### LESSON PLAN

#### <u>BSc I year</u>

- 1. Outline learning objective
- 2. Develop the introduction
- 3. Plan the main body of the lesson
- 4. Plan to check for understanding
- 5. Develop a conclusion and a preview
- 6. Create realistic timeline

### PAPER - I

### ALGEBRA AND TRIGONOMETRY

#### Lesson plan S. То No. Teaching No. pic of Method perio ds need ed Elementary operation 7 1. Animation, on matrices pptpresentation 1. Questions based on previous , black knowledge board 2. Synopsis: Inverse of matrix ,linear independanc of row and column ,row rank , column,and rank, and equivalence of column and row rank 3. Homework after each class Eigenvalues, and 7 2. Black eigenvectors and board, ppt characterisitc presentation 1. Questions knowledge 2. Synopsis: a) Cayley hamiltion theorem b) And its in use in finding inverse

				of a matrix
				3 Homework after each class
				5. Homework after each class
	Assessment of underst	anding:		
	1. Unit test for 20 mar	ks: subj	ective/objective	e/oral
	2. group discussions			
	3.class room quiz com	petition	S	
			UNI	[-2
1.	Application of	5	Black	
	matrices		board, ppt	<b>1. Specific objective</b> : to clear the
			presentation	concept of matrix
			,	2. Questions based on previous
				knowledge
				3. Synopsis:
				a) Homogeneous and
				h) Theorem on consistency of a
				b) Theorem on consistency of a
				system of mer equation
				<b>4.</b> Homework after each class
2.	Relation between the	6	Black	
	root and coefficients		board, ppt	1. Specific objective: to clear the
			presentation	concept of relation
			,	2. Questions based on previous
				knowledge
				3. Synopsis:
				a) General polynomial equation in
				one variable
				b) Types: Benign and malignant
				<b>4</b> Homework after each class
3	Descarle Rule and	6	Black	To frome work after each class
5.	Cardons method		board ppt	1. Specific objective: to clear the
			presentation	concept of descarte and cardons
			resentation	method
				2. Questions based on previous
				knowledge

equation er each class							
er each class							
2. group discussions							
c <b>tive</b> : to clear the pping ed on previous							
ter each class							
ctive: to clear the oup ed on previous on of group e modulo n oroperties generation of roup							
ter each class							
c <b>tive</b> : to clear the grange and euler ed on previous ter each class							
ed on previous on of permuations odd permutions ter each class							

	Assessment of understanding:							
	1. Unit test for 20 marks: subjective/objective/oral							
	2. group discussions							
	3.class room quiz competitions							
	UNIT-4							
1.	Homomorphism and Isomorphism	6	Black board, ppt presentatio n	<ol> <li>Specific objective: To clear the concept of homomorphism and isomomorphism</li> <li>Questions based on previous knowledge</li> <li>Synopsis:         <ul> <li>a) Introduction of homomorphism and isomorphism</li> <li>Homowork after each class</li> </ul> </li> </ol>				
2.	Ring theory	4	Black board, ppt presentatio n,	<ol> <li>Homework after each class</li> <li>Specific objective: To clear the concept of ring</li> <li>Questions based on previous knowledge</li> <li>Synopsis:         <ul> <li>a) Introducation of ring and properties</li> <li>Homework after each class</li> </ul> </li> </ol>				
3.	Integeal domain and fields	4	Black board, ppt presentatio n,	<ol> <li>Specific objective: To clear the concept of domain and fields</li> <li>Questions based on previous knowledge</li> <li>Synopsis:         <ul> <li>a) Characteristic of a ring and field</li> <li>Homework after each class</li> </ul> </li> </ol>				
	Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. group discussions 3.class room quiz competitions Unit-5							
1.	De-Moivers theorem	6	Black board, ppt presentatio n,	<ol> <li>Specific objective: To clear the concept of de –moivre</li> <li>Questions based on previous knowledge</li> </ol>				

				3.	<ul><li>Synopsis:</li><li>a) Introduction of de-moivers and its application</li><li>b) Hyperbolic funcation</li></ul>
				4.	Homework after each class
2.	Logarithm of a complex quantity	4	Black board, ppt presentatio n,	1.	Questions based on previous knowledge
				2.	Homework after each class
3.	Gregorys series ,summation of series	4	Black board, ppt presentatio n,	1. 2. <u>3.</u>	<b>Specific objective</b> : To clear the concept of Gregory and summation Questions based on previous knowledge Homework after each class
	Assessment of understand	ding:			
	1. Unit test for 20 marks:	subjec	ctive/objective	e/oral	
	2. group discussions	itiona			
	5.class room quiz compet	lutions			

