Software Requirement Management

Course Code	19CS4501C	Year	III	Semester	I
Course Category	Program Elective-I	Branch	CSE	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	Object Oriented Programming
Continuous Internal Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	Understand the Fundamentals of Requirement Engineering Process and estimation models	L2
CO2	Apply the Requirement elicitation Process in Software Development	L3
CO3	Apply the Requirement description and management techniques to software Development.	L3
CO4	Analyze various Software Estimation process models and identify the appropriate model for given software project	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3													
CO2	3								3	3				
CO3	3												1	
CO4		3										1		2

	Syllabus	
Unit No.	**Contents**	**Mapped CO**
I	**Introduction,** requirements, requirement engineering, requirements document, best way to write requirements, detailed requirements ,difference between functional and nonfunctional requirements, system stakeholders, requirements engineering process, recognizing requirements engineering process problems, suggesting a good requirements engineering process.	**CO1**
II	**Requirements Elicitation:** Assess system feasibility, identify and consult system stakeholders, record requirement sources, system's operating environment, using business concerns to drive requirements elicitation, domain constraints, collect requirements from multiple viewpoints, use scenarios to elicit requirements, operational process.	**CO1,CO2**
III	**Describing Requirements**: Standard templates use language, use diagrams, and supplement natural language requirements, specifying requirements quantitatively. **Requirements Management:** Uniquely identify each requirement, policies for requirements management, traceability policies, maintaining a traceability manual, change management policies, identify global system requirements, identify volatile requirements, record rejected requirements.	**CO1,CO3**
IV	**Software Size Estimation**: Software estimation, size based estimation, two views of sizing, function point analysis, Mark-II FPA, full function points, LoC estimation, and conversion between size measures.	**CO1,CO4**
V	**Effort, Schedule & Cost Estimation**: estimation factors, approaches for effort and schedule estimation, COCOMO II, Putnam estimation model, algorithmic models, **Cost estimation tools:** Desirable features of requirements management tools, some requirements management tools available.	**CO1,CO4**

Learning Resources
Text Books
1. Requirements Engineering: A good practice guide, Ian Sommerville and Pete Sawyer, Seventh edition, 2005, John Wiley.   2. Software Requirements and Estimation, Rajesh Naik, Swapna Kishore, TMH, 2001.
References
1. Managing Software Requirements, A Use Case Approach, Don, Second edition, 2003, Dean, Addision Wesley.   2. Requirements Engineering and Rapid Development, Ian Graham, 1998, Addision Wesley.   3. Mastering the Requirements Process, S.Robertson, J.Robertson, Second edition, 2006, Pearson.   4. Cryptography: Theory and Practice, Stinson. D, Third Edition, 2012, Chapman & Hall/CRC.
e-Resources and other Digital Material
1. https://onlinecourses.nptel.ac.in/noc20_cs68   2. https://thedigitalprojectmanager.com