Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
MCA5055	Software Quality Assurance	3	1	--	3	--	--	3
		Examination Scheme						
		ISE		MSE		ESE		
		10		30		100 (60% Weightage)		

Pre-requisite Course Codes	Software project management	
Course Outcomes	Student will be able to	
	CO1	To give a focus on concept of quality its models and improvements,
	CO2	To measure quality and metrics and quality management system through its element
	CO3	focuses on principles and practices in quality management system and gives guidance on measure and metrics in process and product domain of quality
	CO4	To get knowledge on software quality, its model and improvements, in-depth knowledge on measuring quality,
	CO5	To understand quality management system and on principles and practices of QMS

Module No.	Unit No.	Topics	Ref.	Hrs.
1		**Fundamentals Of Software Quality Engineering**	1	9
	1.1	Concepts of Quality		
	1.2	Hierarchical Modeling		
	1.3	Quality Models		
	1.4	Quality Criteria And its Interrelation		
	1.5	Fundamentals of Software Quality Improvement		
	1.6	Concepts of Process Maturity		
	1.7	Improving Process Maturity		
2		**Development In Measuring Quality**	1,2	9
	2.1	Selecting Quality Goals And Measures		
	2.2	Principles Of Measurement		
	2.3	Measures And Metrics		
	2.4	Quality Functional Deployment-Goal/Question/Measures		
	2.5	Paradigm		
	2.6	Quality Characteristics Tree		
	2.7	The FURPS Model And FURPS		
	2.8	Gilb Approach		
	2.9	Quality Prompts		
3		Quality Management System	1	9
	3.1	Element Of A Quality Engineering Program Quality Control		
	3.2	Assurance And Engineering- Reliability		
	3.3	Maintainability, Verifiability, Testability		

	3.4	Safety And Supportability		
	3.5	Historical Perspective Element Of QMS, Human Factors, Time Management		
	3.6	QMS For Software		
	3.7	Quality Assurance-ISO9000 Series		
	3.8	A Generic Quality Management standard		
	3.9	Tools For Quality		
4	4.1	Principles And Practices In Qms	3, 4	9
	4.2	Process-Product-Project		
	4.3	People In Software Development And Management		
	4.4	Spectrum		
	4.5	Principle And Critical Practices In QMS		
	4.6	ISO 9001And Capability		
	4.7	Maturity Models-Six Sigma		
	4.8	Zero Defects And Statistical Quality Control.		
5	5.1	Measures And Metrics In Process And Project Domain	5	9
	5.2	Key Measures For Software Engineers		
	5.3	Defects		
	5.4	Productivity And Quality		
	5.5	Measuring And Improving The Development Process		
	5.6	Assigning Measures To Process Elements And Events		
	5.7	Isikawa Diagrams		
	5.8	Metrics For Software Quality		
	5.9	Integrating Metric Within Software Engineering Process		
	5.10	Metrics For Small Organization		
			Total	**45**

References:

[1] Brian Hambling“ Managing Software Quailty”, Tata McGraw Hill
[2] Juran. J.M.Franks, M.Gyrna, “Quality Planning and Analysis(from the product development through use)”,Tata McGraw Hill
[3] Alcon Gillies“Software Quality: Theory and Management”, International Thomson, Computer Press 1997.
[4] Naik –Tripathi “Software Testing Quality Assurance”, Wiley Dreamtech
[5] Stephan H.Kan, “Metric and Model in Software Quality Engineering”, Addison Wesley,1995.
[6] Roger S. Pressman, “Software Engineering – A Practitioner’s Approach”, Fifth Edition McGraw Hill,
[7] 2001 Humphrey Watts, “Managing the Software Process”, Addison Wesley,1986