### PAPER -I I (paper code -) ( CALCULUS) M.M. 50

C	Τ_	No	Taaahina	Lasson plan
<b>З</b> .	. 10	INO.	Teaching	Lesson plan
No.	pic	of	Method	
		perio		
		ds		
		need		
		ed		
1.	Continuous and	7	Animation.	
	Discontinuties		nnt-	<b>Specific objective</b> : to clear the concept
	funcation		presentation	of continuous and discontinuous
	runeation		blook	Ouestions based on provious
			, DIACK	Questions based on previous
			board	knowledge
				Synopsis:
				Definition of continuous and
				discontinuities
				Basic properties of limits
				And classification of discontinuies
				differentiability successive
				Homework after each class
2	Laibnitz theorem	2	Plack	Home work after each class
۷.	Leibintz theorem		black	Specific chiectives to clear the concert
			board, ppt	Specific objective: to clear the concept
			presentation	of Leibnitz theorem
				Questions based on previous
				knowledge
				Synopsis:
				Definition of Leibnitz theorem and
				exmple
				Homework after each class
3.	Maclaurin and Taylor	5	ppt-	
	series		presentation	<b>Specific objective</b> : to clear the
	501105		Black-board	maclaurin and taylor
			Diack-00alu	Questions based on provious
				Questions based on previous
				knowledge
				Synopsis:
				Homework after each class

	Assessment of unders	tanding:						
	1. Unit test for 20 marks: subjective/objective/oral							
	2. group discussions							
	3.class room quiz competitions							
	UNIT-2							
1.	Asymptotes	2	Black board, ppt presentation	Specific objective: to clear the concept of asymptotes Questions based on previous knowledge Homework after each class				
2.	Curvature	2	Black board, ppt presentation	Specific objective: to clear the concept of curvature Questions based on previous knowledge Synopsis: Definition Types on the basis of need Homework after each class				
3.	Tests for concavity and convexity	2	Black board, ppt presentation	Specific objective: to clear the concept concavity and convexity Questions based on previous knowledge Synopsis: Definition and				
4.	Points of inflexion ,Multiple points	2	PPT, Black board	Specific objective: to clear the concept of infiexion Questions based on previous knowledge Synopsis: Definition and problem Homework after each class				
5.	Tracing of curves Cartesian and polar coordinates	4	PPT, Black board	Specific objective: to clear the concept of curves . Questions based on previous knowledge Synopsis: Definition and problem				

				Homework after each class		
	Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. group discussions 3.class room quiz competitions					
			UNIT	Г-3		
1.	Integration of Transcendental funcation	4	Black board, ppt presentation	Questions based on previous Homework after each class		
2.	Reduction formula	2	Black board, ppt presentation	Questions based on previous knowledge <b>Synopsis</b> :		
				Homework after each class		
3.	Integrals Quadrature Rectification.	2	Black board, ppt presentation	Questions based on previous knowledge <b>Synopsis:</b> Volumes and surfaces of solids of revolution		
				Homework after each class		
	Assessment of understar 1. Unit test for 20 marks 2. group discussions 3.class room quiz compo	nding: s: subjection	ective/objective	e/oral		
			UNI	L-4		
1.	Differential Equation .	7	Black board, ppt presentatio n	<ul> <li>Specific objective: to clear the concept of Differential equation <ul> <li>Questions based on previous</li> <li>knowledge</li> </ul> </li> <li>Synopsis: <ul> <li>Definition of differential equation</li> <li>Degree and order</li> <li>First order higher degree equations</li> <li>Clairauts from and singular solution</li> <li>Geometrical meaning of a differential equation</li> <li>Homework after each class</li> </ul> </li> </ul>		
2.	Linear differential equation with constant coefficients [first order]	6	Black board, ppt presentatio	<b>Specific objective</b> : to clear the concept of linear differential equation		

