



Indra Ganesan

COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION – 1

CURRICULAR ASPECTS

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

INDRA GANESAN COLLEGE OF ENGINEERING





Indra Ganesan

COLLEGE OF ENGINEERING

Madurai Main Road (NH-45B), Manikandam, Tiruchirappalli - 620 012
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
NAAC Accredited, 2(F) Status Institution by UGC



Criteria 1	Curricular Aspects	100
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1.1 Curricular Planning and Implementation (20)

1.1.1 The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of continuous internal Assessment

Table of Content

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1.	Preface of the Course File
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INDRA GANESAN COLLEGE OF ENGINEERING

IG Valley, Manikandam, Tiruchirappalli, Tamil Nadu – 620 012, India
(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PREFACE OF THE COURSE FILE

Batch : 2020-2022

Academic Year : 2020-2021 / ODD


Program : COMPUTER SCIENCE AND ENGINEERING

Year & Semester : 1st Year / 1st Semester / 'A' Section


Course Code : CP5154 NBA Course Code: C204

Name of the Course : Advanced Software Engineering

Faculty in-charge : Mr.K.PANDIYARAJAN/Prof/CSE


Signature of the Faculty in-charge




HoD / CSE

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

INDRA GANESAN COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REVIEW OF COURSE FILE

(to be pasted on the inner side of the file-backside).(#-State Yes/No.)

S.N	Details	Date:	R-I-*	R-II-*&	R-III-*&	R-IV-*&\$	R-V-*&\$@
1.	Preface of the course file		✓				
2.	Vision, Mission, PEOs, POs, PSOs, Blooms taxonomy		✓				
3.	Subject handlers of yesteryears		✓				
4.	Timetable/Workload of the staff – Distribution of teaching load – Roles and Responsibilities		✓				
5.	Syllabus signed by staff & HoD		✓				
6.	Lecture Schedule signed by staff & HoD		✓				
7.	Course Committee meeting circular and minutes		✓				
8.	Identification of Curricular gap and Content Beyond the syllabus		✓				
9.	Self-study topics			✓			
10.	Previous AU Question papers			✓			
11.	Unit wise Q&A and Objective type questions		✓				
12.	Unit wise course material		✓				
13.	Assignment question paper with sample answer sheets and mark entry		✓				
14.	Tutorial question paper with key and mark entry		✓				
15.	Class test/IA test Q Paper with Key, sample answer papers and mark entry			✓			
16.	IA Test- result analysis-CAP-evidence-root cause analysis.			✓			
17.	Retest –Q paper-Attendance-marks			✓			
18.	AU Web portal entry sheet			✓			
19.	Very poor performance in first two tests-action taken.-communication to parents-evidence			✓	✓	✓	
20.	Absence for two tests-action taken-communication to parents-evidence.			✓	✓	✓	
21.	Indiscipline of student reported, if any			✓		✓	
22.	Special class/coaching class/remedial class/attendance-CAP			✓		✓	
23.	Conduct of Seminar, Quizzes - proof				✓	✓	
24.	Content beyond the syllabus - proof				✓	✓	
25.	Student feedback on faculty				✓	✓	
26.	Course end survey			✓	✓	✓	
27.	Internal Assessment sheet			✓	✓	✓	
28.	AU question paper with students feedback			✓	✓	✓	
29.	Discrepancy of the question paper and correspondence, if any			✓	✓	✓	
30.	AU result analysis-Details of arrear students.			✓	✓	✓	
31.	AU grade sheet			✓	✓	✓	
32.	CO – PO & PSO attainment sheet						
	Signature of Course handling faculty		k. Pandey	k. Pandey	k. Pandey	k. Pandey	k. Pandey
	Signature of HoD		D. Ufada	D. Ufada	D. Ufada	D. Ufada	D. Ufada

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Principal

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Department of Computer Science and Engineering
 Academic Year 2020-2021 (Odd Semester)

