

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous) Dundigal, Hyderabad -500 043

INFORMATION TECHNOLOGY

COURSE DESCRIPTOR

Course Title	CASE TOOLS LABORATORY					
Course Code	AIT103	AIT103				
Programme	B. Tech	B. Tech				
Semester	V ľ	V IT				
Course Type	Core					
Regulation	IARE - R16					
		Theory		Practio	cal	
Course Structure	Lectures	Tutorials	Credits	Laboratory	Credits	
	3					
Chief Coordinator	Mr. N Bhaswanth, Assistant Professor					
Course Faculty	Mr. G Cha	ndrasekhar, Assist	ant Professor,			

I. COURSE OVERVIEW:

CASE tools also known as Computer-aided Software Engineering tools is a kind of component-based development which allows users to rapidly develop information systems. The main goal of case technology is the automation of the entire information systems development life cycle process using a set of integrated software tools, such as modeling, methodology and automatic code generation. Component based development has several advantages over custom development. The various advantages are, the availability of high quality, defect free products at low cost and at a faster time. The prefabricated components are customized as per the requirements of the customers. The components used are pre-built, ready-tested and add value and differentiation by rapid customization to the targeted customers.

II. COURSE PRE-REQUISITES:

Level	Course Code	Semester	Prerequisites
UG	ACS107	IV	Software Engineering Laboratory

III. MARKS DISTRIBUTION:

Subject	SEE Examination	CIA Examination	Total Marks
Case Tools Laboratory	70 Marks	30 Marks	100

IV. DELIVERY / INSTRUCTIONAL METHODOLOGIES:

×	Chalk & Talk	×	Quiz	×	Assignments	×	MOOCs
~	LCD / PPT	~	Seminars	×	Mini Project	~	Videos
~	Open Ended Experiments						

V. EVALUATION METHODOLOGY:

Each laboratory will be evaluated for a total of 100 marks consisting of 30 marks for internal assessment and 70 marks for semester end lab examination. Out of 30 marks of internal assessment, continuous lab assessment will be done for 20 marks for the day to day performance and 10 marks for the final internal lab assessment.

Semester End Examination (SEE): The semester end lab examination for 70 marks shall be conducted by two examiners, one of them being Internal Examiner and the other being External Examiner, both nominated by the Principal from the panel of experts recommended by Chairman, BOS.

The emphasis	on the ev	norimonte ie	broadly	based o	on the f	following	critoria
The emphasis	on the ex	perments is	s broaury	Dascu	on the i	lonowing	criteria.

20 %	To test the preparedness for the experiment.
20 %	To test the performance in the laboratory.
20 %	To test the calculations and graphs related to the concern experiment.
20 %	To test the results and the error analysis of the experiment.
20 %	To test the subject knowledge through viva – voce.

Continuous Internal Assessment (CIA):

CIA is conducted for a total of 30 marks (Table 1), with 20 marks for continuous lab assessment during day to day performance, 10 marks for final internal lab assessment. Table 1: Assessment pattern for CIA

Component	Lab	Total Marks		
Type of Assessment	Day to day performance	Final internal lab assessment	i otai wiarks	
CIA Marks	20	10	30	

Continuous Internal Examination (CIE):

One CIE exams shall be conducted at the end of the 16th week of the semester. The CIE exam is conducted for 10 marks of 3 hours duration.

Preparation	Performance	Calculations and Graph	Results and Error Analysis	Viva	Total
2	2	2	2	2	10

VI. HOW PROGRAM OUTCOMES ARE ASSESSED:

	Program Outcomes (POs)	Strength	Proficiency assessed by
PO1	Engineering knowledge: Apply the knowledge of	3	Videos
	mathematics, science, engineering fundamentals, and		
	an engineering specialization to the solution of		
	complex engineering problems.		
PO2	Design/development of solutions: Design solutions	2	Lab exercises
	for complex engineering problems and design system		
	components or processes that meet the specified needs		
	with appropriate consideration for the public health		
	and safety, and the cultural, societal, and		
	environmental considerations		
PO3	Modern tool usage: Create, select, and apply	3	Lab exercises
	appropriate techniques, resources, and modern		
	engineering and IT tools including prediction and		
	modeling to complex engineering activities with an		
	understanding of the limitations.		