			n	
				Questions based on previous
				knowledge
				Synongia
				Synopsis.
				Homogonoous linear ordinary
				differential equation
				differential equation
				Homework after each class
	Assessment of understan	ding:		
	1. Unit test for 20 marks:	subied	ctive/objective	e/oral
	2 group discussions	sacje	i i i i i i i i i i i i i i i i i i i	
	3 class room quiz compe	titions		
		<b>introlli</b> 5	Unit	-5
			Cint	
1	Lincor differential	6	Dlook	
1.	constion of second	0	board pot	Specific objectives to clear the concept
	equation of second		board, ppt	specific objective, to clear the concept
	order		presentatio	of second order fineae differential
			n	equation
				Questions based on previous
				knowledge
				Synopsis:
				Changing the dependent variable and
				independent variable
				Homework after each class
2.	Parameters	2	Black	
			board, ppt	<b>Specific objective</b> : to clear the concept
			presentatio	of Parameters .
			n	Questions based on previous knowledge
				Synopsis:
				Definition of parameters
				Homework after each class
3.	Ordinary Simultaneous	2	Black	
	differential equation		board, ppt	Specific objective: to clear the concept
	_		presentatio	of simultaneous equation
			n	Questions based on previous
				knowledge
				Homework after each class
	Assessment of understan	ding:		
	1. Unit test for 20 marks:	subied	ctive/objective	e/oral
	2. group discussions	J	5	
	3.class room quiz compe	titions		
L	1 2.2 mail 100 million quill compe			

## LESSON PLAN

### MATHEMATICS PAPER -III (paper code -) (VECTOR ANALYSIS AND GEOMETRY )

	UNIT-1					
S. No	c Topi	No. of perio ds need ed	Teaching Method	Lesson plan		
1.	Scalar and Vector product of three vectors	4	, ppt- presentat ion, black board	<ol> <li>Specific objective: to clear the concept of scalar and vector</li> <li>Questions based on previous knowledge</li> <li>Synopsis:         <ul> <li>a) Product of four vectors</li> <li>b) Reciprocal Vector</li> </ul> </li> <li>Homework after each class</li> </ol>		
2.	Gradient , Divergence and Curl	8	Black board, ppt presentat ion,	<ol> <li>Specific objective: to clear the concept of Gradient, divergence and curl</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>		
Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. Group discussions 3. Class room quiz competitions						
1.	Vector integration ,and Gauss theorem	6	, ppt- presentations Black- board	<ul> <li><b>1.</b> Specific objective: to clear the concept of Gauss theorem</li> <li><b>2.</b> Questions based on previous</li> </ul>		

			(whenever	knowledge			
			needed)	<b>3</b> Homework after each class			
2.	Green and Stokes theorem	8	ppt- presentatio ns Black- board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Green and Stokes theorem</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>			
	•						
Asse 1. Ut 2. Gt 3. Cl	ssment of understanding: nit test for 20 marks: subje oup discussions ass room quiz competition	 ctive/objo	ective/oral				
1	General equation of	2	DDT-				
1.	second degree	2	presentations Black-board (whenever needed)	<ol> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>			
2.	Tracing of conics ,System of conics	5	ppt- presentations Black-board (whenever needed)	<ol> <li>Fromework after each class</li> <li>Specific objective: to clear the concept of tracing of conics</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>			
3.	Confocal ,Polar Equation of a Conic	5	, ppt- presentations Black-board (whenever needed)	<ol> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>			
Asse 1. Ur 2. Gr	Image: Interview of the system       Image: Im						
3. Cl	ass room quiz competition	IS					
	UNIT-4						

1.	Sphere	3	, ppt-	<b>1</b> Specific objective: To clear the
			Black-board	concept of Sphere.
			(whenever	2. Questions based on previous
			needed)	knowledge
-	~			<b>3.</b> Homework after each class
2.	Cone	3	ppt-	<b>1</b> Specific objective: To clear the
			Black-board	concept of cone
			(whenever	2. Questions based on previous
			needed)	knowledge
				<b>3.</b> Homework after each class
3.	Cylinder	3	ppt-	
			presentations	1. Specific objective: To clear
			Black-board	the concept of Cylinder
			(whenever needed)	2. Questions based on previous knowledge
			needed)	kilowiedge
				5. Homework after each class
•				
Asse	ssment of understanding:	ative /ah;		
1.01 2.G	oup discussions	ctive/obj	ective/oral	
3. Cl	ass room quiz competition	ıs		
			Unit-5	
1	Central Conicoids	4	Pnt	
1.	.Paraboloids	•	presentations	<b>1. Specific objective</b> : To clear the
	,		Black -board	concept of conicoids and
				paraboloids
				<b>2.</b> Questions based on previous
				knowledge
2	Generating lines	3	Pnt presentati	5. Homework after each class
2.	Generating lines.	5	ons Black –	<b>1. Specific objective</b> : To clear the
			board	concept of Generation line
				2. Questions based on previous
				knowledge
2	Deduction C 1	2	Dut	<b>3</b> Homework after each class
5.	degree equation	5	Ppt,	1 Specific objective: To clear the
	uegree equation		Black -board	concept of Reduction
			Diack bound	