I - M.E CSE / I - Sem		CC:Mr. C. Jegadeesan / AP / CSE						
DAY	1	2	3	4	5	6	7	
MON	9.15 - 10.10	10.10 - 11.00	B R E A K	11.15 - 12.10	12.10 - 01.00	L U N C H	1.45 - 2.30	
TUE		ASE					2.30 - 3.15	
WED							ASE	
THU								
FRI		ASE						
							B R E A K	
							3.30 - 4.10	

A. V. J.
 HOD/CSE

[Signature]
 PRINCIPAL

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 Dr. G. Balakrishnan, M.E., Ph.D.,
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OBJECTIVES:

- To understand Software Engineering Lifecycle Models
- To do project management and cost estimation
- To gain knowledge of the System Analysis and Design concepts.
- To understand software testing approaches
- To be familiar with DevOps practices

UNIT I INTRODUCTION

9

Software engineering concepts – Development activities – Software lifecycle models - Classical waterfall - Iterative waterfall – Prototyping – Evolutionary - Spiral – Software project management – Project planning – Estimation – Scheduling – Risk management – Software configuration management.

UNIT II SOFTWARE REQUIREMENT SPECIFICATION

9

Requirement analysis and specification – Requirements gathering and analysis – Software Requirement Specification – Formal system specification – Finite State Machines – Petrinets – Object modelling using UML – Use case Model – Class diagrams – Interaction diagrams – Activity diagrams – State chart diagrams – Functional modelling – Data Flow Diagram.

UNIT III ARCHITECTURE AND DESIGN

9

Software design – Design process – Design concepts – Coupling – Cohesion – Functional independence – Design patterns – Model-view-controller – Publish-subscribe – Adapter – Command – Strategy – Observer – Proxy – Facade – Architectural styles – Layered - Client server - Tiered - Pipe and filter.- User interface design

UNIT IV TESTING

9

Testing – Unit testing – Black box testing– White box testing – Integration and System testing– Regression testing – Debugging - Program analysis – Symbolic execution – Model Checking

UNIT V DEVOPS

9

DevOps:Motivation-Cloud as a platform-Operations-Deployment Pipeline:Overall Architecture Building and Testing-Deployment- Case study: Migrating to Microservices.

TOTAL: 45 PERIODS**OUTCOMES:**

At the end of this course, the students will be able to:

- Understand the advantages of various Software Development Lifecycle Models
- Gain knowledge on project management approaches as well as cost and schedule estimation strategies
- Perform formal analysis on specifications
- Use UML diagrams for analysis and design
- Architect and design using architectural styles and design patterns
- Understand software testing approaches
- Understand the advantages of DevOps practices

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Lecture Schedule

Degree/Program: **M.E / CSE** Course code & Name: **CP5154–ADVANCED SOFTWARE ENGINEERING**
Duration: **ODD** Semester: **I** Section: **B** Faculty: **Dr.K.PANDIYARAJAN**

AIM:

To protect the confidentiality of information by preventing unauthorized access or disclosure of sensitive data

OBJECTIVES:

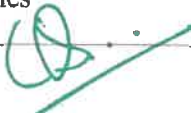
1. To understand Software Engineering Lifecycle Models
2. To do project management and cost estimation
3. To gain knowledge of the System Analysis and Design concepts.
4. To understand software testing approaches
5. To be familiar with DevOps practices.

PREREQUISITES: Programming, knowledge of scripting and object-oriented language..

COURSE OUTCOMES:

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C204.1	Understand the advantages of various Software Development Lifecycle Models	1,2,3,4	1,2
C204.2	Gain knowledge on project management approaches as well as cost and schedule estimation strategies	1,2,3,4	1,2
C204.3	Perform formal analysis on specifications	1,2,3,4	1,2
C204.4	Use UML diagrams for analysis and design	1,2,3,4	1,2
C204.5	Architect and design using architectural styles and design patterns	1,2,3,4	1,2
C204.6	Understand software testing approaches	1,2,3,4	1,2


