

<p>Name of the Assistant Professor: Dr. Seema</p> <p>Class: B.A / B.sc (6<sup>Th</sup>Sem.)</p> <p>Subject: Dynamics (mathematics).</p> <p>Lesson plan April 2023</p>
<p>01 April 2023 To 15 April 2023</p>
<p>Velocity and acceleration along radial, transverse, tangential and नॉर्मल direction. Relative velocity and acceleration . Sample harmonic motion. Elastic strings</p>
<p>16 April 2023 to 30 April 2023</p>
<p>Mass, Momentum and Force. Newton's laws of motion. Work, Power and Energy. Definitions of Conservative forces and Impulsive forces.</p>
<p>01 May 2023 to 15 May 2023</p>
<p>Motion on smooth and rough plane curve. projectile motion of a particle in a plane. Vector angular velocity.</p>
<p>16 May 2023 to upto so.....on</p>
<p>General motion of a rigid body. Central Orbits , kepler's laws of मोशन. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinates systems.</p>

# LESSON PLAN OF MATHEMATICS

Name of College:- CH. BANSI LAL GOVT. P.G. COLLEGE LOHARU (BHIWANI)

Academic Session:- 2022-23

Semester:- B.A. 4TH Sem

Subject:- GROUP AND RINGS

Teacher name:- MS. Seema

	LESSON PLAN OF GROUP AND RINGS
<b>April</b>	
<b>Week 1:</b>	Definition of a group with example and simple properties of groups,
	Subgroups and Subgroup criteria
<b>Week 2:</b>	Generation of groups, cyclic groups, Cosets,
	Left and right cosets, Index of a sub-group Coset decomposition,
	Lagrange's theorem and its consequences,
<b>Week 3:</b>	Normal subgroups, Quotient groups,
	Homomorphisms, isomorphisms,
	automorphisms and inner automorphisms of a group.
<b>Week 4:</b>	Automorphisms of cyclic groups,
	Permutations groups. Even and odd permutations.
	Alternating groups, Cayley's theorem, Center of a group and derived group of a group.
<b>May</b>	
<b>Week 1:</b>	Introduction to rings, subrings,
	integral domains and fields, Characteristics of a ring
	Ring homomorphisms, ideals ,Quotient rings, Field of quotients of

	an integral domain.
<b>Week 2:</b>	Euclidean rings, Polynomial rings, Polynomials over the rational field, The Eisenstein's criterion, Polynomial rings over commutative rings, Unique factorization domain, R unique factorization domain implies so is $R[X_1, X_2, \dots, X_n]$
	Polynomials over the rational field, The Eisenstein's criterion,
<b>Week 3:</b>	Polynomial rings over commutative rings, Unique factorization domain,
	R unique factorization domain implies so is $R[X_1, X_2, \dots, X_n]$

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# Ch. Bansi Lal Govt. College, Loharu

## Summary of Lesson Plans

Academic Session :- 2022-23

For the month of :- April, May

B.A. Ist (2nd – Semester)

Month	Name of Assistant Professor	Subject	Topics/ Chapters to be covered	Academic activity to be organized	Topic of Assignments/ Tests to be given to the students
April	Seema	MATHS	Divisibility, G.C.D. (Greatest Common Divisors), L.C.M. (Least Common Multiple, Primes, Fundamental Theorem of Arithmetic Linear Congruence's, Fermat's theorem. Wilson's theorem and its converse. Linear Diophantine equations in two variables,		
			Complete Residue System and Reduced Residue System modulo $m$ . Euler function. Euler's Generalization of Fermat's theorem. Chinese Remainder Theorem. Quadratic Residues. Legendre Symbols, Lemma of Gauss; Gauss Reciprocity law. Greatest integer function $[x]$ . The number of divisors and the sum of divisors of a natural number $n$ (The functions $d(n)$ and $\sigma(n)$ in Moebius Function and Moebius Inversion Formula.		
May			De-Moivre's theorem and its applications. Expansion of trigonometrical functions. Direct circular and hyperbolic functions and their properties.		
			Inverse circular and hyperbolic functions and their properties. Logarithm of a complex quantity. Gregory's series. Summation of Trigonometric series.		