				<ol> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>		
•						
Asse	ssment of understanding:		·			
1. Ur	1. Unit test for 20 marks: subjective/objective/oral					
2. Gr	2. Group discussions					
3. Cl	ass room quiz competition	IS				

#### LESSON PLAN BSC-II YEAR

**1.Outline learining objective** 

2.Develop the introduction

3.plan the main body of the lesson

4.Develop a conclusion and a preview

5. plan to check the understanding

6.Create realistic timeline

#### PAPER - I (paper code -) (ADVANCED CALCULUS)

UNIT-1					
S. No	Торіс	No. of perio ds need ed	Teaching Method	Lesson plan	
1.	Sequences (Bounded and Monotonic)	2	, ppt- presentat ion, black board	<ul> <li>Specific objective: to clear the concept of Bounded and Monotonic Sequences Questions based on previous knowledge</li> <li>Synopsis: Definition of Sequences Definition of Monotonic and Bounded Se.</li> <li>Homework after each class</li> </ul>	

2.	Cauchy Convergence	3	Black	
			board,	<b>Specific objective</b> : to clear the concept
			ppt	of Cauchy convergence
			presentat	Ouestions based on previous
			ion	knowledge
				Homework after each class
3.	Test of Convergence	10	ppt-	
	(Comparison ,Cauchy		presentat	<b>Specific objective</b> : to clear the concept
	Integral,Ratio,Raabes		ions	of convergence
	logarithmic,De-morgan		Black-	Questions based on previous
	and Bertrand )		board	knowledge
			(whenev	
			er	Homework after each class
			needed)	
4.	Alternating Series	8	ppt-	
	,Leibnitz Theorem and		presentat	Specific objective: to clear the concept
	Absolute and		ion,	of Leibnitz and Absolute
	conditional convergence		black	Questions based on previous
			board	knowledge
				Homework after each class
Asse	ssment of understanding:		, ,	
4	• Unit test for 20 marks: s	ubjectiv	e/objective/	oral
5	. Group discussions			
6	<ol> <li>Class room quiz compet</li> </ol>	itions		
1		6		
1.	Continuity, Uniform	0	, ppt-	
	continuity and Chain		presentatio	<b>Specific objective:</b> to clear the
	rule		ns Black-	concept of Chain rule
			board	Questions based on previous
			(whenever	knowledge
			needed)	II 1 0 1 1
	3.6 37.1 -1			Homework after each class
2.	Mean Value theorem	2	ppt-	
			presentatio	<b>Specific objective:</b> to clear the
			ns Black-	concept of mean value theorem .
			board	Questions based on previous
			(whenever	knowledge
			needed)	
2	Dark over internet 1' t	1		Homework after each class
3.	Darboux intermediate	1	ppt-	
	value theorem		presentation	<b>Specific objective:</b> to clear the
			ns Black-	concept of Darboux
			board	Questions based on previous
			(whenever	knowledge

			needed)		
				Homework after each class	
4.	Taylor Theorem	2	ppt- presentatio ns Black- board (whenever needed)	<b>Specific objective</b> : to clear the concept of Taylor theorem . Questions based on previous knowledge Homework after each class	
Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. Group discussions 3. Class room quiz competitions					
			UNIT-3		
1.	Limit and continuity function ( two variables)	3	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of limit and continuity Questions based on previous knowledge.	
				Homework after each class	
2.	Partial differentiation . Change of variables	6	ppt- presentations Black-board (whenever needed)	<ul> <li>Specific objective: to clear the concept of partial differentiation Questions based on previous knowledge</li> <li>Homework after each class</li> </ul>	
3.	Eulers Theorem on	3	ppt-		
	homogeneous funcation		presentations Black-board (whenever needed)	<ul> <li>Specific objective: to clear the concept of homogeneous funcation Questions based on previous knowledge</li> <li>Synopsis: <ul> <li>Diffination Eulers theorem and examples.</li> <li>Diffination homogeneous funcation</li> <li>Homework after each class</li> </ul> </li> </ul>	

