

	National University of Sciences and Technology	
	Course Description	
Course Title Engineering Asset Management & Maintenance	Course Code DME 818	Credit Hours 3 – 0

Textbook:

- Jardine, A. K. S. and Tsang, A. H. C., Maintenance, Replacement, and Reliability: Theory and Applications, 2nd Edition, CRC Press, Taylor and Francis Group, 2022

Reference Books:

- Campbell, J. D. and Jardine, A. K. S. and McGlynn, J., Asset Management Excellence: Optimizing Equipment Life Cycle Decisions, 2nd Edition, CRC Press, Taylor and Francis Group, 2011. The Management of Technological Innovation, M. Dodgson, D. Gann, D. Salter, Oxford Press
- Campbell, J. D., and Reyes-Picknell, J. V., Uptime: Strategies for Excellence in Maintenance Management, 3rd Edition, Productivity Press, 2016

Course Objective:

- Determination of optimal maintenance and replacement practices for components and capital equipment, Role of Emerging Technologies in Physical Asset Management (PAM).
- Brief introduction to inspection optimization of assets
- Hidden failures or soft failures, sustainable asset management
- Application of sustainable asset management for utilization, purchase, and disposal of a fleet of assets.
- Short-term deterministic replacement
- Probabilistic replacement
- Use of OREST (Optimal Replacement in Short Term) or any available software
- Optimization of physical asset management decisions.

Course Outline:

Phases of Design Process, Production planning and feasibility, design specification. Achieving Maintenance Excellence, Asset Management, Total Productive Maintenance (TPM), Reliability Centered Maintenance (RCM), Maintenance Programmed Development, Reliability Improvement through Preventive Maintenance, Reliability Improvement through Inspection: Health Monitoring Procedures, Role of Emerging Technologies in Physical Asset Management (PAM).

ASSESSMENTS

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

End Semester Exam	40-50%
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