COURSE PLAN

1. Course Outline

Course Title	Software Engineering		
Course Code	CA725		
Department	Computer Applications	**No. of Credits**	3
Programme	MCA	**Learning Hours**	3 Per Week
Pre-requisites Course	Problem Solving and Programming, Database Management Systems, Object-oriented Programming	**Faculty Name**	Dr. N.P.Gopalan Ms. Jenie Arock X
E-mail	jenie@nitt.edu	**Telephone No.**	9442864208
Course Type	Core	**Office**	Lyceum 115 & 118
Course Materials	Software Engineering-A practitioner's approach		

2. Course Overview

This course covers techniques and methodology of commercial software engineering practices. The system software life cycle processes used in industry today and methods of graphically representing software, data and control will be learned

3. Course Objectives

To impart concepts of a comprehensive study on the theories, processes, methods, and techniques of building high-quality software in cost-effective ways.

4. Course Outcomes (CO)

Students will be able to:

1. State the proven principles/techniques/tools, current standards, and best practices of software Engineering.

2. Estimate cost, effort and risk involved in a project

3. Choose a suitable design model for software development

4. Develop a software using formal software engineering approaches

5. Describe the principles of re-engineering and reverse engineering

5. Course Outcome

Course Outcome (CO)	Aligned Programme Outcome (PO)											
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	L		M	H			H					
CO-2		L	M	M		H	H			L		
CO-3		M	H		L		H					
CO-4		L	H		M		M	H				
CO-5				M		M		H				

6. Course Teaching and Learning Activities

Week	Mode of Delivery	Topics
1.	Chalk and Talk, PPT	Introduction to Software Engineering
		The evolving role of software
		Its characteristics, components and applications
2.	Chalk and Talk, PPT	A layered technology
		Software process and its models
		Software process and project metrics
3.	Chalk and Talk, PPT	Measures, Metrics and Indicators
		Ethics for software engineers
		Project planning objectives
4.	Chalk and Talk, PPT	Project estimation
		Decomposition techniques
		Empirical estimation models
5.	Chalk and Talk, PPT	System Engineering
		Risk management
		Design concept and Principles
6.	Chalk and Talk, PPT	Methods for traditional, Real time of object oriented systems
		Comparisons and Metrics
		Quality assurance
7.	Chalk and Talk, PPT	Test case design
		White box testing
		Basis path testing
8.	Chalk and Talk, PPT	Control structure testing
		Black box testing
		Unit testing integration testing
9.	Chalk and Talk, PPT	Validation Testing and System testing
		Art of debugging and Metrics, Testing tools
		Clean-room Software Engineering
10.	Chalk and Talk, PPT	Software reuse
		Reengineering
		Reverse Engineering

- All the relevant material will be available in the course material website.

8. Course Assessment Methods

Sl. No.	Mode of Assessment	Week/Date	Duration	Weightage (%)
1.	Cycle Test – 1	4th week	60 Mins	20
2.	Cycle Test – 2	8th week	60 Mins	20
3.	Assignment test/Seminar	9th week	15 Mins	10
4.	End Semester Exam	-	180 Mins	50
			Total	100

9. Essential Readings (Textbooks, Reference books, Websites, Journals, etc.)

1. Rajib Mall, "Fundamentals of Software Engineering", 3rd Edition, PHI, 2009.
2. Roger S. Pressman, "Software Engineering-A practitioner's approach", 6thEdition, McGraw Hill, 2001.
3. Ian Sommerville, Software engineering, 8thEdition, Pearson education Asia, 2007.
4. Pankaj Jalote, "An Integrated Approach to Software Engineering", Springer Verlag, 1997..
5. James F Peters, WitoldPedryez, "Software Engineering – An Engineering Approach", John Wiley and Sons, 2000.
6. Ali Behforooz, Frederick J Hudson, "Software Engineering Fundamentals", Oxford University Press, 2009.

10. Course Exit Survey

1. The students through the class rep may give their feedback at any time to the course HOD which will be duly addressed.
2. The students may also give their feedback during Class Committee meeting.
3. 'Course Outcome Survey' form will be distributed on the last working day to all the students and the feedback on various rubrics will be analyzed.
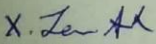4. The COs will be computed after arriving at the final marks.

11. Course Policy

1. Attendance

   100% is a must. However, relaxation up to 25% will be given for leave on emergency requirements (medical, death, etc.) and representing institute events.

2. Academic Honesty

   i) Possession of any electronic device, if any, found during the test or exam, the student will be debarred for 3 years from appearing for the exam and this will be printed in the Grade statement/Transcript.

   ii) Tampering of MIS records, if any, found, then the results of the student will be withheld and the student will not be allowed to appear for the Placement interviews conducted by the Office of Training & Placement, besides (i).
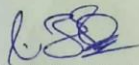
12. Additional Course Information

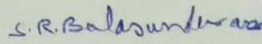The students can get their doubts clarified at any time with their faculty member.
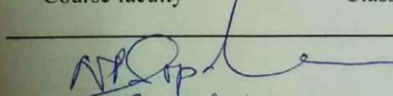
For Senate's Consideration

X. Zen A.K

(Ms. Jenie Arock X)

Course faculty

(Dr. P.J.A Alphonse)

Class Committee Chairperson

S.R.Balasundaram

(Dr. S.R. Balasundaram)

Head of the Department

N P GOPALAN
(HOD/FACULTY)