



## S.R.K INSTITUTE OF TECHNOLOGY

Enikepadu, Krishna District, Andhra Pradesh – 512108.

Approved by AICTE, Affiliated to JNTUK, Kakinada

(ISO 9001:2015 Certified Institution)

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

### TENTATIVE LESSON PLAN: R1622051

<b>Course Title: Software Engineering</b>		
<b>Section: SEC A</b>	<b>Date: 17/11/19</b>	<b>Page No: 01 of 03</b>
<b>Revision No:</b>	<b>Prepared By: Ch.Ambedkar</b>	<b>Approved By: HOD</b>

**Tools: Black Board, PowerPoint Presentations**

No. of Periods	Topic	Date	Mode of Delivery
<b>Unit-1 : Software and Software Engineering , Process Models</b> <b>CO 1 : To understand the software life cycle models.</b> <b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b>			
1	Introduction to Software Engineering: Software,	18-11-2019	BB/PPT
2	Software Crisis, Software engineering definition.	19-11-2019	BB/PPT
3	Evolution of software engineering Methodologies.	20-11-2019	BB/PPT
4	Software Engineering Challenges.	21-11-2019	BB/PPT
5	Software Process	22-11-2019	BB/PPT
6	Process Classification	23-11-2019	BB/PPT
7	A Generic Process Model	25-11-2019	BB/PPT
8	Process Assessment and Improvement,.	27-11-2019	BB/PPT
9	Prescriptive Process Models	28-11-2019	BB/PPT
10	Specialized Process Models,	29-11-2019	BB/PPT
11	The Unified Process,	02-12-2019	BB/PPT
12	Personal and Team Process Models, Process Terminology,	03-12-2019	BB/PPT
13	Tutorial	04-12-2019	
<b>UNIT-II : Requirements Analysis And Specification, Software Design</b> <b>CO 2 : To understand the software requirements and SRS document and importance of modeling and modeling languages.</b> <b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b>			
1	Software Requirements	05-12-2019	BB/PPT
2	Requirements Engineering Process	06-12-2019	BB/PPT
3	Requirements Gathering and Analysis	07-12-2019	BB/PPT
4	Structure Analysis	09-12-2019	BB/PPT
5	Data-oriented Analysis	10-12-2019	BB/PPT
6	Object Oriented Analysis	11-12-2019	BB/PPT
7	Prototyping Analysis	12-12-2019	BB/PPT
8	Requirements Specification	13-12-2019	BB/PPT
9	Requirements Validation	16-12-2019	BB/PPT

10	Software Requirements Specifications	17-12-2019	BB/PPT
11	Tutorial	18-12-2019	
<b>UNIT-III : Function-Oriented Software Design, User Interface Design</b>			
<b>CO 3 : To understand the importance of modeling and modeling languages, design and develop correct and robust software products.</b>			
<b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b>			
1	Software Design: Process	19-12-2019	BB/PPT
2	Characteristics of good Design	20-12-2019	BB/PPT
3	Design Principles	23-12-2019	BB/PPT
4	Modular Design	24-12-2019	BB/PPT
5	Design Methodologies	26-12-2019	BB/PPT
6	Structure Design	27-12-2019	BB/PPT
7	Structured Design Methodology	30-12-2019	BB/PPT
8	Developing the DFD Model of a System	31-12-2019	BB/PPT
9	Detailed Design,	03-1-2020	BB/PPT
10	Transform Vs Transition Analysis	06-1-2020	BB/PPT
11	Object oriented Analysis and Design Principles	07-1-2020	BB/PPT
12	Characteristics of Good User Interface,	08-1-2020	BB/PPT
13	Types of User Interfaces,	27-1-2020	BB/PPT
14	Fundamentals of Component-based GUI Development,	28-1-2020	BB/PPT
15	A User Interface Design Methodology.	29-1-2020	BB/PPT
16	<b>Tutorial</b>	30-1-2020	
<b>UNIT-IV : Coding And Testing</b>			
<b>CO 4 : To understand the quality control and how to ensure good quality software through Testing</b>			
<b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b>			
1	Implementation: Coding Principles	31-1-2020	BB/PPT
2	Coding Process, Code Verification, Code Documentation	1-2-2020	BB/PPT
3	Software Testing: Testing Fundamentals, Test Planning	3-2-2020	BB/PPT
4	Black Box Testing	4-2-2020	BB/PPT
5	White box testing	5-2-2020	BB/PPT
6	Levels of Testing	6-2-2020	BB/PPT
7	Usability testing, Regression Testing	7-2-2020	BB/PPT
8	Debugging approaches	10-2-2020	BB/PPT
9	Integration Testing,	11-2-2020	BB/PPT
10	Testing Object-Oriented Programs	12-2-2020	BB/PPT
11	System Testing,	13-2-2020	BB/PPT
12	Some General Issues Associated with Testing	14-2-2020	BB/PPT
13	<b>Tutorial</b>	17-2-2020	