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S.No	Date	Period	Topics to be Covered	Book & Page No.
UNIT -I - INTRODUCTION				Target periods :12
1	1.9.20	2	Software engineering concepts	T1
2	3.9.20	4	Development activities	T1
3	4.9.20	1	Software lifecycle models	T1
4	7.9.20	5	Classical waterfall, Iterative waterfall	T1
5	8.9.20	2	Prototyping, Evolutionary	T1
6	10.9.20	4	Spiral, Software project management	T1
7	11.9.20	1	Project planning, Estimation	T1
8	14.9.20	2	Scheduling, Risk management	T1
9	15.9.20	4	Software configuration management	T1
UNIT II - SOFTWARE REQUIREMENT SPECIFICATION				Target periods :12
10	17.9.20	1	Requirement analysis and specification	T2
11	18.9.20	5	Requirements gathering and analysis	T2
12	21.9.20	2	Requirements gathering and analysis	T2
13	22.9.20	4	Software Requirement Specification	T2
14	24.9.20	1	Formal system specification	T3
15	25.9.20	2	Finite State Machines, Petrinets	T3
16	28.9.20	4	Object modelling using UML	T3
17	29.9.20	1	Use case Model, Class diagrams	T3
18	1.10.20	5	Interaction diagrams, Activity diagrams	
19	2.10.20	2	State chart diagrams, Functional modeling, Data Flow Diagram	
UNIT III - ARCHITECTURE AND DESIGN				Target Periods :12
20	5.10.20	4	Software design, Design process	T1
21	6.10.20	1	Design concepts, Coupling	T1
22	8.10.20	5	Cohesion, Functional independence	T1
23	9.10.20	2	Design patterns, Model-view-controller	T2
24	12.10.20	4	Publish-subscribe, Adapter, Command	T2
25	13.10.20	1	Strategy, Observer, Proxy, Facade	T2
26	15.10.20	5	Architectural styles, Layered	T2
27	16.10.20	2	Client, server, Tiered, Pipe and filter	T2
28	19.10.20	4	User interface design	T2
UNIT IV - TESTING				Target Periods :12
29	20.10.20	1	Testing, Unit testing, Black box testing	T3
30	22.10.20	5	White box testing, Integration and System testing	T3
31	23.10.20	2	Regression testing, Debugging	T3
32	26.10.20	4	Program analysis	T3
33	27.10.20	1	Symbolic execution, Model Checking	T3
UNIT V - DEVOPS				Target Periods:12
34	29.10.20	2	DevOps: Motivation	T3
35	30.10.20	4	Cloud as a platform- Operations	T3
36	6.11.20	1	Deployment Pipeline: Overall Architecture	T3
37	9.11.20	5	Building and Testing-Deployment	T3
38	10.11.20	2	Case study: Migrating to Microservices	T3

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Book Reference - Text Books

Sl.	Title of the Book	Author	Publisher	Year
1.	Object-Oriented Software Engineering,	Bernd Bruegge, Alan H Dutoit	Second Edition, Pearson Education.	2004
2.	Fundamentals of Software Engineering	Carlo Ghezzi, Mehdi Jazayeri, Dino Mandrioli.	Second Edition, PHI Learning Pvt. Ltd	2010
3	Applying UML and Patterns	Craig Larman	3rd ed, Pearson Education	2005

Sl	Title of the Book	Author	Publisher	Year
1	DevOps: A Software Architect's Perspective	Len Bass, Ingo Weber and Liming Zhu	Pearson Education	2016
2	Fundamentals of Software Engineering	Rajib Mall	3rd edition, PHI Learning Pvt. Ltd	2009
3	Software Engineering	Stephen Schach	7th ed, McGraw-Hill	2007

Website References

<http://nptel.iitm.ac.in/courses.php?branch=Computer>
www.freebooksbot.com



Signature of the Faculty in-charge



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HoD / CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Identification of Curricular Gap & Content Beyond Syllabus(CBS)

Name of the Faculty :Dr.K.PANDIYARAJAN

Course Code & Name: CP5154&ADVANCED
SOFTWARE ENGINEERING

Degree & Program:M.E. /CSE Semester & Section: I / A Academic Year: 2020 -2021 /ODD

I.Mapping of Course Outcomes with POs & PSOs.(before CBS)

Table.1 Mapping of COs, C, PSOs with POs - before CBS.

