National Institute of Technology - Tiruchirappalli
Department of Computer Applications

COURSE PLAN

1. Course Outline

Course Title	Object-Oriented Analysis and Design		
Course Code	CA728		
Department	CA	**No. of Credits**	3
Pre-requisites Course Code	CA716,CA729	**Faculty Name**	Dr.S.R.Balasundaram Dr. M.P. Anuradha
Course Co-ordinator			
E-mail	blsundar@nitt.edu mpanuradha@nitt.edu	**Telephone No.**	9994291420 0431-2504652 9994300887
Course Type	Core Course		

2. Course Overview

Object-oriented analysis and design (OOAD) is a popular technical approach for analyzing, designing an application, system, or business by applying the object-oriented paradigm and visual modeling throughout the development life cycles to foster better stakeholder communication and product quality and let the students expertise in java programming

3. Course Objectives

- To learn the concepts of Objects Oriented Analysis and Design;exposing the development of OOAD based applications

4. Course Outcomes (CO)

Students will be able to:

- Define the fundamentals of OO approach
- Design OO Application using design patterns
- Solve real world problems by applying OOAD principle
- Acquire expertise in Java Programming

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
Define the fundamentals of OO approach	H						H					
Design OO Application using design patterns	H	H	H					M				
Solve real world problems by applying OOAD principle			H	H	H	H		H	M			
Acquire expertise in Java Programming	H				H							

6. Course Teaching and Learning Activities

Week	No.of Classes	Topics covered	Mode of Delivery
1.	Class-I	Introduction to Object oriented analysis design	Chalk and Talk
	Class-II	Evolution of the object model, Elements of the object model	Power Point Presentation
	Class-III	Nature of a classes and object, Relationships among classes and objects	Power Point Presentation
2.	Class-I	Classification,Identification of classes and objects	Chalk and Talk , Power Point Presentation
	Class-II	Key abstractions and mechanisms	Chalk and Talk , Power Point Presentation
	Class-III	Basic and Advanced modeling techniques	Chalk and Talk , Power Point Presentation
3.	Class-I	Methodology,Modeling and UML	Chalk and Talk , Power Point Presentation
	Class-II	Rambaugh's Method,Booch Method	Chalk and Talk , Power Point Presentation
	Class-III	Jacobson Method and its comparisons,UML	Chalk and Talk , Power Point Presentation
4.	Class-I	Static and Dynamic Models	Chalk and Talk, Power Point Presentation
	Class-II	Diagrams and use cases	Power Point Presentation
	Class-III	Process of desing,design principles,architectural patterns,desing document	Chalk and Talk
5.	Class-I	Difficulties and risks in design,reusable subsystem	Chalk and Talk
	Class-II	Design patterns-singleton,observer,adapter	Chalk and Talk

Week	No.of Classes	Topics covered	Mode of Delivery
	Class-III	Facade,proxy with examples	Chalk and Talk
6.	Class-I	Pattern categories,Relationships between patterns,pattern descriptions	Chalk and Talk
	Class-II	Patterns based Applications,Object oriented Database	Chalk and Talk
	Class-III	Introduction to java, features , structures	Power Point Presentation
7.	Class-I	elements of java, Array, String,	Power Point Presentation
	Class-II	String Buffer,Vectors	Power Point Presentation
	Class-III	Object oriented features,classes,objects	Power Point Presentation
8.	Class-I	Constructors,package,inheritance	Power Point Presentation
	Class-II	Interface ,Abstract slass	Power Point Presentation
	Class-III	Special type of classes	Chalk and Talk , Power Point Presentation
9.	Class-I	Applet Programming	Chalk and Talk , Power Point Presentation
	Class-II	AWT,Graphics	Chalk and Talk , Power Point Presentation
	Class-III	Event Handling,Exception Handling	Power Point Presentation
10.	Class-I	Utilities and Collections,I/O streams	Power Point Presentation
	Class-II	Multi threaded Programming	Power Point Presentation
	Class-III	Swings,J2EE Architecture	Power Point Presentation
11.	Class-I	Sample programs,Discussion	Power Point Presentation

7. Course Assessment Methods – Theory

Sl.No.	Mode of Assessment	Week/Date	Duration	Weightage (%)
1.	Cycle Test – 1	6th week	60 Mins	20
2.	Cycle Test – 2	12th week	60 Mins	20
3.	Assignment	7th week,10 th week	7 days	10
4.	End Semester Exam	-	180 Mins	50
			Total	100

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

REFERENCES:

1. Grady Booch et al, "Object-Oriented Analysis and Design with Applications", 3rd Edition, Pearson Education, 2007.
2. Michael Blaha and James Rumbaugh, "Object-Oriented Modeling and Design with UML", 2nd Edition, Pearson Education,2005
3. PatricNaughton , Herbert Schildt, "Java 2 Complete Reference", Tata McGraw Hill, 1999.
4. Joshua Bloch, "Effective Java", Addison-Wesley; 2nd Edition, 2008
5. Bruce Eckel, "Thinking in Java", Prentice Hall; 4th Edition, 2006
6. Erich Gamma, Richard Helm, Ralph Johnson & John Vlissides, "Design   Patterns: Elements of Reusable Object-oriented Software", Pearson Education India, 2004.

9. Course Exit Survey (mention the ways by which the feedback about the course is assessed and indicate the attainment level)

- The students through the class rep may give their feedback at any time to the course co-ordinator which will be duly addressed.
- The students may also give their feedback during Class Committee meeting.
- '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.
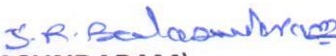- The COs will be computed after arriving at the final marks.

10. Course Policy (including plagiarism, academic honesty, attendance, etc.)

- **Plagiarism**
  The students are expected to come out with their original code for problems given assignments during the class work, and tests/examinations. If found to copy from internet/other students, zero marks will be assigned.
- **Attendance**
  100% is a must. However, relaxation will be given for leave on emergency requirements (medical, death, etc.) and representing institute events. Minimum 75% is required.
- **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 with held and the student will not be allowed to appear for the Placement interviews conducted by the Office of Training & Placement, besides (i).

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

S. R. Balasundaram

(Dr.S.R.BALASUNDARAM)
Course Faculty

M. P. Anuradha

(Dr.M.P.ANURADHA)
Course Faculty

Class Committee Chairperson

S.R.Balasundaram

Dr.S.R.BALASUNDARAM
HoD