



# National University of Sciences and Technology

## Course Description

<b>Course Title</b> Advanced Manufacturing Technologies	<b>Course Code</b> ME 823	<b>Credit Hours</b> 3 – 0
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### Textbook:

- “Exploring Advanced Manufacturing Technologies” by Steve Krar and Arthur Gill
- “Manufacturing Processes for Design Professionals” by Rob Thompson

### Reference Books:

- “Laser Material Processing” by William Steen
- “Rapid Prototyping: Principles and Applications” by Rafiq I. Noorani

### Course Objective:

- To make students understand different advanced manufacturing processes and systems and their suitable use in the manufacturing of designed products.

### Course Outline:

Introduction to several emerging and evolving manufacturing processes in product development. Rapid prototyping and manufacturing and other contemporary manufacturing processes. Generic characteristics of rapid prototyping processes, selective laser sintering, fused deposition modeling, 3D printing, new and emerging processes. Software support for RP, Rapid tooling and Reverse engineering. Laboratory demonstrations of 3DP, FDM and SLM. This module also provides students with an introduction to numerical control by considering basic N.C. processes and programming. It also provides the manufacturing engineer with a sound knowledge of flexible manufacturing system technology and organisation. Some of the topics covered include numerically controlled machining, FMS technology and organisation, future manufacturing paradigms and their relevance to the design of flexible manufacturing systems. Advanced topics include laser manufacturing and EBM etc.

### ASSESSMENTS

Description	Percentage Weightage (%)
Assignments	05-10%
Quizzes	10-15%
Mid Semester Exams	30-40%
End Semester Exam	40-50%