Course Code	PIT21G302J	Course Name	Component Based Technology	Course Category	G	Generic Elective Courses	L	T	P	C
							3	0	2	4

Pre-requisite Courses	Nil	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Applications		Data Book / Codes/Standards	Nil	

Course Learning Rationale (CLR):	The purpose of learning this course is to,	Learning

		1	2	3
CLR-1 :	Familiarize the software lifecycle models and software development process			
CLR-2 :	Understand the various techniques for requirements, planning and managing a technology project			
CLR-3 :	Examine basic methodologies for software design, development, testing, closure and implementation			
CLR-4 :	Understand manage users expectations and the software development team			
CLR-5 :	Acquire the latest industry knowledge, tools and comply to the latest global standards for project management			

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)
CLO-1 :	Identify the process of life cycle model and process project	3	80	70
CLO-2 :	Analyze and specify software requirements through a productive working Relationship with project stakeholders	3	85	75
CLO-3 :	Design the system based on Functional Oriented and Object Oriented Approach for Software Design.	3	75	70
CLO-4 :	Develop the correct and robust code for the software products	3	85	80
CLO-5 :	Perform by applying the test plan and various testing techniques	3	85	75

Program Learning Outcomes (PLO)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Disciplinary Knowledge	Critical Thinking	Problem Solving	Analytical Reasoning	Research Skills	Team Work	Scientific Reasoning	Reflective Thinking	Self-Directed Learning	Multicultural Competence	Ethical Reasoning	Community Engagement	ICT Skills	Leadership Skills	Life Long Learning
CLO-1 :	L	H	-	H	L	-	-	-	L	L	-	H	-	-	-
CLO-2 :	M	H	L	M	L	-	-	-	M	L	-	H	-	-	-
CLO-3 :	M	H	M	H	L	-	-	-	M	L	-	H	-	-	-
CLO-4 :	M	H	M	H	L	-	-	-	M	L	-	H	-	-	-
CLO-5 :	H	H	M	H	L	-	-	-	M	L	-	H	-	-	-

Duration(Hour)		15	15	15	15	15
S-1	SLO-1	Introduction software components	Java Based Component Technology	Java and CORBA	Distributed COM	Connectors
	SLO-2	Inevitability of components	Threads	Enterprise service interfaces	Object reuse	Contexts
S-2	SLO-1	Objects Components and objects	Java Thread models	Java and XML	Interfaces and polymorphism Categories	EJB Containers
	SLO-2	Fundamental properties of component technology	Multithreading Garbage collection	Interface Definition Language	Interfaces and versioning	CCM Containers
S-3	SLO-1	Components are units of deployment	Java Beans Java Bean properties	Object Request Broker	Uniform data transfer Dispatch interfaces	CLR context and channels
	SLO-2	Modules	JSP and servlets	System Object Model Portable object adapter	Connectable objects	Tuple and object spaces Black box component framework
S 4-5	SLO-1	Lab 1: - Develop and implement interface program	Lab 4 :- Develop a java program that implements Multi-thread application	Lab 7 : Implement Customer Record using XML	Lab 10: Implement OLE	Lab 13: Develop an Application using .Net framework
	SLO-2					
S-6	SLO-1	Interfaces	Properties	CORBA component model	OLE Containers and servers	Directory objects
	SLO-2	Standardization and normalization	Interface Definition Language	Features of CORBA component	Active X controls	Container modes
S-7	SLO-1	Direct and Indirect interfaces	Introspection	CCM components	Features of Active X controls	Advanced applications based on compound documents
	SLO-2	Callbacks	JAR files	Containers	.Net components	Black Box and OLE
S-8	SLO-1	Examples of Callbacks and contracts	Object serialization	CORBA complaint implementations	Common language frameworks	Cross development environment
	SLO-2	Directory Services	Reflection	CORBA facilities	Assemblies	Component-oriented programming
S9 - 10	SLO-1	Lab 2 : Develop Java Bean Program	Lab 5: Develop Java servlet Program	Lab 8 : Develop Java Applet Program	Lab 11: Develop and implement an active control	Lab 14 : Develop an application based on Black Box and OLE
	SLO-2					

S-11	SLO-1	A client of the directory service	Enterprise JavaBeans	Application Server	App domains	Component design and implementation tools
	SLO-2	Proofing the directory services	Distributed Object models	Application objects	Contexts	Language support
S-12	SLO-1	Component Architecture	RMI	Meta-object facility	Reflection	Testing tools
	SLO-2	Benefits of component architecture	Brief about RMI	Assemblies	remoting	Examples on testing tools
S-13	SLO-1	Components	RMI-IIOP	Model driven architecture	Remoting applications	Assembly Tools
	SLO-2	middleware	RMI applications	XML	Domains	Examples on assembly tools
S14 - 15	SLO-1	Lab 3 : Develop Java jsp Program	Lab 6: Develop a program on Stock System using RMI	Lab 9 : Implement Web Services using XML	Lab 12 : Develop and implement an App domains	Lab 15 : Develop an EJB application simulating an ATM System.
	SLO-2					

Learning Resources	1. Clemens Szyperski, "Component Software: Beyond Object-Oriented Programming", Pearson Education publishers, 2003.	1. Ed Roman, "Mastering Enterprise Java Beans", John Wiley & Sons Inc., 1999. 2. Mowbray, "Inside CORBA", Pearson Education, 2003. 3. Freeze, "Visual Basic Development Guide for COM & COM+", BPB Publication, 2001. 4. Hortsamann, Cornell, "CORE JAVA Vol-II" Sun Press, 2002.

Learning Assessment										
Bloom's Level of Thinking		Continuous Learning Assessment (50% weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (15%)		CLA – 3 (15%)		CLA – 4 (10%)#			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	20%	20%	15%	15%	15%	15%	15%	15%	15%	15%
	Understand										
Level 2	Apply	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	Analyze										
Level 3	Evaluate	10%	10%	15%	15%	15%	15%	15%	15%	15%	15%
	Create										
	Total	100 %		100 %		100 %		100 %		100%	

CLA – 4 can be from any combination of these: Assignments, Seminars, Short Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

Course Designers		
Experts from Industry	**Experts from Higher Technical Institutions**	**Internal Experts**
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