Solution of integral equation by Fourier sine and cosine transforms, Convolution theorem for Fourier transform, Parseval's identity for Fourier transform, Plancherel's theorem, Fourier transform of derivatives, Applications of infinite Fourier transforms to boundary value problems, Finite Fourier transform, Inversion formula for finite Fourier transforms.	12
V	Fourier Series: Fourier cosine and sine series, Fourier series, Differentiation and integration of Fourier series, Absolute and uniform convergence of Fourier series, Bessel's inequality, The complex formof Fourier series.	112 3

Part C - Learning Resource

Text Books, Reference Books:

- 1. James Ward Brown & Ruel V. Churchill. Fourier Series and Boundary Value Problems. McGraw-Hill Education. 2011
- 2. Charles K. Chui. An Introduction to Wavelets. Academic Press 1992
- 3. Erwin Kreyszig. Advanced Engineering Mathematics (10th edition). Wiley. 2011
- 4. Walter Rudin. Fourier Analysis on Groups. Dover Publications. 2017
- 5. A. Zygmund. Trigonometric Series (3rd edition). Cambridge University Press. 2002

Other Resources:

- 1. Suggested Equivalent online courses: Web link NPTEL/ SWAYAM/ MOOCs
- 2. https://www.youtube.com/watch?v=FGjMZ1uMRrs&list=PLhSp9OSVmeyJ5N-JUEZj7uS6IAT9a79nD

	Part D: Assessment and Evaluation
-	Suggested Continuous Evaluation Methods:
	Maximum Marks: 50 Marks
-	Maximum Marks: 50 Marks



This is to certify that the syllabus is framed by the Central Board of Studies (Mathematics) as per the guidelines (TOR) of the Department of Higher Education, Raipur Chhattisgarh.

ınaıı	isgarn.	
1.	Dr. Premlata Verma	Chairman (19
	Asst. Prof.	
	Govt. Bilasa Girls PG College, Bilaspur	
2.	Prof. R.R. Sahu	Member WW
	Asst. Prof.	
	Govt. MMR PG College, Champa	
3,	Mr. Yetendra Upadhyay -	Member \\ V.
	Asst. Prof.	
	Govt. N.K. College, Kota	
4.	Ram Lakhan Pandey	Member (1997)
	Asst. Prof.	
	Dr. B.R. Ambedkar Govt. College, Baloda	
5.	Dr. Arun Kumar Mishra	Member Hil
	Professor	
	Govt. DT PG College, Utai	
6.	Dr. Shabnam Khan	Member Sky
141 (5)	Professor	
	Govt. Digvijay PG College, Rajnandgaon	
7.	Dr. Padmavati -	Member Por
	Professor	
	Govt. VYT PG Auto. College, Durg	
8.	Dr. Anjali Chandravanshi	Member at
	Asst. Prof.	
	Govt. J.Y. Chhattisgarh College, Raipur	
9.	Manisha Gupta -	Member mysty
	Asst. Prof.	
	GNA Govt. PG College, Bhatapara, Raipur	
10	. Mrs. Sangeeta Pandey	Member (and
	Asst. Prof.	αM
	R.G. Govt. PG College, Ambikapur	
1.1	. Dr. S.K. Bohre	Member & Lok
	Asst. Prof.	w
	I.G. Govt. PG College, Vaishalinagar, Bhilai	
10	2. Dr. Samir Dashputre	Member 9 ===
	Asst. Prof.	-/
	Govt. College, Arjunda, Balod	
1.3	3. Dr. Chandrajeet Singh Rathore	Member/
. **	Asst. Prof.	
	Govt. Jajwalyadev Naveen Girls PG College, Janjgir	
14	1. Dr. Shri Nath Gupta	Member my
	K. Govt. Arts & Science College, Raigarh	J'II
1	5. Dr. Raghu Nandan Patel -	Member ()
	Asst. Prof.	

Govt. MLS College, Scepat