



**Mehran University of Engineering and Technology, Jamshoro**  
**Department of Software Engineering**

**ORIGINAL SUBMITTED SYLLABUS**

<b>Title of Subject</b>	:	<b>Reliability Engineering</b>
<b>Code</b>	:	SE703
<b>Discipline</b>	:	Software Engineering (3 <sup>rd</sup> Semester)
<b>Effective</b>	:	20 ME SE and onwards
<b>Pre-requisite</b>	:	None
<b>Assessment</b>	:	10% Sessional 30% Mid Semester 60% Final Semester Examination
<b>Credit Hours</b>	:	2+0
<b>Minimum Contact Hours:</b>		<b>Marks : 50 + 00</b>

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**Specific Objectives of course:**

- To design safe and critical system software while considering different aspects of dependability and reliability.

**Course outline:**

- Introduction to Reliability Engineering. The Need for Reliable Software.
- Software Reliability Engineering Concepts. Basic Definitions. Software Reliability and System Reliability.
- The Dependability Concept. Reliability Modeling. Availability Modeling.
- Statistical Reliability Models for Software Reliability. Best Current Practices of software Reliability Engineering. Software Metrics for Reliability Assessment.
- Software Testing and Reliability. Software Reliability Tools. Review of Reliability Theory.
- Analytical Techniques and Basic Statistics for Reliability Engineering.
- Current research topics in Reliability Engineering.

**BOOKS RECOMMENDED**

1. An Introduction to Reliability and Maintainability Engineering, Ebeling, C. E., Waveland Press, Inc., latest edition.
2. IEEE Recommended Practice in Software Reliability Handbook of Software Reliability Engineering by Michael R. Lyu. Published by IEEE Computer Society Press and McGraw-Hill Book Company, latest edition.

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**Approval:**

Board of Studies:	Res.No.02	Dated:25-09-2018
AS&RB:	Res.No.154.17(a)	Dated:04-12-2018
Academic Council:	Res.No.94.4	Dated:27-03-2019