Semester	AUG 2022
Open to semester	13,21
Course code	**MT6134**
Course title	**Algebra - I**
Credits	4 /4
Course Coordinator & participating faculty (if any)	Supriya Pisolkar
Nature of Course	Lectures
Pre-requisites	Linear algebra, Group theory, Ring theory
Objectives (goals, type of students for whom useful, outcome etc)	integrated PhD students (2nd year) and PhD (first year students)
Course contents (details of topics /sections with no. of lectures for each)	1. Group theory (free groups, simple groups, composition series, Jordan Holder series) 2. Rings and modules (tensors, structure theorem for finitely generated modules over a PID, Jordan canonical form , rational canonical form) 3. assorted elementary concepts from commutative algebra 4. Category theory (definition and examples of categories, functors, natural transformations, equivalence of categories, universal constructions of inverse limit and direct limit) 5. Multilinear algebra (symmetric and exterior algebra) 6. Bilinear forms
Evaluation /assessment	End-Sem Examination-60% Mid-Sem Examination-40% Others-%
Suggested readings (with full list of authors, publisher, year, edn etc.)	Nathan Jacobson - Basic Algebra Vol I and II Dumit and Foote : Abstract Algebra M. Artin - Algebra S. Lang - Algebra