Course specifications of

Reliability Engineering - MDP 324

University: Ain Shams **Faculty: Engineering**

Programme on which the course is given	B. Sc.. in Production Engineering
Major or minor element of programme	N.A.
Department offering the programme	Design and Production Engineering
Department offering the course :	Design and Production Engineering
Academic year/ Level :	Fourth year / Second semester
Date of specification approval :	11/24/2007

A- Basic Information

Title :	Reliability Engineering	**code :**	MDP-324
Credit Hours :	N.A.	**Lecture :**	2
Tutorial :	2	**Practical**	**Total:** 4

B- Professional Information

1 – Overall aims of course

By the end of the course the students will be able to:

- On completion of this course students should be able to summarize the foundations of theories for structural reliability engineering, including the associated probability and statistics theory, and be able to deal with the advanced topics such as th

2- Intended learning outcomes of course (ILOs)

a-Knowledge and understanding

a1 - Explain the fundamental concepts of reliability, maintainability and availability to quality professionals, systems engineers and technical managers.

a2 - Learn how the reliability characteristics of components, products and systems depend on time, the environmental and operating conditions, and the system configuration.

a3 - Recognize the specific failure time distributions including the exponential, normal, lognormal, and Weibull.

b-Intellectual skills

b1 - identify suitable failure models and analyse the structure of a system

b2 - use test data and component reliabilities to estimate and put bounds on system reliability

b3 - quantify the behaviour of a renewable system over time, and evaluate the influence of different system maintenance strategies

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c-Professional and practical skills

c1 - Utilize parametric, nonparametric and the proportional hazards lifetime models to analyze and interpret failure data

c2 - Perform reliability testing and analyze failure data

d-General and transferable skills

d1 - present a systematic, statistical methodology to analyze and handle safety problems in engineering

d2 - present practical applications to system and component reliability

5- List of references

5. 1 Course notes

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5. 2 Essential books (text books)

- Michael Beasley, "Reliability for Engineers",Macmillan Education Ltd.,1991.
- Carter, A.D.S., "Mechanical Reliability", Macmillan,1996.

5. 3 Recommended books

- Stephen P. Robins,David A. DeCenzo,"Funfamantals of Management", Pearson Prentice Hall, 2005, 5th Ed.

6- Facilities required for teaching and learning

˜ Appropriate teaching class accommodations including presentation board and data show.

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