

Semester	AUG 2022
Open to semester	5,7,11
Course code	MT3114
Course title	Rings and Modules
Credits	4 /
Course Coordinator & participating faculty (if any)	Prashant Arote
Nature of Course	Lectures and Tutorials
Pre-requisites	Group theory, Advanced Linear Algebra (recommended but not mandatory)
Objectives (goals, type of students for whom useful, outcome etc)	In this course, you will study modules over rings which are generalisations of vector spaces.
Course contents (details of topics /sections with no. of lectures for each)	Rings, integral domains, PIDs, UFDS, polynomial rings, ideals, prime ideals, maximal ideals, quotient rings, Chinese remainder theorem, modules over commutative rings, isomorphism theorems, submodules, quotients, direct sums, tensor products, free modules, structure theorem for modules over a PID, canonical forms (Jordan and rational), localization of rings and modules.
Evaluation /assessment	End-Sem Examination-40% Mid-Sem Examination-30% Others-30%
Suggested readings (with full list of authors, publisher, year, edn etc.)	(1) Abstract Algebra: D.S. Dummit and R.M. Foote (2003) Wiley (2) Topics in Algebra: I.N. Herstein (1975) Wiley (3) Algebra: M. Artin (1991) Prentice Hall (4) Algebra: T.W Hungerford (2003) GTM Springer