

Programme: MCA

Course Code: CSO-8

Title of Course: Quality Assurance and Usability

Number of Credits: 4 (4L-0T-0P)

Total contact hours: 48 hours (48L-0T-0P)

Effective from AY: 2021-22

<u>Prerequisites for the course</u>	Object oriented programming(CSC-106), software engineering tools & processes(CSC-204),web development(CSC-205)	
<u>Objectives</u>	The course is aimed at providing learners with the necessary exposure to the job responsibilities of Software Quality Assurance (QA) engineers & User Experience (UX) designers in the IT industry.	
<u>Content</u>	Testing Web Applications <ul style="list-style-type: none">• Manual Testing• Write test cases• Automated test scripting (e.g. Selenium, QTP)	8 hours
	Developer-centric Testing <ul style="list-style-type: none">• API testing (e.g. Postman, Karate, SOAP-UI)• Revisit to Unit Testing (e.g. NUnit, JUnit)• Tests for Model, View & Controller (MVC)	8 hours
	Building test suites <ul style="list-style-type: none">• Design Patterns in Test Automation<ul style="list-style-type: none">○ Page-Object Model (Page-Object pattern)○ Business-Layer Page-Object pattern○ Using software development design patterns (creational, structural and behavioral) in test scripting• Automated Testing Frameworks (e.g. Cucumber, Jasmine, Mocha, TestNG)• Testing for Behavior Driven Development & Testing for Business Driven Development (e.g. Gherkin)	12 hours
	Non functional testing <ul style="list-style-type: none">• Performance Testing (e.g. Apache JMeter)• Querying logs	6 hours
	Testing for Mobiles Apps	4 hours
	User Experience <ul style="list-style-type: none">• Gulf of evaluation and execution; 7 fundamental & universal design principles; Human error vs Bad design; Double-Diamond Model of Design• Visual Design Elements (line, color, shape, form vs space, value, texture) and extended elements (dot, typography, movement)	10 hours

	<ul style="list-style-type: none"> • Visual Design Principles (scale, dominance/emphasis, balance, harmony) • Wireframing, Mockup & Prototype (Paper & Digital); Use of tools (e.g. Pencil, Adobe XD, Sketch and/or Figma); Interaction & Animation • Raster (e.g. GIMP, Adobe Photoshop) & Vector (e.g. Inkscape, Adobe Illustrator, CorelDraw) Graphic Editing • Maintaining your UX designs“ portfolio (e.g. Behance, Dribbble) 	
<u>Pedagogy</u>	Hands-on assignments / tutorials / peer-teaching / mini-project / case studies/ presentations	
<u>References/ Readings</u>	<ol style="list-style-type: none"> 1. Dorothy Graham, Rex Black, Erik van Veenendaal, “Foundations of Software Testing ISTQB Certification” 2. Don Norman, “The Design of Everyday Things” 3. Joseph A. Gatto, Albert W. Porter, Jack Selleck, “Exploring Visual Design: The Elements and Principles” 4. https://tutsplus.com 5. https://www.youtube.com/watch?v=Ib8UBwu3yGA 6. https://www.youtube.com/watch?v=IyR_uYsRdPs 7. https://www.youtube.com/watch?v=68w2VwalD5w 	
<u>Learning Outcomes</u>	<ol style="list-style-type: none"> 1. Learners will understand software testing and quality assurance as a fundamental component of software life cycle 2. Learners will efficiently perform quality assurance activities using modern software tools 3. Learners will prepare test plans and schedules for a quality assurance project 4. Learners will understand design workflows while building software products 5. Learner will efficiently create user experience (UX) designs and other deliverables using modern software tools 	