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C204.1	2	2	1	1	3	3	1	3	-	1	-	3	-	2
C204.2	2	2	1	1	*3	3	2	3	-	1	-	3	-	3
C204.3	2	2	1	1	-	3	1	3	-	1	-	3	-	3
C204.4	2	2	1	1	3	3	1	3	-	1	-	3	-	2
C204.5	2	2	1	1	-	3	1	3	-	1	-	3	-	3
C204.6	2	2	1	1	1	3	1	3	-	1	-	3	-	3
C204.1	2	2	1	1	-	3	1	3	-	1	-	3	-	3

II. Identification of content beyond syllabus.


Table.2 Identification of content beyond syllabus

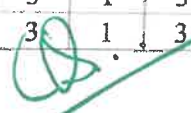
Details of Content Beyond Syllabus(CBS) added	POs strengthened/ vacant filled	CO/Unit
ADVANCED SOFTWARE ENGINEERING	PO5(2) Vacant filled	C204.4 & C204.5/ IV & V

III. Mapping of Course Outcomes with POs & PSOs. (After CBS)

Table.3 Mapping of COs, C, PSOs with POs- after CBS.

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C204.1	2	2	1	1	3	3	1	3	-	1	-	3	-	2
C204.2	2	2	1	1	-	3	2	3	-	1	-	3	-	3
C204.3	2	2	1	1	-	3	1	3	-	1	-	3	-	3
C204.4	2	2	1	1	3	3	1	3	-	1	-	3	-	2
C204.5	2	2	1	1	-	3	1	3	-	1	-	3	-	3
C204.6	2	2	1	1	1	3	1	3	-	1	-	3	-	3
C204.1	2	2	1	1	-	3	1	3	-	1	-	3	-	3


Signature of the Faculty


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HoD/CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

