

# H-Form ISE 332

Course Information:	
<b>Code and Title:</b>	ISE 332 Maintenance and reliability
<b>Prerequisites:</b>	ISE 341 + MATH 265-2
<b>Co requisite (if any)</b>	-
<b>Credit Hours: 3</b>	Lecture Hrs. (45), Tutorial Hrs. (0), Lab (15), <b>Total Credits</b> ( 60 )
<b>College/ Department:</b>	College of Engineering/Industrial and Systems Engineering

Course Description:
The Maintenance and Reliability course provides an introduction to the fundamental concept of reliability, exploring topics such as failure distributions and reliability characteristics. The curriculum covers the estimation of system reliability for both independent and dependent cases, along with maintenance workload analysis and calculations. Capacity planning of maintenance resources, maintenance work scheduling, and the auditing of maintenance, including the measurement of performance, are integral components of the course. Additionally, students gain insights into Computerized Maintenance Management Systems (CMMS) as a practical application in the field of maintenance and reliability.

Course Objectives:
The main objectives of the course are to provide students with a comprehensive understanding on various maintenance management processes and to enable them to understand the impact of maintenance management on system safety, reliability and cost effectiveness. Students have to acquire knowledge and techniques in reliability engineering and to be equipped with necessary knowledge for proper decisions related to maintenance and reliability improvement as to apply suitable maintenance techniques to engineering system

Course Learning Outcomes		
		PLO
Knowledge Understanding		
1.1	Recognize the importance of reliability and maintenance management to public utilities, transportations, building services, etc.	K2
1.2	Explain the philosophies and international compliance on safety and maintenance issues.	K4
Skills		
2.1	Employ common inspection methods, fault diagnosis, reliability, and hazard evaluation methods.	S1
2.2	Evaluate maintenance schedules and assess the corresponding risk with appropriate techniques and tools	S2
2.3	Apply a safe, reliable, hazard-free and cost-effective managerial strategy for selected system operating in a specific public utility or industry.	S3
Values		
3.1	Judge system data collection for reliability assessment	V2

Textbook:			
<b>Title:</b>	Planning and Control of Maintenance Systems: Modeling and Analysis.		
<b>Author(s):</b>	Salih O. Duffuaa, A. Raouf.		
<b>Publisher:</b>	Springer.	<b>Year and Edition:</b>	2 <sup>nd</sup> , 2015
<b>Other Useful Resources:</b>	Reliability-Centered Maintenance, John Moubray, Industrial Press, 2nd Edition, 1997		