



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

<b>Title of Subject</b>	:	<b><u>Software Risk Management (SE708)</u></b>	
<b>Discipline</b>	:	Software Engineering (3 <sup>rd</sup> Semester)	
<b>Effective</b>	:	24MESE & onwards	
<b>Pre-requisite</b>	:	--	
<b>Assessment</b>	:	Theory: 10% Sessional, 30% Mid, 60% Final	
<b>Credit Hours</b>	:	2 + 0	<b>Marks: 50</b>
<b>Minimum Contact Hours:</b>		42	

---

**Specific Objectives of course:**

- To understand and manage software risks throughout the development lifecycle.
- To identify, analyze, and prioritize software risks using qualitative and quantitative methods.
- To integrate risk management practices into the SDLC and CMM framework.

**Course outline:**

Introduction to Software Risk Management

Definition of risk and risk management in the software context.  
Motivation for risk management and its impact on project success.  
Consequences of neglecting risk management in software projects.

SEI's Risk Management Paradigm

Overview of the Software Engineering Institute's (SEI) risk management approach.  
Understanding the key stages of risk management within the SEI paradigm.

Software Risk Identification and Recording

Techniques and tools for identifying and documenting software risks.  
Building a risk taxonomy to categorize and organize identified risks.

Software Risk Analysis and Classification

Analyzing the identified risks to assess their potential impact and likelihood.  
Classifying risks based on severity, priority, and other criteria.

Software Risk Planning

Developing risk mitigation and contingency plans.  
Creating strategies to address high-priority risks.

Software Risk Monitoring

Implementing mechanisms to monitor identified risks throughout the project.  
Reviewing and updating risk management plans as the project progresses.

Qualitative and Quantitative Risk Analysis

Conducting qualitative risk analysis using expert judgment and qualitative scales.  
Applying quantitative risk analysis methods, such as Monte Carlo simulation.

Risk Management and the Software Development Life Cycle (SDLC)

Integrating risk management activities into different phases of the SDLC.  
Addressing risks specific to requirements gathering, design, coding, testing, and deployment.

Risk Management in the Capability Maturity Model (CMM)

Exploring risk management practices within the CMM framework.  
Understanding the relationship between risk management and process maturity.

Other Useful Tools for Successful Risk Management

Examining risk management software and tools for risk tracking and analysis.  
Identifying additional resources and techniques for effective risk management.

Current Research Topics in Software Risk Management

Reviewing recent research and trends in software risk management.  
Exploring emerging methodologies and approaches to address evolving challenges.

**BOOKS RECOMMENDED**

1. Dale Walter Karolak, Software Engineering Risk Management, Wiley-IEEE Computer Society Pr, Latest Edition.
2. C. Ravindranath Pandian, Applied Software Risk Management: A Guide for Software Project Managers, Auerbach Publications, Latest Edition.
3. Boehm Barry, Software Risk Management, W. IEEE Computer Society Press, Latest Edition.

---

**Approval:**

**Board of Studies:**

**Resolution No. 2.3**

**Dated: 21-07-2023**

**Board of Faculty:**

**Resolution No. 21.9**

**Dated: 07-12-2023**

**AS&RB**

**Resolution No.**

**Academic Council:**

**Resolution No.**