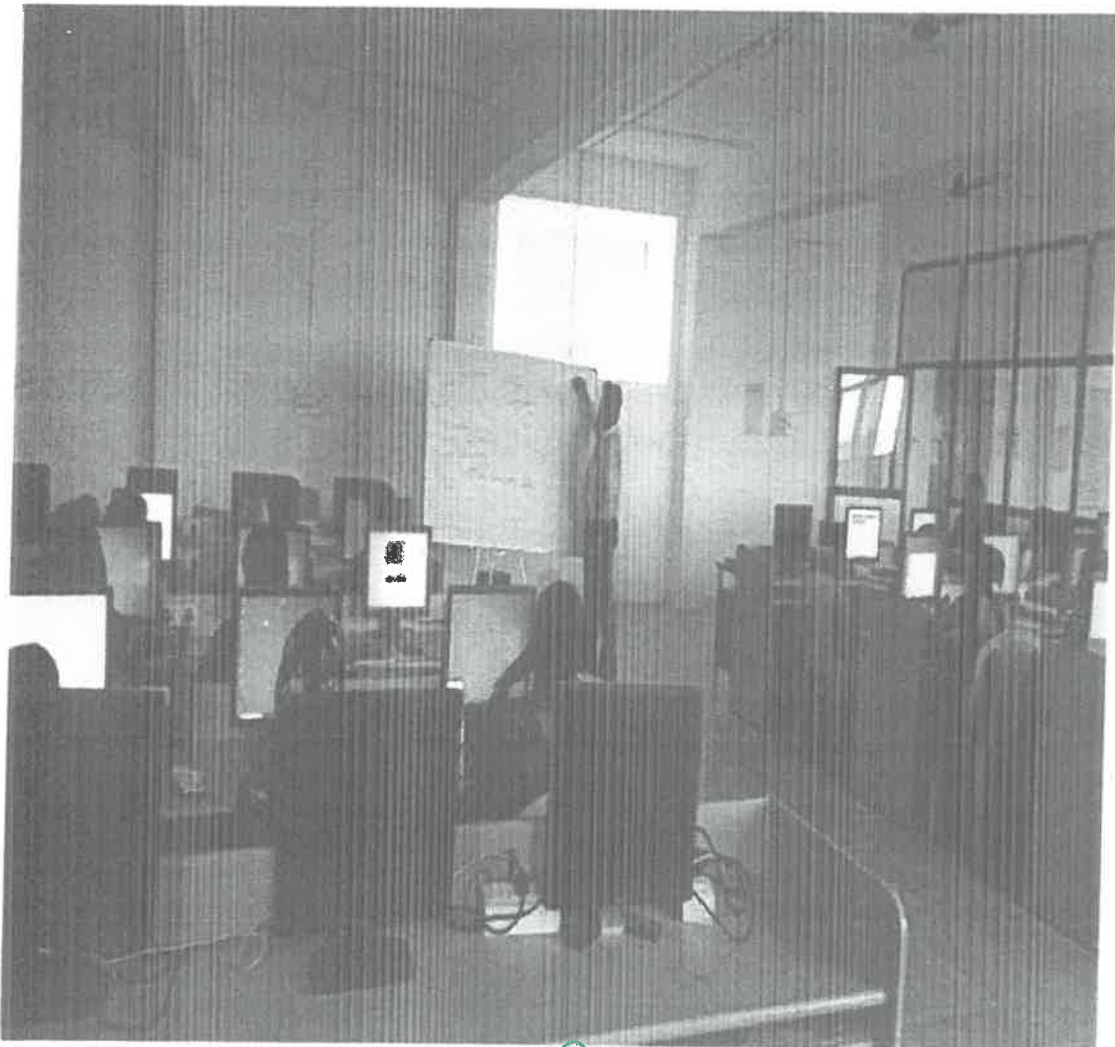
ACADEMIC YEAR: 2020-2021(ODD)

SEM: 01

REGULATION: 2017

PROGRAM: CSE

Name of the Faculty: K.PANDIYARAJAN



K. Pandiyarajan

Signature of Faculty Member

[Handwritten Signature]

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal

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[Handwritten Signature]

HOD/CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Assignment Question Paper

Assignment – 01			Date of Issue:	21/09/2020	Marks	10
Course code	CP5154	Course Title	Advanced Software Engineering			
Year	I	Semester/Section	I / A	Date of Submission:		

Q.No	Questions	CO
1	How do you measure software reliability?	C203.1
2	Mention the Requirement Categories of Software Engineering	C203.1

K. Pandiyar

Name and Signature of the Faculty Incharge



HoD/CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Assignment Answer Sheet

Name of the Student: Ishwarya R

AU Register Number: 81122045002

Assignment – 01		Date of Issue:	21/09/20	Marks	10
Course code	CP5154	Course Title	Advanced Software engineering		
Year	1	Semester/Section	I / A	Date of Submission:	27/09/20

Q.No	Questions	CO
1	How do you measure software reliability	C203.1
2	Mention the requirement categories of software	C203.2

Mark Allocation

Rubrics	Marks Allocated	Marks obtained
Content Quality	6	5
Presentation Quality	2	2
Timely submission	2	2
Total marks	10	9

K. Parthiban

Name and Signature of the Faculty Incharge





HoD/CSE

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IQAC Academic Audit Form

ACADEMIC YEAR: 2020-2021 ODD SEMESTER

Name of Department : CSE Year / Sem / Sec : I/I No. of Students Registered : 5

Details of Examination : IA Test -1

S.No.	Course Code	List of Reg.No Verified	Course Log Book Verified (Y/N)	Course File Verified (Y/N)	No of students Attended	No of Absentees	No of Failures	Pass %	Remarks
1	MA5160	811220405001	Yes	Yes	5	+	+	94%	-
2	CP5191	811220405002	Yes	Yes	5	+	+	96%	-
3	CP5151	811220405003	Yes	Yes	5	-	-	94%	-
4	CP5154	811220405004	Yes	Yes	5	-	-	100%	-
5	CP5152	811220405005	Yes	Yes	5	-	-	92%	-