**UNIT-V : Software Reliability And Quality Management, Computer Aided Software Engineering**

**CO 4** : To understand the planning and estimation of software projects and understand the reliability issues, quality ,validation and verification procedures

**Text Book** : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "


1	Software Reliability	18-2-2020	BB/PPT
2	Software Quality Management System	19-2-2020	BB/PPT
3	Software Configuration Management.	24-2-2020	BB/PPT
4	Project Planning and Estimation: Project Planning activities	25-2-2020	BB/PPT
5	Software Quality: Software Quality Factors	26-2-2020	BB/PPT
6	Verification & Validation	28-2-2020	BB/PPT
7	Software Quality Assurance	29-2-2020	BB/PPT
8	The Capability Maturity Model	30-2-2020	BB/PPT
9	CASE and its Scope,	30-2-2020	BB/PPT
10	Case Environment, Case Support in Software Life Cycle,	2-3-2020	BB/PPT
11	Characteristics of Case Tools,	3-3-2020	BB/PPT
12	<b>Tutorial</b>	4-3-2020	


**UNIT-V : Software Maintenance, Software Reuse**

**CO 4** : To understand the maintenance of software and Reuse

**Text Book** : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "

1	Software Maintenance: Software maintenance	5-3-2020	BB/PPT
2	Maintenance Process Models	6-3-2020	BB/PPT
3	Maintenance Cost	9-3-2020	BB/PPT
4	Software Reengineering	11-3-2020	BB/PPT
5	Reengineering activities	12-3-2020	BB/PPT
6	Software Configuration Management.	13-3-2020	BB/PPT
7	Software Reuse	16-3-2020	BB/PPT
8	Basic Issues in Reuse Approach	17-3-2020	BB/PPT
9	Reuse at Organization Level	18-3-2020	BB/PPT
10	Tutorial	19-3-2020	

  
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Signature of HOD



## TENTATIVE LESSON PLAN: R1622051

### SOFTWARE ENGINEERING

<b>Course Title: Software Engineering</b>		
<b>Section: SEC B</b>	<b>Date: 17/11/19</b>	<b>Page No: 01 of 03</b>
<b>Revision No:</b>	<b>Prepared By: SRILAKSHMI. K</b>	<b>Approved By: HOD</b>

**Tools: Black Board, PowerPoint Presentations**

No. of Periods	Topic	Date	Mode of Delivery
<b>Unit-1 : Software and Software Engineering , Process Models</b> <b>CO 1 : To understand the software life cycle models.</b> <b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b>			
1	Introduction to Software Engineering: Software,	18-11-2019	BB/PPT
2	Software Crisis, Software engineering definition.	19-11-2019	BB/PPT
3	Evolution of software engineering Methodologies.	20-11-2019	BB/PPT
4	Software Engineering Challenges.	21-11-2019	BB/PPT
5	Software Process	22-11-2019	BB/PPT
6	Process Classification	23-11-2019	BB/PPT
7	A Generic Process Model	25-11-2019	BB/PPT
8	Process Assessment and Improvement,.	25-11-2019	BB/PPT
9	Prescriptive Process Models	26-11-2019	BB/PPT
10	Specialized Process Models,	27-11-2019	BB/PPT
11	The Unified Process,	27-11-2019	BB/PPT
12	Personal and Team Process Models, Process Terminology,	28-11-2019	BB/PPT
13	Tutorial	28-12-2019	
<b>UNIT-II : Requirements Analysis And Specification, Software Design</b> <b>CO 2 : To understand the software requirements and SRS document and importance of modeling and modeling languages.</b> <b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b>			
1	Software Requirements	28-11-2019	BB/PPT
2	Requirements Engineering Process	06-12-2019	BB/PPT
3	Requirements Gathering and Analysis	07-12-2019	BB/PPT
4	Structure Analysis	09-12-2019	BB/PPT