4. Asse	Taylor theorem for function of two variables ,Jacobians ssment of understanding:	6	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of Taylor theorem and Jacobians Questions based on previous knowledge Homework after each class				
1. Ui	1. Unit test for 20 marks: subjective/objective/oral							
2. OI 3. Cl	3. Class room quiz competitions							
	UNIT-4							
1.	Envelopes	2	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of Envelopes Questions based on previous knowledge Homework after each class				
2.	Evolutes	2	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of Evolutes Questions based on previous knowledge				
				Homework after each class				
3.	Maxima ,Minima And Saddle points of function .	8	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of Maxima ,minima and saddle point . Questions based on previous knowledge				
				Homework after each class				
4.	Lagrange Multiplier Method	2	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of Lagrange method Questions based on previous knowledge				
				Homework after each class				
Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. Group discussions								

3. Class room quiz competitions							
	Unit-5						
1.	Beta and Gamma function	5	PPT, Black board	Specific objective: to clear the concept of Beta And Gamma function Questions based on previous knowledge Homework after each class			
2.	Double And Triple Integrals	2	PPT, Black board	Specific objective: to clear the concept of Double and Triple integrals Questions based on previous knowledge Homework after each class			
3.	Dirichlet integrals	2	PPT, Black board	Specific objective: to clear the concept of Dirichet integrals Questions based on previous knowledge			
4.	Change of order of integration in double integrals	2	PPT, Black board	Specific objective: to clear the concept of Change of order in double integrals Questions based on previous knowledge Homework after each class			
Asse	ssment of understanding: nit test for 20 marks: subj	ective/ot	jective/oral				

3. Class room quiz competitions

# PAPER-II (Paper Code) (DIFFERENTIAL EQUATIONS)

S.	Topic	No. of	Teaching	Lesson plan
No.		period	Method	
		S		
		neede		
		d		
1.	Power Series	3	ppt-	
	Method		presentation	<b>1. Specific objective</b> : to clear the
			, black	concept of Power Series
			board	2. Questions based on previous
				knowledge
				<b>3.</b> Homework after each class
2.	Bessel And	3	Black	
	Legendre		board, ppt	1. Specific objective: introduction of
	function and their		presentation	Bessle and Legendre
	properties			2. Questions knowledge
				3. Homework after each class
3.	Recurrence and	3	ppt-	
	Generating		presentation	1. Specific objective: to clear the
	relations,		s Black-	concept of Recurrence and
			board	generating relations
			(whenever	<b>2.</b> Questions knowledge
			needed)	3 Homowork after each class
4	Sturm Liouvillo	6	Plack	<b>5.</b> Homework after each class
4.	Droblem Deality	0	board ppt	1 Specific objective: to clear the
	of eigen values		presentation	concept of Sturm _I jouville
	of eigen values		presentation	2 Questions based on previous
				knowledge
				kilowiedze
				<b>3.</b> Homework after each class
5.	Orthogonality	5	Black	
	of Bessel		board, ppt	<b>1. Specific objective</b> : to clear the
	functions and		presentation	concept of Orthogonality of Bessel
	Legendre			functions
	Polynomials			2. Questions based on previous

				knowledge		
				<b>3.</b> Homework after each class		
Ass 1. U 2. g	Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. group discussions					
4.	3.class room quiz cor	npetitio	ns UNIT	-2		
	-					
1.	Laplace Transformation(Deri vatives and integrals)	3	ppt- presentation s Black- board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Laplace Tran.</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>		
2.	Shifting theorem	3	ppt- presentation s Black- board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Shifting theorem</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>		
3.	Convolution theorem	2	ppt- presentation s Black- board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Convolution theorem</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>		
4.	Differential equation using the laplace transformation	2	ppt- presentation s Black- board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Di.Eq.in Lap.Tran.</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>		
Ass 1. U 2. C 3. C	Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. Group discussions 3. Class room quiz competitions					
1	PDE of the first	5 r	UNII	-3		
	order		bresentations Black-board whenever	<ol> <li>Specific objective: to clear the concept of PDE</li> <li>Questions based on previous</li> </ol>		

