NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF COMPUTER APPLICATIONS

COURSE PLAN – PART I			
Name of the programme and specialization	MCA		
Course Title	OBJECT ORIENTED ANALYSIS AND DESIGN		
Course Code	CA729	No. of Credits	3
Course Code of Pre-requisite subject(s)	CA716, CA710		
Session	July 2022	Section (if, applicable)	B
Name of Faculty	A.Meharaj Begum (Research Scholar) Mentor: Dr.S.R.Balasundaram	Department	CA
Official Email	405119051@nitt.edu	Telephone No.	7708453199
Name of Course Coordinator(s) (if, applicable)	Dr. R. Eswari		
Official E-mail	eswari@nitt.edu	Telephone No.	
Course Type (please tick appropriately)	✓ Core course		

Syllabus (approved in BoS)

Object Model – Evolution, Elements – Nature of Classes and Objects – Relationships among Classes - Classification – Identification of classes and objects – Key abstractions and mechanisms – Basic and Advanced Modeling techniques.

Methodology – Modeling and UML – Rambaugh's Method – Booch Method – Jacobson et al Method – Comparisons – UML – Static-Dynamic Models – Diagrams –Use Cases.

Process of design, design principles, architectural patterns, design document, difficulties and risks in design - Frameworks: reusable subsystem. Design patterns – Singleton, observer, adapter, Façade, proxy with examples. - Pattern Categories - Relationships between patterns - Pattern descriptions – Patterns based Applications – Object Oriented Database

Java - Features – Structure – Elements of Java – Array, String, String Buffer, Vectors –Methods – Object Oriented Features- Classes, Objects – Constructors – Package – Inheritance – Interface – Abstract Class - Special types of classes.

Applet Programming – AWT – Graphics - Event Handling – Exception Handling – Utilities and Collections – I/O Streams - Multithreaded Programming - Swings - J2EE Architecture

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.

COURSE OBJECTIVES

To learn the concepts of Object Oriented Analysis and Design; exposing the development of OOAD based applications.

MAPPING OF COs with POs

Course Outcomes	Programme Outcomes (PO) (Enter Numbers only)
1. Define the fundamentals of OO approach	1,2,3
2. Design OO Application using design patterns.	1,2,4,5
3. Solve real world problems by applying OOAD principle	1,2,3,4,5,7
4. Acquire expertise in Java Programming	1,2,3,4,5

COURSE PLAN – PART II

COURSE OVERVIEW

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Week 1/ 3 Hrs	Object Model – Evolution, Elements – Nature of Classes and Objects – Relationships among Classes	Chalk and Talk, PPT
2	Week 2/ 3 Hrs	Classification – Identification of classes and objects – Key abstractions and mechanisms – Basic and Advanced Modeling techniques.	Chalk and Talk, PPT
3	Week 3/ 3 Hrs	Methodology – Modeling and UML – Rambaugh's Method	Chalk and Talk, PPT
4	Week 4/ 3 Hrs	Booch Method – Jacobson et al Method – Comparisons – UML	Chalk and Talk, PPT

5	Week 5/ 3 Hrs	– Static-Dynamic Models – Diagrams –Use Cases	Chalk and Talk, PPT
6	Week 6/ 3 Hrs	Process of design, design principles, architectural patterns, design document, difficulties and risks in design - Frameworks: reusable subsystem	Chalk and Talk, PPT
7	Week 7/ 3 Hrs	Design patterns – Singleton, observer, adapter, Façade, proxy with examples	Chalk and Talk, PPT
8	Week 8/ 3 Hrs	Pattern Categories - Relationships between patterns - Pattern descriptions – Patterns based Applications – Object Oriented Database	Chalk and Talk, PPT
9	Week 9/ 3 Hrs	Java - Features – Structure – Elements of Java – Array, String, String Buffer, Vectors	PPT
10	Week 10/ 3 Hrs	Methods – Object Oriented Features- Classes, Objects – Constructors – Package	Chalk and Talk, PPT
11	Week 11/ 3 Hrs	Inheritance – Interface – Abstract Class - Special types of classes.	Chalk and Talk, PPT
12	Week 12/ 3 Hrs	Applet Programming – AWT – Graphics - Event Handling – Exception Handling	PPT
13	Week 13/ 3 Hrs	Utilities and Collections – I/O Streams - Multithreaded Programming - Swings - J2EE Architecture	PPT

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Cycle Test 1	As per schedule	60 mins	20
2	Cycle Test 2	As per schedule	60 mins	20
3	Assignment	As per schedule	-	10
CPA	Compensation Assessment*	7^{th} to 10^{th} week	60 mins	20
4	Final Assessment *	As per schedule	90 mins	50

***mandatory; refer to guidelines on page 4**

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

- The students through the class representative may give their feedback at any time to the course chairman 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.

COURSE POLICY (including compensation assessment to be specified)

MODE OF CORRESPONDENCE (email/ phone etc)

The course handling faculty will be available at Room No:106, Dept of Computer Applications (Research Scholar Lab)

Phone : 7708453199

Mail Id: 405119051@nitt.edu

COMPENSATION ASSESSMENT POLICY

One Compensation assessment will be conducted for students who were absent for cycle tests due to genuine reasons.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award

the punishment if the student is found guilty. The report shall be submitted to the Academic office.

- The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION, IF ANY

FOR APPROVAL

Course Faculty _____ **CC- Chairperson** _____ **HOD** _____

(Research Scholar)

Mentor: Dr.S.R.Balasundaram

Guidelines

a) The number of assessments for any theory course shall range from 4 to 6.

b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.

c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.

d) The passing minimum shall be as per the regulations.

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2018	2017	2016	2015	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.

f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.

g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.