# Ch. Bansi Lal Govt. College, Loharu

## Summary of Lesson Plans

Name of the Assistant/ Associate Professor : Seema

Class and Section : B.A./B.Sc 3 year (5th Semester)

Subject : Real Analysis

Academic Session :- 2022-23

Month	Name of Assistant Professor	Subject	Topics/ Chapters to be covered	Academic activity to be organized	Topic of Assignments/ Tests to be given to the students
	Dr. Seema	Maths			
September			Riemann integral, Integrability of continuous and monotonic functions, The fundamental theorem of integral calculus, Mean value theorems of integral calculus.		
October			Improper integral and their convergence, Comparison tests, Abel's and Dirichlet's tests, Frullani's integral, Integral as a function of a parameter. Continuity, Differentiability and integrability of an integral of a function of a parameter..		
November			Definition and examples of metric spaces, neighbourhoods, limit points, interior points, open and closed sets, closure and interior, boundary points, subspace of a metric space, equivalent metrics, Cauchy sequences, completeness, Cantor's intersection theorem, Baire's category theorem, Contraction principle.		
December			Continuous functions, uniform continuity, compactness for metric spaces, sequential compactness, Bolzano-Weierstrass property, total boundedness, finite intersection property, continuity in relation with compactness, connectedness, components, continuity in relation with connectedness		



# Ch. Bansi Lal Govt. College, Loharu

## Summary of Lesson Plans

Academic Session :- 2022-23

For the month of :- April, May

B.A. Ist (2nd – Semester)

Month	Name of Assistant Professor	Subject	Topics/ Chapters to be covered	Academic activity to be organized	Topic of Assignments/ Tests to be given to the students
April	Seema	MATHS	Divisibility, G.C.D. (Greatest Common Divisors), L.C.M. (Least Common Multiple, Primes, Fundamental Theorem of Arithmetic Linear Congruence's, Fermat's theorem. Wilson's theorem and its converse. Linear Diophantine equations in two variables,		
			Complete Residue System and Reduced Residue System modulo $m$ . Euler function. Euler's Generalization of Fermat's theorem. Chinese Remainder Theorem. Quadratic Residues. Legendre Symbols, Lemma of Gauss; Gauss Reciprocity law. Greatest integer function $[x]$ . The number of divisors and the sum of divisors of a natural number $n$ (The functions $d(n)$ and $\sigma(n)$ in Moebius Function and Moebius Inversion Formula.		
May			De-Moivre's theorem and its applications. Expansion of trigonometrical functions. Direct circular and hyperbolic functions and their properties.		
			Inverse circular and hyperbolic functions and their properties. Logarithm of a complex quantity. Gregory's series. Summation of Trigonometric series.		



CH. Bansi Lal. Govt. College Loharu.

Academic Session :- 2022-23

For the month of :- September, October, Nov. & December

B.A-Ist / Ist-Semester.

Month	Name of Assistance Professor	Subject	Topic / chapter to be covered.	Academic activity to be organized
September.	SEEMA.	Maths.	<ul style="list-style-type: none"> <li>⇒ Successive differentiation, Leibnitz theorem, Curvature, radius of Curvature.</li> <li>⇒ Radius of Curvature for Cartesian co-ordinate.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Revision</li> </ul>
October.			<ul style="list-style-type: none"> <li>⇒ Asymptotes in Cartesian and Polar co-ordinates, intersection of Curve.</li> <li>⇒ Polar Curve.</li> <li>⇒ Point of inflexion.</li> <li>⇒ Multiple points, Cusps,</li> <li>⇒ Nodes and Conjugate points. Types of Cusps -</li> <li>⇒ Reduction formulae.</li> <li>⇒ Quadrature, Volume and Surfaces of solids.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Revision.</li> </ul>
November.			<ul style="list-style-type: none"> <li>⇒ Multiple Integrals:</li> <li>⇒ Double integrals in Cartesian and polar Coordinates, area and volume of double integral</li> <li>⇒ Triple integrals Cartesian, cylindrical and spherical Coordinates, volume of Solid by Triple Integral.</li> </ul>	
December.				

