






Department of Computer Applications National Institute of Technology-Tiruchirappalli

1. COURSE OUTLINE TEMPLATE			
Course Title	Object Oriented Software Engineering		
Course Code	CAS 775	No. of Credits	3
Department	Computer Applications	Faculty	Dr. C. Sivaraj
Pre-requisites Course Code	NA		
PAC-Chairman	Dr. Michael Arock		
Other Course Teacher(s)/Tutor(s) E-mail	<u>sivaraj@nitt.edu</u>	Telephone No.	+91-7339431431
Course Type	Core course		
2. COURSE OVERVIEW			
<p>Object Oriented Software Engineering deals with both Software Engineering principles, software life cycle models, and Object Oriented concept in modelling the Software. It also analyses the quality and measurements in real time applications and testing.</p>			
3. COURSE OBJECTIVES			
<ul style="list-style-type: none">➔ To know basics of the software engineering process life cycle➔ Object Oriented Approach implemented towards the Software engineering➔ Introducing software engineering principles for Procedural and OO Approaches➔ Unified Modelling Language and its applications➔ Visual modelling and diagramming for softwares			
4. COURSE OUTCOMES (CO)			
<ul style="list-style-type: none">➔ Practice the application principles of object-oriented software and various CASE tools.➔ Implement the Object Oriented concepts in software models and life cycle.➔ Design decisions using UML➔ Acquire skills to think about problems and their solutions using appropriate methods of analysis and design➔ Develop an awareness of the role and responsibilities of the professional software engineer			

5. 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
Practice the application principles of object-oriented software and various CASE tools.		L	H		H							
Implement the Object Oriented concepts in software models and life cycle.	M	M			H							
Design decisions using UML	H	M	H		M			L				
Acquire skills to think about problems and their solutions using appropriate methods of analysis and design	H	M	M	L	M		L					
Develop an awareness of the role and responsibilities of the professional software engineer		L						M	H			L

6. COURSE TEACHING AND LEARNING ACTIVITIES			
Week	#Class	Topic	Mode of Delivery
1	Class I	Software development life cycle models,	Talk, Chalk
	Class II	Object Orientation,	Talk, Chalk
	Class III	Objects and Classes	Talk, Chalk
2	Class I	Features of OO Software life cycle,	Power point presentation
	Class II	Object oriented concepts and methodologies,	Power point presentation
	Class III	OO Modeling and Terminologies	Power point presentation
3	Class I	Software requirements analysis,	Power point presentation
	Class II	library management system,	Power point presentation
	Class III	software requirement elicitation techniques	Talk, Chalk, Power point presentation
4	Class I	Use case approaches,	Talk, Chalk, Power point presentation
	Class II	Document and good requirement characteristics,	Talk, Chalk, Power point presentation
	Class III	requirement change management, OO	Talk, Chalk, Power

		Analysis	point presentation
5	Class I	Structure Analysis Vs OO Analysis,	Talk, Chalk, Power point presentation
	Class II	Identification of Classes and Relationships	Talk, Chalk, Power point presentation
	Class III	Identification of State behavior,	Talk, Chalk, Power point presentation
	Class IV	Cost estimation techniques	Talk, Chalk, Power point presentation
6	Class I	Software design, OO design, UML, Interaction diagram,	Talk, Chalk, Power point presentation
	Class II	sequence and collaboration diagram,	Talk, Chalk, Power point presentation
	Class III	refinement of use case diagrams	Talk, Chalk, Power point presentation
7	Class I	Identification of Operations, Reflection in the OO environment,	Talk, Chalk, Power point presentation
	Class II	construction and development of details class diagrams, Test cases and User Cases,	Talk, Chalk, Power point presentation
	Class III	OO Design principles for S/W quality	Talk, Chalk, Power point presentation
8	Class I	S/W Implementation, Qualities and Metrics, Tools and Techniques, S/W quality	Talk, Chalk, Power point presentation
	Class II	models, measurement, analyzing metric data,	Talk, Chalk, Power point presentation
	Class III	size and structure metrics,	Talk, Chalk, Power point presentation
	Class IV	OO metrics and quality metrics	Talk, Chalk, Power point presentation
9	Class I	S/W verification techniques, Verification tools, Functional testing, OO Testing,	Talk, Chalk, Power point presentation
	Class II	Structure and OO Testing,	Talk, Chalk, Power point presentation
	Class III	Class, Object Testing and State based Testing	Talk, Chalk, Power point presentation
10	Class I	Mutation Testing, S/W maintenance,	Talk, Chalk, Power point presentation
	Class II	challenges in S/W maintenance, Estimation of Efforts,	Talk, Chalk, Power point presentation
	Class III	Configuration management, Regression testing	Talk, Chalk, Power point presentation

7. COURSE ASSESSMENT METHODS				
S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Test 1	4 th week	60 Minutes	20%
2	Test 2	8 th week	60 Minutes	20%
3	Assignment/Seminar	7 th week to 10 th Week	6 days	10%
4	Semester Exam	November	180 Minutes	50%
8. ESSENTIAL READINGS : Textbooks, reference books, etc				
1. Yogesh Singh Ruchika Malhotra, "Object Oriented Software Engineering", PHI, 2012. 2. Timothy C.Lethbridge and Robert Laganiere, "Object Oriented Software Engineering", McGraw Hill 2001. 3. G.Booch, Benjamin Cummings," Object Oriented Analysis and Design with Applications", 3 rd edition, Addison Wesley, 2007.				
9. COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)				
1. The students through the class rep may give their feedback at any time to the course coordinator 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.				
10. COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)				
At classes: Interactive and productive interactions are anticipated. Abusive terms are highly restricted. Attendance is noted for every class. Sharing resources are encouraged and innovative objectives are discussed in the class. Appreciate if they are willing to prepare for placement and participating social services after informing properly to the department.				
Exam Policy: Exams are equal to all the students. No privileges will be given to any one at any cost. Absentees on cycle tests won't be allowed for end semester examinations. Assignments are mandatory and should be submitted by the notification of the teacher. Seminars are optional, in order to find potential improvement and feed back for students from themselves.				
Basic Policies on dishonest or Misconduct: Students are encouraged to come with notebooks and encouraged to note down from teachers lecture. Asked to avoid electronic gadgets and unwanted notes at the time of examinations. Copying and re using existing notes for assignments are not appreciable.				
11. ADDITIONAL COURSE INFORMATION				
The students can get their doubts clarified at any time with their faculty member with prior appointment.				
For Senate's Consideration				
 C. Sivaraj Course Faculty	 Dr. Michael Arock PAC-Chairperson		 Dr. S.R. Balasundaram HOD	