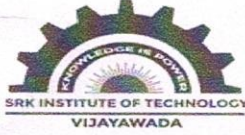
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5	Data-oriented Analysis	10-12-2019	BB/PPT
6	Object Oriented Analysis	11-12-2019	BB/PPT
7	Prototyping Analysis	12-12-2019	BB/PPT
8	Requirements Specification	13-12-2019	BB/PPT
9	Requirements Validation	17-12-2019	BB/PPT
10	Software Requirements Specifications	17-12-2019	BB/PPT
11	Tutorial	18-12-2019	
<b>UNIT-III : Function-Oriented Software Design, User Interface Design</b> <b>CO 3 : To understand the importance of modeling and modeling languages, design and develop correct and robust software products.</b> <b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b>			
1	Software Design: Process	19-12-2019	BB/PPT
2	Characteristics of good Design	20-12-2019	BB/PPT
3	Design Principles	23-12-2019	BB/PPT
4	Modular Design	24-12-2019	BB/PPT
5	Design Methodologies	26-12-2019	BB/PPT
6	Structure Design	27-12-2019	BB/PPT
7	Structured Design Methodology	30-12-2019	BB/PPT
8	Developing the DFD Model of a System	31-12-2019	BB/PPT
9	Detailed Design,	03-1-2020	BB/PPT
10	Transform Vs Transition Analysis	06-1-2020	BB/PPT
11	Object oriented Analysis and Design Principles	07-1-2020	BB/PPT
12	Characteristics of Good User Interface,	08-1-2020	BB/PPT
13	Types of User Interfaces,	27-1-2020	BB/PPT
14	Fundamentals of Component-based GUI Development,	28-1-2020	BB/PPT
15	A User Interface Design Methodology.	29-1-2020	BB/PPT
16	<b>Tutorial</b>	30-1-2020	
<b>UNIT-IV : Coding And Testing</b> <b>CO 4 : To understand the quality control and how to ensure good quality software through Testing</b> <b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b>			
1	Implementation: Coding Principles	31-1-2020	BB/PPT
2	Coding Process, Code Verification, Code Documentation	1-2-2020	BB/PPT
3	Software Testing: Testing Fundamentals, Test Planning	3-2-2020	BB/PPT
4	Black Box Testing	4-2-2020	BB/PPT



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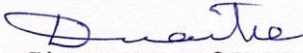
5	White box testing	5-2-2020	BB/PPT
6	Levels of Testing	6-2-2020	BB/PPT
7	Usability testing, Regression Testing	7-2-2020	BB/PPT
8	Debugging approaches	10-2-2020	BB/PPT
9	Integration Testing,	11-2-2020	BB/PPT
10	Testing Object-Oriented Programs	12-2-2020	BB/PPT
11	System Testing,	12-2-2020	BB/PPT
12	Some General Issues Associated with Testing	13-2-2020	BB/PPT
13	<b>Tutorial</b>	13-2-2020	
<p><b>UNIT-V : Software Reliability And Quality Management, Computer Aided Software Engineering</b></p> <p><b>CO 5 : To understand the planning and estimation of software projects and understand the reliability issues, quality ,validation and verification procedures</b></p> <p><b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b></p>			
1	Software Reliability	14-2-2020	BB/PPT
2	Software Quality Management System	19-2-2020	BB/PPT
3	Software Configuration Management.	24-2-2020	BB/PPT
4	Project Planning and Estimation: Project Planning activities	25-2-2020	BB/PPT
5	Software Quality: Software Quality Factors	26-2-2020	BB/PPT
6	Verification & Validation	28-2-2020	BB/PPT
7	Software Quality Assurance	29-2-2020	BB/PPT
8	The Capability Maturity Model	30-2-2020	BB/PPT
9	CASE and its Scope,	30-2-2020	BB/PPT
10	Case Environment, Case Support in Software Life Cycle,	2-3-2020	BB/PPT
11	Characteristics of Case Tools,	3-3-2020	BB/PPT
12	<b>Tutorial</b>	3-3-2020	
<p><b>UNIT-VI : Software Maintenance, Software Reuse</b></p> <p><b>CO 6 : To understand the maintenance of software and Reuse</b></p> <p><b>Text Book : "Software Engineering - Concepts and Practices: Ugrasen Suman, Cengage Learning "</b></p>			
1	Software Maintenance: Software maintenance	4-3-2020	BB/PPT
2	Maintenance Process Models	6-3-2020	BB/PPT
3	Maintenance Cost	9-3-2020	BB/PPT