C.H. Bansi Lal Govt. College, Loharu.

Academic Session :- 2022-23.

For the month of :- September, October, November & December

B.Sc-III<sup>rd</sup> (NOM) / B.A-III<sup>rd</sup>.

Month	Name of Assistance Professor	Subject	Topics/ chapters to be covered.	Academic activity to be organized
September	SEEMA	Maths.	⇒ Riemann Integral, Integrability of continuous and Monotonic functions, the fundamental theorem of integral Calculus, Mean value theorem of integral Calculus.	
October			⇒ Improper integral and their convergence, Comparison tests, ⇒ Integral as a function of a parameter. Continuity, Differentiability and integrability of an integral of a function of a Parameter.	⇒ Revision Riemann Integral  ⇒ Revision ⇒ Improper Integral.
November			⇒ Definition and ex. of metric spaces, nhd. limit pt. Subspace of a metric space, Cauchy seq.	Test on 9/11/22 Topic: Riemann integral.
December			⇒ Continuous functions, uniform continuity, compactness for metric space, B.W.P, finite intersection property.	

# CH. Bansilal Govt. College Loharu.

Academic Session :- 2022-23

For the month of :- September, October, Nov. & December

B.A-Ist / Ist-Semester.

Month	Name of Assistance Professor	Subject	Topic / chapter to be covered.	Academic activity to be organized
September.	SEEMA.	Maths.	<ul style="list-style-type: none"> <li>⇒ Successive differentiation, Leibnitz theorem, Curvature, radius of Curvature.</li> <li>⇒ Radius of Curvature for Cartesian co-ordinate.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Revision</li> </ul>
October.			<ul style="list-style-type: none"> <li>⇒ Asymptotes in Cartesian and Polar co-ordinates, intersection of Curve.</li> <li>⇒ Polar Curve.</li> <li>⇒ Point of inflexion.</li> <li>⇒ Multiple points, Cusps,</li> <li>⇒ Nodes and Conjugate points. Types of Cusps -</li> <li>⇒ Reduction formulae.</li> <li>⇒ Quadrature, Volume and Surfaces of solids.</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Revision.</li> </ul>
November.			<ul style="list-style-type: none"> <li>⇒ Multiple Integrals:</li> <li>⇒ Double integrals in Cartesian and polar Coordinates, area and volume of double integral</li> <li>⇒ Triple integrals Cartesian, cylindrical and spherical Coordinates, volume of Solid by Triple Integral.</li> </ul>	
December.				

C.H. Bansi Lal Govt. College, Loharu.

Academic Session :- 2022-23.

For the month of :- September, October, November & December

B.Sc-III<sup>rd</sup> (NOM) / B.A-III<sup>rd</sup>.

Month	Name of Assistance Professor	Subject	Topics/ chapters to be covered.	Academic activity to be organized
September	SEEMA	Maths.	⇒ Riemann Integral, Integrability of continuous and Monotonic functions, the fundamental theorem of integral Calculus, Mean value theorem of integral Calculus.	
October			⇒ Improper integral and their convergence, Comparison tests, ⇒ Integral as a function of a parameter. Continuity, Differentiability and integrability of an integral of a function of a Parameter.	⇒ Revision Riemann Integral ⇒ Revision ⇒ Improper Integral.
November.			⇒ Definition and ex. of metric spaces, nhd. limit pt. Subspace of a metric space, Cauchy seq.	Test on 9/11/22 Topic: Riemann integral.
December.			⇒ Continuous functions, uniform continuity, compactness for metric space, B.W.P, finite intersection property.	