# 20IT32J2 - SOFTWARE TESTING TOOLS

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| Course Category: | Job Oriented Elective | Credits: | 3 |
| Course Type: | Theory | Lecture-Tutorial-Practical: | 3-0-0 |
| Prerequisite: | Knowledge in software engineering basics is required. | Sessional Evaluation:  Univ. Exam Evaluation:  Total Marks: | 40  60  100 |
| Objectives: | * Learning the fundamentals of testing techniques. * Knowing various testing tools and their applicability. * Comparison of tools to explore the suitability for various domains. * Testing different applications. | | |

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| Course Outcomes | Upon successful completion of the course, the students will be able to: | |
| CO1 | Study the basics of testing, test process and supporting features based on its life cycle. |
| CO2 | Explore the V model for software development and getting awareness on defect management. |
| CO3 | Learn the basics of testing and study silk test tool and its applicability |
| CO4 | Apply the WinRunner tool to various test cases. |
| CO5 | Acquire knowledge on LoadRunner and JMeter tools for virtual users, JDBC and HTTP tests. |
| CO6 | Gain knowledge on TestDirector and QTP tools and their applicability to database and web applications. |
| Course Content | UNIT-I  **Fundamentals of Software Testing:**  Historical prospective, Definitions, Testing during Development Life Cycle, Requirement Traceability Matrix, Workbench, Important features, Misconceptions and principles, Cost aspects.  **Software Testing Process:**  Psychology, Verification and validation, Testing team and development team, cost of Quality, Characteristics of Test engineers, Levels of testing, Testing approaches, Types of testing, Test plan, Software Reliability, Manual testing and its Limitations/Drawbacks.  UNIT-II  **V-Test model:**  Introduction, V- model for software, Testing during proposal stage, requirements, planning, design and coding, VV model, Critical roles and responsibilities.  **Defect Management:**  Introduction and defect classifications, Defect Management Process, Life cycle, Template, root causes, estimation of impact, techniques for finding defect and reporting.  UNIT-III  **Software Testing Tools:**  Need and Taxonomy of testing tools, Functional/ Regression testing tools, Performance, Test management, and Source code testing tools, Procedure for selecting testing tool.  **Silk Test:** Overview, Architecture, Testing an application, The 4 test scripting language, Checkpoints and Data-driven test cases.  UNIT-IV  **WinRunner**: Overview, Testing an application, Test Script Language, Synchronization of test cases, Data-driven testing, Rapid test Script Wizard and Checking GUI objects.  UNIT-V  **LoadRunner:** Overview, Creating User script using Virtual User Generator, Creating Virtual users using LoadRunner controller.  **JMeter:** Overview, JDBC and HTTP tests  UNIT-VI  **TestDirector**: Overview, Test Management Process, Managing the testing process using TestDirector.  **QuickTest Professional (QTP)**: Overview, Testing an application, Synchronization, Creating checkpoints, Testing Calculator with parameterization, Testing database and web applications. | |
| Text Books &  Reference  Books | **TEXT BOOKS:**   1. Software Testing Tools covering with WinRunner, Silk Test, LoadRunner, JMeter, TestDirector and QTP with case studies by Dr.K.V.K.K Prasad, DreamTech Press publishers, 2010. 2. Software Testing Principles, Techniques and Tools by MG Limaye, McGraw Hill Publishers, 2012.   **REFERENCE BOOKS:**   1. Software Testing effective methods, Tools and Techniques by Renu Rajani and Pradeep Oak, Tata McGraw Hill Education Private Limited, 2004. 2. Software Testing: A Craftsman’s Approach by Paul C.Jorgensen, CRC press, 4th edition. 3. Foundations of Software Testing:ISTQB Certification by Rex Black, Dorothy Graham and Erik P.W.M. Veenendaal, Cenage Learning, 3rd Edition. | |
| E-Resources | 1. <https://nptel.ac.in/courses> 2. <https://freevideolectures.com/university/iitm> | |