



**R21 Regulations**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR**  
**(Established by Govt. of A.P., ACT No.30 of 2008)**  
**ANANTHAPURAMU – 515 002 (A.P) INDIA**

**MASTER OF COMPUTER APPLICATIONS**

<b>Course Code</b>	<b>SOFTWARE TESTING METHODOLOGIES</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>21F00204a</b>		<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>
<b>Semester</b>		<b>II</b>			
<b>Course Objectives:</b>					
<ul style="list-style-type: none"> <li>• To provide knowledge of the concepts in software testing such as testing process, criteria, strategies, and methodologies.</li> <li>• To develop skills in software test automation and management using latest tools.</li> </ul>					
<b>Course Outcomes (CO):</b> Student will be able to					
<ul style="list-style-type: none"> <li>• Have an ability to apply software testing knowledge and engineering methods.</li> <li>• Have an ability to design and conduct a software test process for a software testing project.</li> <li>• Have an ability to identify the needs of software test automation, and define and develop a test tool to support test automation.</li> <li>• Have an ability understand and identify various software testing problems, and solve these problems by designing and selecting software test models, criteria, strategies, and methods.</li> <li>• Have an ability to use various communication methods and skills to communicate with their teammates to conduct their practice-oriented software testing projects</li> </ul>					
<b>UNIT - I</b>		<b>Lecture Hrs:</b>			
Introduction: Purpose of testing, Dichotomies, model for testing, consequences of bugs, taxonomy of bugs Flow graphs and Path testing: Basics concepts of path testing, predicates, path predicates and Achievable paths, path sensitizing, path instrumentation, application of path testing..					
<b>UNIT - II</b>		<b>Lecture Hrs:</b>			
Transaction Flow Testing: transaction flows, transaction flow testing techniques. Dataflow testing: Basics of dataflow testing, strategies in dataflow testing, application of dataflow testing. Domain Testing: domains and paths, Nice & ugly domains, domain testing, domains and interfaces testing, domain and interface testing, domains and testability					
<b>UNIT - III</b>		<b>Lecture Hrs:</b>			
Paths, Path products and Regular expressions: path products & path expression, reduction procedure, applications, regular expressions & flow anomaly detection. Logic Based Testing: overview, decision tables, path expressions, kv charts, specifications.					
<b>UNIT - IV</b>		<b>Lecture Hrs:</b>			
State, State Graphs and Transition testing: state graphs, good & bad state graphs, state testing, Testability tips.					
<b>UNIT - V</b>		<b>Lecture Hrs:</b>			
Graph Matrices and Application: Motivational overview, matrix of graph, relations, power of a matrix, node reduction algorithm, building tools. Student should be given an exposure to a tool like JMeter or Win-runner).					
<b>Text Books:</b>					
1. Software Testing techniques - BarisBeizer, Dreamtech, second edition. 2. Software Testing Tools – Dr. K. V. K. K. Prasad, Dreamtech.					