Verified by

External Member Name and Signature:

A. Vivek Ignatius

Internal Member Name and Signature:

P. Suresh Pandi

Overall Remarks:

HoD/ CSE

IQAC Coordinator

Principal

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

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Register Number:



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Internal Assessment Exam - I			Date/Session	Marks	50
Course code	CP5154	Course Title	ADVANCED SOFTWARE ENGINEERING		
Regulation	2017	Duration	90 minutes	Academic Year	2020-2021
Year	I	Semester	I	Department	CSE

COURSE OUTCOMES

CO1:	Understand the advantages of various Software Development Lifecycle Models
CO2:	Gain knowledge on project management approaches as well as cost and schedule estimation strategies
CO3:	Perform formal analysis on specifications
CO4:	Use UML diagrams for analysis and design
CO5:	Architect and design using architectural styles and design patterns
CO6:	Understand software testing approaches

Q.No.	Question	CO	BTS
PART A			
(Answer all the Questions 10 x 2 = 20 Marks)			
1	What is software engineering?	C1	K1
2	What are the characteristics of the software?	C2	K2
3	What are the various categories of software?	C1	K1
4	What are the challenges in software?	C1	K1
5	What are the fundamental activities of a software process?	C2	K2
6	What are the merits of incremental model?	C1	K1
7	List the task regions in the Spiral model.	C2	K2
8	What are the drawbacks of spiral model?	C2	K2
9	What is System Engineering?	C2	K2
10	List the process maturity levels in SEIs CMM	C2	K2
PART B			
(Answer all the Questions 2 x 10 = 20 Marks)			
11a	What are the steps followed in testing?	C1	K1
OR			
11b	Discuss the various life cycle models in software development	C1	K1
12a	Explain the following: (i) waterfall model (ii) Spiral model (iii) RAD model (iv) Prototyping model	C2	K2
OR			
12b	What is the impact of reusability in software development process ii) Explain the component based software development model with a neat sketch	C2	K2
PART C			
(Answer all the Questions 1 x 10 = 10 Marks)			
13a	Write a note on the unique characters of software	C1	K1
OR			
13b	Write a note on requirement engineering process and feasibility studies	C1	K1

K. Pandian
Course Faculty
(Name /Sign / Date)

[Signature]
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[Signature]
HoD
(Name /Sign / Date)

CP5154 Advanced Software Engineering

Answer Key

I.M.E (CSE)

Internal Assessment-1

- 1 **What is software engineering?**
Software engineering is a discipline in which theories, methods and tools are applied to develop professional software
- 2 **What are the characteristics of the software?**
 - Software is engineered, not manufactured.
 - Software does not wear out.
 - Most software is custom built rather than being assembled from components
- 3 **What are the various categories of software?**
 - System software
 - Application software
 - Engineering/Scientific software
 - Embedded software
- 4 **What are the challenges in software?**
 - Copying with legacy systems.
 - Heterogeneity challenge
 - Delivery times challenge
- 5 **What are the fundamental activities of a software process?**
 - Specification
 - Design and implementation
 - Validation
- 6 **What are the merits of incremental model?**
 - i) The incremental model can be adopted when there is less number of people involved in the project.
 - ii) Technical risks can be managed with each increment.
 - iii) For a very small time span, at least core product can be delivered to the customer.
- 7 **List the task regions in the Spiral model.**
 - Customer communication - it is suggested to establish customer communication.
 - Planning – All planning activities are carried out
 - Risk analysis – The tasks required to calculate technical and management risks.
 - Engineering – tasks required to build one or more representations of applications
 - Construct and release – tasks required to construct, test, install the applications
 - * Customer evaluation - tasks are performed and implemented at installationstage based on the customer evaluation
- 8 **What are the drawbacks of spiral model?**
 - It is based on customer communication. If the communication is not proper then the softwareproduct that gets developed will not be the up to the mark.
 - ii) It demands considerable risk assessment. If the risk assessment is not properly then only the successful product can be obtained.

