SYMBIOSIS INTERNATIONAL (DEEMED UNIVERSITY)

(Established under section 3 of the UGC Act 1956)

Re - accredited by NAAC with 'A' Grade

Founder: Prof. Dr. S. B. Mujumdar, M.Sc.,Ph.D. (Awarded Padma Bhushan and Padma Shri by President of India)

(Established under section 3 of the UGC Act 1956, by notification No.F.9-12/2001-U3 Government of India)

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Sub Committee for Curriculum Development

Course Name: Software Quality Standards II

Course Code: T3299

(UG/PG): PG

Number of Credits: 3

Level: 4

Learning Objective(s): This course will provide the knowledge of Process Improvement culture in the Software Development Organization thru various models and methodologies. Students will study to establish the software processes through capability maturity model using various practices, tools, and techniques used in the software organization. Once the software processes are established, the organizations continuously work on improving the processes for better business performance. Student will learn software process improvement using six sigma methodology.

Pedagogy:

Lectures
Role Play
Case Study
Assignments
Group Activity

Pre-learning:

Software Quality Standards I course
Concepts of software engineering and SDLC
Skills in programming (minimum one programming language, developing user interface, data structures and queries)
Developing web applications (desirable)

Course Outline:

Sr No.	Topics for Classroom Sessions	Self Study Topics	Clock Hours
1	Capability Maturity Model (CMMi) Description of the process management and improvement principles that underpin the CMMI model Structure of the CMMI maturity models (both staged and continuous representations) Interpret the CMMI model as a member of a CMMI-Based appraisal team Apply the CMMI principles to meet the needs of systems and software development organizations Model-Based Process Improvement Overview of CMMI Components Institutionalization of CMMI Process Areas of CMMI Maturity Models Structure of the Continuous and Staged Representation		20
2	Introduction to People Capability Maturity Model(PCMM) Fundamental concepts, and the value it can bring to organizations, Practices described in People CMM® Ver 2.0 for improvement in workforce management activities, competency analysis & development and improvement in work force management activities based on experience.		5
3	Lean Methodology		6
4	Software Process Improvement using Six Sigma methodology		10
5	Process Improvement Culture in the Organization and Initiatives supported by Organizational Quality function on the same		4
		Total	**45**

Books Recommended:

1.   Chrissis Mary Beth, Konrad Mike,Shrum Sandra, CMMI for Development: Guidelines for Process Integration and Product Improvement (3rd Edition) SEI Series in Software Engineering

2.   Curtis Bill, Hefley William E., Miller Sally A. , The People CMM: A Framework for Human Capital Management (2nd Edition) ISBN-13: 978-0321553904

General Reading

- <http://www.sei.cmu.edu/reports/09tr003.pdf>

- Keeni Gargi, The Evolution of Quality Processes at Tata Consultancy Services, Tata Consultancy Services, IEEE SOFTWARE July/August 2000

Suggested Evaluation Methods:

Case study work	40
Conceptual Understanding (Quiz)	20
Written test	30

Parallel/Similar courses the existing curriculum:

S.No.	Name of the course	Institute where it was offered

Name of Member	Arun Marathe	Lucky Narayani		
Designation	Visiting Faculty	Visiting Faculty		
Org. / Inst.	SICSR			
Signature				

Name of the Expert:

Signature:

Date: