Govt. of Karnataka, Department of Technical Education
Diploma in Computer Science & Engineering

Sixth Semester

Subject: Software Testing

Contact Hrs / week: 4 **Total hrs: 64**

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8			**Code of Ethics for Software Professionals**
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	8.3		Ethical Issues in Software Engineering
	8.4		Code of Ethics and Professional Practice
		8.4.1	Software Engineering Code of Ethics and Professional Practice
	8.5		Ethical issues: Right versus Wrong

Text book:

ISTQB Certification Study Guide, Dr. K.V.K.K. Prasad, Wiley-Dreamtech Press, ISBN: 9788177227116

Reference Books:

1. Software Testing Principles and Practices, Srinivasn desikan, Goplaswamy Ramesh, Pearson, ISBN: 9788177581218
2. Software Testing Tools, Dr. K.V.K.K. Prasad, Wiley- Dreamtech Press, ISBN 10: 8177225324

ISBN 13: 9788177225327

3. Software Testing Concepts and Tools, Nageshwara Rao Pusuluri, DreamTech, ISBN 10: 8177227122 ISBN 13: 9788177227123

General Objectives:

After the completion of the study of this subject students should be able to

1. Importance of developing quality software and how software testing helps in achieving this goal.
2. Foundations of software testing, important concepts and the testing process
3. Understand Testing levels and testing methods
4. Study Static testing – how to carry out testing without executing the code
5. Learn about dynamic testing and Test case design techniques. How to do the testing after executing the program and how to design test cases with examples
6. Know the details of Managing the testing Process
7. Know the need for testing tools and how to select a tool.

Specific Objectives

1	**Introduction**
	Importance of software
	The challenges in Software development
	The software fiascos
	Reasons for software failures
	How to avoid software failures?
	Testing professional's role
	Skills required for testing professionals
2	**Fundamentals of testing**
	What is testing?
	Psychology of testing
	When to test and where to test?
	How to test?
	Test case and test oracles
	Metrics in testing phases
	Criteria for completion of testing
	Myths and realities of testing
3	**Testing Levels and Types**
	Levels of Testing
	Testing approaches
	Types of testing

4	**Static Testing Techniques**
	What is static testing?
	Advantages of static testing
	Difference between static testing and dynamic testing
	Review mechanisms and formal review process
	Checklists
	Static code review and coding guidelines for C and Java
5	**Dynamic Testing and Test case design Techniques**
	Dynamic testing methodology
	Test specifications and test design
	Techniques for test case design
	Test case documentation
	Test case execution and incident reporting
	Defect logs
6	**Managing the Testing Process**
	Testing process management activities
	Project planning, budgeting and scheduling
	Testing team formation
	Reviews and monitoring of projects
	Risk management
	Metrics in testing phase
	Defect racking
	Configuration management
	Testing process improvement
	Testing standards and information security testing
7	**Software Testing Tools**
	Appreciate the need for automated testing tools
	Understand the requirements of testing tools
	Get to know the various categories of testing tools and their functionality
	Learn how to select a testing tool
	Learn the process of introducing the tools in an organization
8	**Code of Ethics for Software Professionals**
	What is Professional ethics?
	Ethical issues for software professionals
	Code of ethics and professional practices for software professionals

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Max. Marks: 100 Max. Time: 3 Hours

Model Question Paper

Note: 1. Section –I is compulsory.

2. Answer any TWO questions from each remaining Sections.

Section - I

1 a.	Fill in the blanks	5x1=5
i.		
ii.		
iii.		
iv.		
v		
b.	Write a short note on challenges in software projects	5

Section – II

2.	a).. What is the significance of testing? Explain	5
	b).Explain the strategy of developers as a Tester	5
	c).Write a note on V model	5
3	a).Differentiate static v/s Dynamic Testing	5
	b). What is a Test case? Explain the concept of Testing Process using test case	5
	c). What is the significance of Mutation Testing ?	5
4	a). Describe the different levels of Testing	10
	b). Compare Top down v/s Bottom up Testing	5

Section-III

5	a). Write a note on Beta Testing	5
	b). Explain The different Check list in Static Testing	10
6	a). Write a note on formal review process	5
	b). Explain the concept of Code optimization	5

	c). What are the Guidelines for Programming style?	5
7.	a). Write a note on Boundary value Analysis	5
	b). Compare Structural Testing at Module level v/s System level	5

Section -IV

8.	a).Write a note on Cost effect Analysis	5
	b). Explain Equivalence Partitioning	5
	c) Write a note on Formal method of Testing	5
9.	a). Classify the testing tools	5
	b). Writer a note on Software Reliability	5
	c). Explain Configuration management	5
10.	a).Explain the different classes of Testing Tools	10
	b). Write a note on Ethical issues in Software engineering	5