

[Curriculum of M.Sc Mechanical Design Engineering](#)

Two options, each with total credit hours of 30, will be offered:

(A) Thesis Option: 8 Subjects (24 credit hours) + Research Thesis (6 credit hours)

(B) Non-thesis option: 10 Subjects (30 credit hours)

Course Code	Course Title
Group-A	Compulsory Subjects
MDE-501	Advance Stress Analysis
MDE-502	Theory of Plasticity
MDE-503	Theory of Elasticity
ME-601	Research Methods and Engineering Analysis
Group-B	Elective Subjects {(Any four for option (A); any six for option (B))}
MDE-504	Finite Element Analysis
MDE-505	Biomechanics
MDE-506	Nano-Mechanics
MDE-507	Reliability Engineering
MDE-508	Advanced Engineering Dynamics
MDE-509	Pressure Vessel Design
MDE-510	Theory of Plates and Shells
MDE-511	Advanced Control Engineering
MDE-512	Advanced Computer Aided Design
MDE-513	Mechanics of Composite Materials
MDE-601	Non-linear Analysis of Structures
MDE-602	Advanced Fatigue and Fracture Mechanics
MDE-603	Advanced Shell Structure
MDE-604	Analytical Methods in Vibrations
MDE-605	Structural Health Monitoring
MDE-606	Design Optimization and Analysis Techniques
MDE-607	Continuum Mechanics
ME-501	Mathematical Methods
ME-502	Environmental Management and Safety
ME-503	Advanced Mechanical Vibration
ME-504	Condition Monitoring
ME-505	Experimental Methods
ME-602	Modeling and Simulation
ME-603	Advanced Finite Element Methods
ME-604	Machine Noise and Vibration Analysis
ME-605	Failure Analysis of Engineering Materials
ME-606	Computer Aided Die and Fixture Design
ME-607	Welding and NDT
ME-608	Reliability and Quality Engineering
Group-C	Research Project
MDE-700	Research Thesis in the Relevant Area and Oral Examination {Compulsory for Option (A)}