# I – Academic Planner

## A. Teaching Plan ( Year: August 2021 Semester: Odd )

**Teacher's Name: Prof. Dinesh Khattar** **Department: Mathematics**

| S. No. | UPC | Paper Name | Core/AECC/GE/SEC | Topic/Unit | Start Date | End Date |
|---|---|---|---|---|---|---|
| **1.** | 32351302 | Group Theory 1 (B.Sc. (Hons.) Mathematics IIIrd Semester) | CORE | Symmetries, Dihedral Groups, Groups, Subgroups, centralizer and normalizer, Product of two groups, cyclic groups, Subgroups of cyclic groups | 16 August' 2021 | 25 September'2021 |
| | | | | Permutation groups, alternating group, cosets, Lagrange's theorem, External direct products, normal Subgroups, factor groups | 26 September'2021 | 22 October'2021 |
| | | | | Group homomorphism, Cayley's theorem, Properties of isomorphism, Isomorphism theorems | 23 October' 2021 | 7 December' 2021 |
| **2.** | 32351301 | Theory of Real Functions (B.Sc. (Hons.) Mathematics IIIrd Semester) | CORE | Limits of functions, Infinite limits and limits at infinity, continuous functions, sequential criteria, algebra of continuous functions, intermediate value theorem, location of roots theorem | 16 August' 2021 | 22 September'2021 |
| | | | | Uniform Continuity, differentiability of a function, algebra of differentiable functions, Relative extrema, Mean value theorem and its applications | 23 September'2021 | 30 October'2021 |
| | | | | Taylor's theorem with Lagrange's form of remainder and Cauchy's form of remainder, Taylor's series and Maclaurin's series expansion | 31 October' 2021 | 7 December' 2021 |

## Teaching Plan (Year: 2022 Semester: Even)

**Teacher's Name: Prof. Dinesh Khattar** **Department: Mathematics**

| S. No. | UPC | Paper Name | Core/AECC/GE/SEC | Topic/Unit | Start Date | End Date |
|---|---|---|---|---|---|---|
| 1. | 32351403 | Ring Theory & Linear Algebra I (B.Sc. (Hons.) Mathematics IVth Semester) | CORE | Rings, subrings, integral domain and fields, Ideals, factor rings, maximal and prime Ideals, ring homomorphism, factor rings | 03 January' 2022 | 05 February' 2022 |
| | | | | Vector spaces, subspaces, quotient spaces, Linear span, linear independence, basis, dimension of subspaces | 06 February' 2022 | 25 March' 2022 |
| | | | | Linear transformation, rank, nullity, matrix Representation, isomorphism, Isomorphism theorems, change of coordinate matrix | 26 March' 2022 | 27 April' 2022 |
| 2. | 32351602 | Ring Theory & Linear Algebra II (B.Sc. (Hons.) Mathematics VIth Semester) | CORE | Polynomial rings, principal ideal Domain, reducibility tests, divisibility in Integral domains, irreducibles, primes, unique factorization domains, Euclidean domains | 01 January' 2022 | 10 February' 2022 |
| | | | | Dual spaces, dual basis, double dual, Transpose of linear transformation, Annihilators, Eigen spaces, Diagonalizability, minimal polynomial | 11 February' 2022 | 12 March' 2022 |
| | | | | Inner product spaces, norms, Gram- Schmidt Orthogonalization process, adjoint of linear Operator, minimal solutions to system of equations, normal and self- adjoint operators, orthogonal projections, Spectral theorem | 21 March' 2022 | 27 April' 2022 |

### B. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

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| **Event Topic** | |
| **Type / Nature (FDP/Webinar/Workshop etc.)** | |
| **Organizing In-charge** | |
| **Details regarding invited Resource Person** | |
| **Nature of Participation (e.g. Invited Speaker, Participant etc.)** | |

| Date/s | | Timing/s | | Mode | |
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## C. Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

| Course Code | Course Name | Unique Paper Code | Topic Name | Day and Date | Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining |
|---|---|---|---|---|---|
| **563** | B.Sc. (Hons.) Mathematics (IIIrd Semester) | 32351302 | Groups, cyclic groups, permutation groups, cosets, normal subgroups | 25 October' 2021 | 20 November' 2021 |
| **563** | B.Sc. (Hons.) Mathematics (IIIrd Semester) | 32351301 | Limit of functions, limits at infinity, continuous functions, uniform continuity, differentiability | 20 October' 2021 | 22 November' 2021 |

| Course Code | Course Name | Unique Paper Code | Topic Name | Day and Date | Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining |
|---|---|---|---|---|---|
| **563** | B.Sc. (Hons.) Mathematics (IVth Semester) | 32351403 | Rings, subrings, fields, ideals, ring homomorphism, factor rings | 30 March' 2022 | 22 April' 2022 |
| **563** | B.Sc. (Hons.) Mathematics (VIth Semester) | 32351602 | Polynomial rings, integral domains, Euclidean domain, principal ideal domain, unique factorization domain | 31 March' 2022 | 25 April' 2022 |

***Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester**

## D. Organization of Department/College Society Meetings by Staff Advisor/Convener

| Department/Society | Meeting Date | Purpose |
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**E. College Functions**

| College Function | Function Date | Role to be played |
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