3 = High; **2** = Medium; **1** = Low

VII. HOW PROGRAM SPECIFIC OUTCOMES ARE ASSESSED:

	Program Specific Outcomes (PSOs)	Strength	Proficiency assessed by
PSO1	Professional Skills: The ability to understand, analyze	2	Videos
	and develop computer programs in the areas related to		
	algorithms, system software, multimedia, web design,		
	big data analytics, and networking for efficient analysis		
	and design of computer - based systems of varying		
	complexity.		
PSO2	Software Engineering Practices: The ability to apply	3	Case studies
	standard practices and strategies in software service		
	management using open-ended programming		
	environments with agility to deliver a quality service		
	for business success.		
PSO3	Successful Career and Entrepreneurship:	1	Videos
	The ability to employ modern computer languages,		
	environments, and platforms in creating innovative		
	career paths to be an entrepreneur, and a zest for higher		
	studies.		

3 = High; 2 = Medium; 1 = Low

VIII. COURSE OBJECTIVES :

The cour	se should enable the students to:
Ι	Understand the concept of modeling and mechanism involved in UML.
II	Learn the classes and different types of relationships in classes, objects and terms related to diagrams.
III	Examine fundamental object-oriented analysis and design techniques.
IV	Apply design patterns for viewing a system as a set of procedures.
V	Prepare case studies for analyzing modeling techniques.

IX. COURSE OUTCOMES (COs):

COs	Course Outcome	CLOs	Course Learning Outcome
CO 1	Identify the conceptual classes and develop a	CLO 1	Demonstrate the Conceptual model of UML and SDLC.
	domain model with UML Class diagram.	CLO 2	Define classes modeling techniques and instances modeling techniques.
		CLO 3	Analyze the Objects and Classes are required for the development of software system.
CO 2	Creation and design of system interfaces and	CLO 4	Describe interaction diagrams and their modeling techniques.
	models by using various diagrams.	CLO 5	Creation of interaction diagram that model the dynamic aspects of a software system.
CO 3 Understand the essential characteristics of tools		CLO 6	Use case and activity studies to illustrate the analysis and design concepts.
	used for designing a model by using static and		Demonstrate activity diagram and their modeling techniques.
	dyanmic diagrams.	CLO 8	Demonstrate component and deployment diagram.
		CLO 9	Identify, analyze, and model behavioral concepts of the system and also know the importance of events and signals and their modeling techniques.
CO 4	Identify and discuss the concept of events and signals, process and	CLO 10	Analyze and understand the uses of process and threads and time and space to model and development of a system.
	threads and state chart Diagrams.	CLO 11	Demonstrate state machines and state chart diagrams and their modeling techniques
CO 5	Analyze the requirements to design model by applying component and deployment diagrams.	CLO 12	Illustrate the uses of component and deployment diagram and their modeling techniques.

X. COURSE LEARNING OUTCOMES (CLOs):

CLO Code	CLO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
AIT103.01	CLO 1	Demonstrate the Conceptual model of UML and SDLC.	PO 1	3
AIT103.02	CLO 2	Define classes modeling techniques and instances modeling techniques.	PO 1	3
AIT103.03	CLO 3	Analyze the Objects and Classes are required for the development of software system.	PO 1	3
AIT103.04	CLO 4	Describe interaction diagrams and their modeling techniques.	PO 1	3

CLO Code	CLO's	At the end of the course, the student will have the ability to:	PO's Mapped	Strength of Mapping
AIT103.05	CLO 5	Creation of interaction diagram that model the dynamic aspects of a software system.	PO 3	3
AIT103.06	CLO 6	Use case and activity studies to illustrate the analysis and design concepts.	PO3	3
AIT103.07	CLO 7	Demonstrate activity diagram and their modeling techniques	PO 1	2
AIT103.08	CLO 8	Demonstrate component and deployment diagram	PO 1,PO 3, PO 5	2
AIT103.09	CLO 9	Identify, analyze, and model behavioral concepts of the system and also know the importance of events and signals and their modeling techniques.	PO 1, PO 3	3
AIT103.10	CLO 10	Analyze and understand the uses of process and threads and time and space to model and development of a system.	PO 3	3
AIT103.11	CLO 11	Demonstrate state machines and state chart diagrams and their modeling techniques	PO 1	3
AIT103.12	CLO 12	Illustrate the uses of component and deployment diagram and their modeling techniques.	PO 1	3

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XI. MAPPING COURSE OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

Course	Prog	gram Outcon	nes (POs)	Program Specific Outcomes(PSOs)				
(COs)	PO1	PO3	PO5	PSO1	PSO2	PSO3		
CO 1	3	3	2	3				
CO 2	3		2		3	2		
CO 3	3	3	2		3	2		
CO 4			2					
CO 5		3	2			2		

XII. MAPPING COURSE LEARNING OUTCOMES LEADING TO THE ACHIEVEMENT OF PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

Course Learning	Program Outcomes (POs)							Prog Outc	ram Sj comes (pecific PSOs)					
Outcomes (CLOs)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO 1	3												2		
CLO 2	3													3	
CLO 3	3												2		1
CLO 4	3				3									3	
CLO 5			3		3								2		
CLO 6			3											3	