			needed)	knowledge					
				<b>3.</b> Homework after each class					
2.	Lagrange Solution .Some Special types of equations	6	ppt- presentations Black-board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Lagrange solution</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>					
3.	Charpit general method of Solution	4	ppt- presentations Black-board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Charpit general method</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>					
Ass 1. U 2. ( 3. (	sessment of understa Jnit test for 20 mark Group discussions Class room quiz com	inding: s: subje	al						
		T	UNIT	-4					
1.	PDE of Second And higher orders	3	ppt- presentations Black-board (whenever needed)	<ol> <li>Specific objective: to clear the concept of PDE S.AND higher order</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>					
2.	Homogencous And non- homogencous equation with constant cofficients	5	ppt- presentations Black-board (whenever needed)	<ol> <li>Specific objective: to clear the concept of HO.AND NON-HO.</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>					
3.	Monges Methods	4	ppt- presentations Black-board (whenever needed)	<ol> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>					
<b>A</b> a	accompant of underste	Indina							
Ass 1. U	Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral								

3. 0	3. Class room quiz competitions						
	Unit-5						
1.	Calculus of Variations(Vari.P .with fixed Boun.)	4	ppt- presentations Black-board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Calculus Variations</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>			
2.	Euler equation for functionals Containing first order (one independent variable)	4	ppt- presentations Black-board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Euler equation</li> <li>Questions based on previous knowledge</li> <li>Homework after each class</li> </ol>			
3.	Jacobi and Legendre Conditions	4	ppt- presentations Black-board (whenever needed)	<ol> <li>Specific objective: to clear the concept of Jacobi and Legendre</li> <li>Questions based on previous knowledge</li> </ol>			
4.	Second Variation .(V.P.OF least action )	2	ppt- presentations Black-board (whenever needed)	<ul> <li><b>5.</b> Homework after each class</li> <li><b>1.</b> Specific objective: to clear the concept of Second Variation</li> <li><b>2.</b> Questions based on previous knowledge</li> <li><b>3.</b> Homework after each class</li> </ul>			
Ass 1. U 2. g 3.c	Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. group discussions 3.class room guiz competitions						

# PAPER-III (Paper Code-0917) (MECHANICS)

S.	Topic	No. of	Teaching	Lesson plan			
No.		period	Method	*			
		S					
		neede					
		d					
1.	Analytical	6	Black				
	Conditions of		board, ppt	<b>Specific objective</b> : to clear the concept of			
	Equilibrium		presentation	Analytical Conditions of Equilibrium			
				Questions based on previous			
				knowledge			
		-		Homework after each class			
2.	Stable and	3	Black				
	unstable		board, ppt	Specific objective: to clear the concept of			
	equilibrium		presentation	Stable and unstable equilibrium .			
				Questions based on previous			
				knowledge			
				Homework after each class			
3.	Virtual .Catenary	5	Black				
			board, ppt	<b>Specific objective</b> : to clear the concept of			
			presentation	Catenary			
			1	Questions based on previous			
				knowledge			
				Homework after each class			
Assess	sment of understand	ing:					
1. Uni	t test for 20 marks: s	subjective	e/objective/oral	l			
2. grou	up discussions						
<b>5.</b> 3.	class room quiz com	petitions	5	-			
			UNIT-	2			

1.       2.	Forces in three dimension Poinsots Central axis	5		ppt- presentation s Black- board (whenever needed) ppt- presentation s Black- board	<ul> <li>Specific objective: to clear the concept of Forces in three dimension Questions based on previous knowledge</li> <li>Homework after each class</li> <li>Specific objective: to clear the concept of Poinsots Central axis Questions based on previous</li> </ul>
				needed)	Homework after each class
3.	Null lines and Planes	3		ppt- presentation s Black- board (whenever needed)	Specific objective: to clear the concept of Null lines and planes Questions based on previous knowledge
Ass 1. U 2. C 3. C	Assessment of understanding: 1. Unit test for 20 marks: subjectiv 2. Group discussions 3. Class room guiz competitions			e/objective/ora	l
	1 1			UNIT	-3
1.	Simple harmonic 2 motion .		ppt- presentations Black-board (whenever needed)		Specific objective: to clear the concept of Simple harmonic motion Questions based on previous knowledge Homework after each class
2.	Elastic Strings . 2		ppt- presentations Black-board (whenever needed)		<b>Specific objective</b> : to clear the concept of Elastic Strings Questions based on previous knowledge
2	Valaaitiaa and F		mat		Homework after each class
3.	accelerations along radial and Transverse directions		ppt pre Bla (wł nee	- sentations ack-board nenever eded)	<b>Specific objective</b> : to clear the concept of Velocities and accelerations Questions based on previous knowledge

