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**FIRST SEMESTER 2015-2016**

**COURSE HANDOUT (Part-II)**

August 3, 2015

**Course Number** : SS G562  
**Course Title** : SOFTWARE ENGINEERING AND MANAGEMENT

**Instructor-In-Charge** : K. Venkatasubramanian (Email: kvenkat@pilani.bits-pilani.ac.in)

**Course Home Page** : Nalanda website for the course

**Course Description**

Current concepts, methods, techniques, and tools of the software engineering process; software process models; process definition and assessment; software measurement and metrics; project planning, estimation and control; requirements analysis and specification, design methods; quality assurance and testing; configuration management; process improvement; case studies and project work.

**Scope and Objectives**

This course provides the knowledge and skills necessary to lead a software project team, understand the relationship of software development to overall product engineering, estimate time and costs, and understand the software process. Topics include life cycle models, requirements elicitation, configuration control, and quality assurance.

**Text Book**

**T1** Sommerville I, Software Engineering, Pearson Education, 9<sup>th</sup> Edition, 2011

**Reference Books**

- R1 Pressman, R.S., Software Engineering: A Practitioner's Approach, 7th (Alternate) Edition, McGraw Hill International Edition, 2010
- R2. Jalote, P., An Integrated Approach to Software Engineering, Narosa, 2nd Ed., 1998
- R3. Schach, S., Software Engineering, TMH, 7th Ed., 2007
- R4. Kelkar, S.A., Software Engineering: A Concise Study, PHI, 2007
- R5. Jawadekar, W.S., Software Engineering: Principles and Practice, TMH, 2004
- R6. Behforooz, A. & F.J. Hudson, Software Engineering Fundamentals, OUP, 1996
- R7. Blum, B.I., Software Engineering: A Holistic View, OUP, 1998
- R8. van Vliet, H., Software Engineering: Principles and Practice, Wiley, 3<sup>rd</sup> Ed., 2012
- R9. Jackson, M., Software Requirements and Specifications, Addison Wesley, 1995
- R10. Brooks, F.P., The Mythical Man-Month, Pearson, 1995





**Lecture Plan:**

Lecture No.	Topics	Chapter Reference to Text Book / Reference Book
1	Software and Software Engineering	T1-Chapter 1
2-3	Software Process Models	T1-Chapter 2
4	Agile Software Development	T1-Chapter 3
5	Principles that Guide Software Engineering Practice	R1-Chapter 4
6	Socio-Technical Systems	T1-Chapter 10
7-8	Requirements Engineering	T1-Chapter 4
9-10	Software Project Management	T1-Chapter 22
11-12	System Modeling : Scenarios, Information, and Analysis	T1-Chapter 5
13	Formal Modeling and Verification	R1-Chapter 21
14	An Introduction to UML	R1-Appendix I
15	Object-Oriented Concepts	R1-Appendix II
16	Design Concepts	R1-Chapter 8
17-18	Architectural Design	T1-Chapter 6
19-20	Design and Implementation	T1-Chapter 7
21	Quality Concepts	R1-Chapter 14
22	Review Techniques	R1-Chapter 15
23-24	Software Quality Assurance	R1-Chapter 16
25-26	Software Testing Strategies	T1-Chapter 8
27-28	Software Product Metrics	R1-Chapter 23
29-30	Software Process and Project Metrics	R1-Chapter 25
31-32	Software Project Planning and Estimation	T1-Chapter 23
33-34	Software Quality Management	T1-Chapter 24
35-36	Software Configuration Management	T1-Chapter 25
37-38	Software Process Improvement	T1-Chapter 26
39-40	Software Evolution	T1-Chapter 9

**Note:** All topics with chapter references to R1 are also reading assignments.

Additional reading assignments will be announced in the class whenever appropriate.

All such reading assignments will be included in the syllabi for the written examinations.





#### EVALUATION SCHEME:

S No.	Component	Duration	Weightage	Date & Hour	Remarks
1	Mid-Semester Test	90 Minutes	25%	9/10 4:00 - 5:30 PM	Closed Book
2	Team Project and Assignments	To be announced	40%	To be announced	Take Home
4	Comprehensive Examination	3 Hours	35%	11/12 AN	Open Book

**Team Project:** A complete project is to be done by a team of students using the best practices of software engineering. Evaluation will be done continuously, on the basis of the quality of work products delivered according to the project plan and schedule, as well as process compliance.

**Team Project Grading:** Grades assigned to individual students are determined using periodic presentations, design and other documents, teamwork, quality of the prototype and the product, and technological innovation.

**Chamber Consultation Hour:** Wednesdays, 4 PM to 5 PM, WILP Division Office

**Make-up Policy:** No makeup will be given for Team Project and Assignments. However, for Mid-Semester Test, makeup may be granted only on genuine grounds, if prior permission is sought from the Instructor-in-charge.

**Notices:** Notices regarding the course will be displayed on the Course Website on Nalanda and on the IPC Notice Board.

Instructor-in-Charge  
SS G562