Course Learning	g Program Outcomes (POs)							Prog Outc	Program Specific Outcomes (PSOs)						
Outcomes (CLOs)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO 7	2				3								2		1
CLO 8	2		3											3	
CLO 9	2		2										2		
CLO 10														3	
CLO 11	3				3								2		
CLO 12	3		-											3	

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XIII. ASSESSMENT METHODOLOGIES – DIRECT

CIE Exams	PO1,PO3,PO5, PSO1, PSO2	SEE Exams	PO1,PO3, PO5 PSO1, PSO2	Lab Exercises		Seminars	
Laboratory Practices	PO1,PO3,PO5 PSO1, PSO2	Student Viva	PO1, PO3, PO5 PSO1, PSO2	Mini Project	-	Certification	-

XIV. ASSESSMENT METHODOLOGIES - INDIRECT

~	Early Semester Feedback	>	End Semester OBE Feedback
×	Assessment of Mini Projects by Experts		

XV. SYLLABUS

Week-1	INTRODUCTION TO UML				
Study Of UM	L				
Week-2	ON LINE PURCHASE SYSTEM				
Create a UML	model for On line Purchase System				
Week-3	LIBRARY MANAGEMENT SYSTEM				
Create a UMI	L model for Library Management System				
Week-4	E-TICKETING				
Create a UML	model for E-Ticketing				
Week-5	QUIZ SYSTEM				
Create a UML	Create a UML model for Quiz System				
Week-6	STUDENT MARK ANALYZING SYSTEM				

Create a UML	model for Student Mark Analyzing System					
Week-7	E-MAIL CLIENT SYSTEM					
Create a UML	model for E-Mail Client System					
Week-8	TELEPHONE PHONE DIALING					
Create a UML	model for Telephone Phone Dialing					
Week-9	POINT OF SALE					
Create a UML	model for Point of sale					
Week-10	WORKING COMPANY					
Create a UML	model for a Working Company					
Week-11	ATM TRANSACTIONS					
Create a system and VB as the	n to design Bank ATM Transactions and generate code by using MS-Access as back end front end.					
Week-12	STUDENT MARK ANALYSIS					
Create a system end and VB as	n to design Student mark analysis system and generate code by using MS-Access as back the front end.					
Reference Bo	oks:					
1. Grady Bo Pearson F	 Grady Booch, James Rumbaugh, Ivar Jacobson, "The Unified Modeling Language User Guide", Pearson Education, 2ndEdition, 2004. 					
2. Craig Larman, "Applying UML and Patterns: An Introduction to Object Oriented Analysis and Design and Iterative Development", Pearson Education, 3 rd Edition, 2005.						
Web Referen	ces:					
1. <u>www.um</u> 2 www.bo	l.org					
2. <u>www.unl-diagrams.org/</u>						
4. https://w	4. <u>https://www.utdallas.edu//UML/RumbaughUML_2.0_Reference_C</u>					

XVI. COURSE PLAN:

The course plan is meant as a guideline. Probably there may be changes.

Week	Topics to be covered	Course Learning Outcomes	Reference
NO		(CLOS)	
1	Introduction To Uml	CLO 1, CLO 2	T1:1.1
2	On Line Purchase System	CLO 1, CLO 2, CLO 3	T1:2.3
3	Library Management System	CLO 5, CLO 6	T1:4.1
4	E-Ticketing	CLO 6, CLO 7	T1:5.1
5	Quiz System	CLO 8, CLO 6,CLO 4	T1:6.1
6	Student Mark Analyzing System	CLO 8, CLO 9	T1:7.1.1
7	E-Mail Client System	CLO 9, CLO 10	T1:12.5
8	Telephone Phone Dialing	CLO 11, CLO 12	T1:15.1
9	Point Of Sale	CLO 11, CLO 12	T1:20.5
10	Working Company	CLO 11, CLO 12	T1:21.5

Week No	Topics to be covered	Course Learning Outcomes (CLOs)	Reference
11	Atm Transactions	CLO 11, CLO 12	T1:21.6
12	Student Mark Analysis	CLO 11, CLO 12	T1:22.5

XVII. GAPS IN THE SYLLABUS-TO MEET INDUSTRY / PROFESSION REQUIREMENTS:

S NO	DESCRIPTION	PROPOSED ACTIONS	RELEVANCE WITH POs	RELEVANCE WITH PSOs
1	Real time Online Transform System	Videos	PO 3	PSO 1
2	Case study of next gen POS system and other applications	Case studies	PO 5	PSO 1

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