				Homework after each class			
4.	Projectile ,Central Orbits	4	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of Projectile Central orbits Questions based on previous knowledge Homework after each class			
Ass	sessment of understa	nding:	I	l			
1. U	Unit test for 20 mark	s: subje	ctive/objective/or	al			
2.0	Group discussions						
3.0	Class room quiz com	petitior					
1			UNI	L = -4 T			
1.	Kepler laws of motion	2	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of Kepler laws of motion Questions based on previous knowledge Homework after each class			
2.	Velocities and acceleration in Tangential and normal direction	5	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of V and Acc. In t. Questions based on previous knowledge			
3.	Motion on smooth and rough plane Curves	4	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of Motion on Smooth and rough plane Curves Questions based on previous knowledge Homework after each class			
Ass 1. U 2. C 3. C	Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. Group discussions 3. Class room guiz competitions						
			Unit	-5			
1.	Motion in a resisting ,medium ,motion of particles of varying mass.	4	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of Motion Questions based on previous knowledge Homework after each class			

2.	Motion of a particle in three dimensions	5	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of Motion in three dimensions Questions based on previous knowledge Homework after each class		
3.	Acceleration in terms of different co-ordinate systems	5	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of acceleration Questions based on previous knowledge Homework after each class		
Assessment of understanding:						
1. Unit test for 20 marks: subjective/objective/oral						
2. group discussions						
3.C.	3.class room quiz competitions					

2.	Elastic Strings .	2	ppt-	
			presentations	Specific objective: to clear the concept of
			Black-board	Elastic Strings
			(whenever	Questions based on previous knowledge
			needed)	
				Homework after each class
3.	Velocities and	5	ppt-	
	accelerations		presentations	Specific objective: to clear the concept of

	along radial and		Black-board	Velocities and accelerations		
	Transverse		(whenever	Questions based on previous knowledge		
	directions		needed)			
				Homework after each class		
4.	Projectile ,Central Orbits	4	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of Projectile Central orbits Questions based on previous knowledge		
				Homework after each class		
Ass 1. U 2. C 3. C	Assessment of understanding: 1. Unit test for 20 marks: subjective/objective/oral 2. Group discussions 3. Class room quiz competitions					
			UNIT	<b>[-4</b>		
1.	Kepler laws of motion	2	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of Kepler laws of motion Questions based on previous knowledge Homework after each class		
2.	Velocities and	5	ppt-			
	acceleration in Tangential and normal direction		presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of V and Acc. In t. Questions based on previous knowledge		
				Homework after each class		
3.	Motion on smooth and rough plane Curves	4	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of Motion on Smooth and rough plane Curves Questions based on previous knowledge		
				Homework after each class		
Assessment of understanding:1. Unit test for 20 marks: subjective/objective/oral2. Group discussions						
3. Class room quiz competitions						
Unit-5						
1.	Motion in a resisting ,medium ,motion of particles of	4	ppt- presentations Black-board (whenever	Specific objective: to clear the concept of Motion Questions based on previous knowledge		

	varying mass.		needed)		
				Homework after each class	
2.	Motion of a particle in three dimensions	5	ppt- presentations Black-board (whenever needed)	<b>Specific objective</b> : to clear the concept of Motion in three dimensions Questions based on previous knowledge Homework after each class	
3.	Acceleration in terms of different co-ordinate systems	5	ppt- presentations Black-board (whenever needed)	Specific objective: to clear the concept of acceleration Questions based on previous knowledge Homework after each class	
Assessment of understanding:					
1. Unit test for 20 marks: subjective/objective/oral					

2. group discussions3.class room quiz competitions