



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

**ORIGINAL SUBMITTED SYLLABUS**

<b>Title of Subject</b>	:	<b>RESEARCH METHODOLOGY</b>
<b>Code</b>	:	SE602
<b>Discipline</b>	:	Software Engineering (1 <sup>st</sup> Semester)
<b>Effective</b>	:	19 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 + 0</b>

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**Specific Objectives of course:**

- To identify problems and formulate problem statement.
- To design hypothesis and conduct quantitative and qualitative research methods
- To conduct case studies for research goals

**Course outline:**

- Introduction to Research. Objectives of Research. Importance of Research Methodology in Research Study.
- Types of Research. Steps in Conducting Research. What is Literature Review? Why need for Literature Review. Types of Literature Review. Systematic Literature Review Protocol.
- Problem Statement and Problem formulation. Criteria for selecting a problem. Identifying Types of variables in Research.
- Types of hypothesis. Identifying Target Population. Types of Sampling. Sampling Techniques. Quantitative Research Methods.
- Scientific Methods. Design of Quantitative Surveys. Techniques to Conduct Quantitative Methods. Introduction to Qualitative Research. Qualitative Research Methods.
- Data Analysis and Theory in Qualitative Research Articles. Introduction to Mixed Methods Research. Design of Mixed Methods Research. Evaluation of Mixed Methods Research.
- Case Study. How to Conduct a Case Study. Case Study Protocol. Importance and Benefits of Case Study. Types of Statistical Tests to Conduct Data Analysis. Data Analysis Tools.
- Introduction to SPSS. Hands on Practice of SPSS. How to Define variables in SPSS. How to Record Collected Data in SPSS. Types of Tests via SPSS including Regression. Correlation.
- Cross tabulation and others. How to write Good Research Proposal. Contents of Thesis. Important Elements of Research Thesis.

**BOOKS RECOMMENDED**

1. Research design: Qualitative, quantitative and mixed methods approaches, Creswell, J. W. Thousand Oaks, CA: Sage,[Latest Edition].

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**Approval:**

Board of Studies:  
AS&RB:  
Academic Council:

Res.No.02  
Res.No.154.17(a)  
Res.No.94.4

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Dated:04-12-2018  
Dated:27-03-2019