

Teaching Plan 2018-19 (Even Semester)
 (January 2020 to April 2020)
 Subject: Ring Theory and Linear Algebra-I
 Semester-IV

Department of mathematics, Ram Lal Anand College

Week	Course Content
07 Jan-10 Jan	Basic definition of rings and its examples, Properties of rings.
13 Jan-17 Jan	Definition of subrings and related examples, Basic concept of integral domain and fields, Finite fields.
20 Jan-24 Jan	Characteristic of a ring with examples, Properties of characteristic of a ring, Idempotent and nilpotent elements of a ring.
27 Jan-31 Jan	Definition of ideals with examples, Ideals generated by a subset of a ring.
03 Feb-07 Feb	Factor rings, Definition and results related to prime ideals, Related examples.
10 Feb-14 Feb	Definition of maximal ideals, Properties, theorems and examples related to maximal ideals, Relation between prime and maximal ideals.
17 Feb-21 Feb	Homomorphism of a ring with examples, Properties of ring homomorphism.
24 Feb-28 Feb	Isomorphism theorems and its applications, Field of quotients.
02 Mar-06 Mar	Definition and examples of vector spaces, subspaces, Algebra of subspaces.
16 Mar-20 Mar	Quotient spaces, Span of a set, linear independence and dependence of vectors.
23 Mar-27 Mar	Basis and dimension of a vector spaces with examples, Definition and examples of linear transformations.
30 Mar-3 April	Kernel and range spaces of linear transformations, Rank-Nullity theorem.
6 April-10 April	Representation of linear transformation through matrices, Algebra of linear transformations, Transition matrix.
13 April-17 April	Isomorphism theorems, Invertibility.
20 April-28 April	Revision of syllabus.