9 **What is System Engineering?**

System Engineering means designing, implementing, deploying and operating systems which include hardware, software and people

10 **List the process maturity levels in SEIs CMM**

- Level 1: Initial - Few processes are defined and individual efforts are taken.
- Level 2: Repeatable – To track cost schedule and functionality basic project management processes are established.
- Level 3: Defined – The process is standardized, documented and followed
- Level 4: Managed – Both the software process and product are quantitatively understood and controlled using detailed measures.
- Level 5: Optimizing – Establish mechanisms to plan and implement change

11a **What are the steps followed in testing?**

- 1) Unit testing - The individual components are tested in this type of testing.
- 2) Module testing – Related collection of independent components are tested.
- 3) Sub-system testing – Various modules are integrated into a subsystem and the whole subsystem is tested.
- 4) System testing – The whole system is tested in this system.
- 5) Acceptance testing – This type of testing involves testing of the system with customer data.

OR

11b **Discuss the various life cycle models in software development**

- Software development life cycle (SDLC) is a structured process that is used to design, develop, and test good-quality software. SDLC, or software development life cycle, is a methodology that defines the entire procedure of software development step-by-step.



- Stages of the Software Development Life Cycle
- Need for SDLC

12a **Explain the following: (i) waterfall model (ii) Spiral model (iii) RAD model (iv) Prototyping model**

Waterfall model

The waterfall model is a software development model used in the context of large, complex projects, typically in the field of information technology. It is characterized by a structured, sequential approach to project management and software development.

Spiral model

The Spiral Model is a **Software Development Life Cycle (SDLC)** model that provides a systematic and iterative approach to software development. In its diagrammatic representation, looks like a spiral with many loops. The exact number of loops of the

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spiral is unknown and can vary from project to project. Each loop of the spiral is called a **Phase of the software development process**

RAD model

The Rapid Application Development Model was first proposed by IBM in the 1980s. The RAD model is a type of incremental process model in which there is an extremely short development cycle. When the requirements are fully understood and the component-based construction approach is adopted then the RAD model is used. Various phases in RAD are Requirements Gathering, Analysis and Planning, Design, Build or Construction, and finally Deployment.

Prototyping model

Prototyping is defined as the process of developing a working replication of a product or system that has to be engineered. It offers a small-scale facsimile of the end product and is used for obtaining customer feedback

12b

i) What is the impact of reusability in software development process

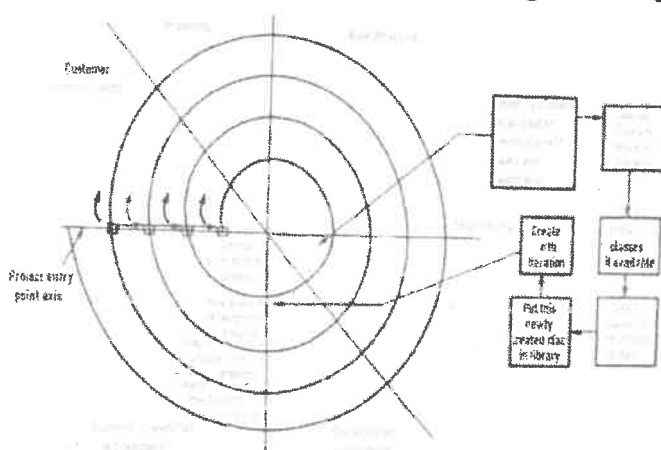
ii) Explain the component based software development model with a neat sketch

- Code reusability increases productivity reduces costs, and improves overall quality.
 - Reusability in software development is a highly popular and productive practice.
 - Features that Code with a Potential for Reuse should have:
 - Versatility which allows for the code to be easily adapted for another application
- There are two major types of code reuse:

Internal reuse – This is when code written internally by a developer team or business is reused for other projects.

External reuse – This is when some third-party tool or code is licensed and employed in a project. This can be tricky since costs will be involved, and time will be required to learn and implement the tool. Additionally, it creates a dependency upon an external tool which may lead to issues further down the line.

(ii) Component-Based Software Engineering



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- CBSE is a process that focuses on the design and development of computer-based systems with the use of reusable software components.
- It not only identifies candidate components but also qualifies each component's interface, adapts components to remove architectural mismatches, assembles components into a selected architectural style, and

updates components as requirements for the system change.

- The process model for component-based software engineering occurs concurrently with *component-based development*

13a **Write a note on the unique characters of software**

Functionality, usability, efficiency, flexibility, reliability, maintainability, portability, and integrity are key characteristics that software engineers should consider throughout the development lifecycle.

13b **Write a note on requirement engineering process and feasibility studies**

Steps in Requirements Engineering Process


- Requirements Elicitation
- Requirements Analysis
- Requirements Specification
- Requirements Validation


Tools Involved in Requirement Engineering

- observation report
- Questionnaire (survey , poll)
- Use cases
- User stories
- Requirement workshop
- Mind mapping
- Role playing
- Prototyping


Course Faculty

(Name /Sign / Date)


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(Approved by AICTE, New Delhi and affiliated to Anna University, Chennai)

Internal Assessment Test Answer Book

Name	M Ramalakshmi			Year/ Semester/Section	I/I	
Batch No.	811220405005	Date/Session	19.9.20	Department	CSC	
Course code	CPS154	Course Title	Advanced Software engineering			
Internal Assessment Test	IAT 1	<input checked="" type="checkbox"/>	IAT 2	<input type="checkbox"/>	IAT 3	<input type="checkbox"/>
Name and Signature of the Invigilator with date						

Instruction to the Student: Put tick mark to the question attended in the column against question.							
Part A			Part B / Part C				Total Marks
Q. No.	✓	Marks	Q. NO.	✓	a	b	
					Marks		
1	✓	2	11	✓	10		10
2	✓	2	12	✓	10		12
3	✓	2	13	✓	10		10
4	✓	2	14	✓	6		6
5	✓	2	15	✓	4		4
6	✓	2	16	✓	10		10
7	✓	2				Total	52
8	✓	2	72			 Name and Signature of the Examiner with date	
9	✓	2					
10	✓	2					
Total		20	Grand Total				

To be filled by the examiner							
Course Outcomes	1	2	3	4	5	6	Total
Marks allotted	20	20	-	-	-	-	100
Marks Obtained	20	52	-	-	-	-	72
IQAC Audit - Remarks							
						 Name and Signature of the IQAC member	

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ACADEMIC YEAR 2020 – 2021 (ODD SEMESTER)

STUDENTS MARK STATEMENT- CO BASED
INTERNAL ASSESSMENT TEST-1

SUBJECT CODE & TITLE: CP5154- ADVANCED SOFTWARE ENGINEERING

YEAR/SEM: I/I

MONTH & YEAR: Sep 11

S.NO	REG NO	STUDENT NAME	COX (32)	COX (18)	TOTAL (50)	TOTAL (100)
1.	811220405001	Deepa Lakshmi N	30	15	45	90
2.	811220405002	Iswarya R	25	10	35	70
3.	811220405003	Karthiga M	20	9	29	58
4.	811220405004	Karthika M	24	12	36	72
5.	811220405005	Ramalakshmi M	25	11	36	72

MARKS RANGE:

<20	20-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
				1	1	1	1	

Total No.of Candidates Present	5
Total No.of Candidates Absent	0
Total No.of Students Pass	5
Total No. of Students Fail	0
Percentage of Pass	100%

K. Pandian
STAFF INCHARGE

A. V. S. S.
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[Signature]
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