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4	Software Reengineering	11-3-2020	BB/PPT
5	Reengineering activities	12-3-2020	BB/PPT
6	Software Configuration Management.	13-3-2020	BB/PPT
7	Software Reuse	16-3-2020	BB/PPT
8	Basic Issues in Reuse Approach	17-3-2020	BB/PPT
9	Reuse at Organization Level	18-3-2020	BB/PPT
10	Tutorial	18-3-2020	

  
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**Signature of HOD**

  
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**TENTATIVE LESSON PLAN: R1622052**

<b>Course Title : Java Programming</b>		
<b>Section : Sec A</b>	<b>Date : 15-11-2019</b>	
<b>Revision No : 00</b>	<b>Prepared By : D.V.V Brahmachari</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT –I Introduction</b>			
<b>CO1: Understanding the OOP's concepts, classes and objects, threads, files, applets, swings and act.</b>			
<b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
1.	Introduction to OOP	18/11/19	Lecture interspersed with discussions
2.	procedural programming language and object oriented language	18/11/19	
3.	Principles of OOP	19/11/19	
4.	applications of OOP	21/11/19	
5.	history of java, java features	22/11/19	
6.	JVM, program structure.	23/11/19	
7.	Variables, primitive data types	25/11/19	
8.	Tutorial class	26/11/19	
9.	identifiers, literals, operators	28/11/19	
10.	expressions, precedence rules and associativity,	29/11/19	
11.	primitive type conversion and casting	30/11/19	
12.	flow of control.	30/11/19	
13.	<b>Tutorial</b>	6/12/19	
<b>UNIT 2:Class and Object</b>			
<b>CO1: Understanding the OOP's concepts, classes and objects, threads, files, applets, swings and act.</b>			
<b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
14.	Classes and objects	6/12/19	Lecture interspersed with discussions
15.	class declaration, creating objects	7/12/19	
16.	methods, constructors and constructor overloading	7/12/19	
17.	garbage collector	9/12/19	
18.	importance of static keyword and examples	10/12/19	
19.	this keyword, arrays	11/12/19	
20.	command line arguments	12/12/19	
21.	nested classes.	13/12/19	





22.	Tutorial class	16/12/19	
23.	Classes and objects	6/12/19	
<b>UNIT –III INHERITANCE</b> <b>CO1: Understanding the OOP's concepts, classes and objects, threads, files, applets, swings and act.</b> <b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
24.	Inheritance, types of inheritance, Exception handling,	17/12/19	Lecture interspersed with discussions
25.	importance of try, catch, throw, exceptions,	19/12/19	
26.	super keyword, final keyword,	19/12/19	
27.	overriding and abstract class.	20/12/19	
28.	Interfaces	21/12/19	
29.	creating the packages, using packages	21/12/19	
30.	importance of CLASSPATH and java.lang	24/12/19	
31.	Exception handling, importance of try, catch, throw	26/12/19	
32.	throws and finally block	27/12/19	
33.	User defined exceptions,	30/12/19	
34.	Assertions.	31/12/19	
35.	Tutorial class	31/12/19	

<b>UNIT - IV Multi-Threading</b> <b>CO2: This course introduces computer programming using the JAVA programming language with object-oriented programming principles.</b> <b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
No. of Periods	TOPIC	DATE	Mode of Delivery
36.	Multithreading: introduction,	3/1/20	Lecture
37.	thread life cycle	3/1/20	
38.	creation of threads	4/1/20	
39.	thread priorities	4/1/20	
40.	thread synchronization	6/1/20	



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41.	Tutorial class	7/1/20	
42.	communication between threads	9/1/20	
43.	Reading data from files and writing data to files	1/2/20	
44.	random access file	1/2/20	
45.	Tutorial Class	2/2/20	

### UNIT -V Applets

**CO2: This course introduces computer programming using the JAVA programming language with object-oriented programming principles.**

**TB: Programming in JAVA, Sachin Malhotra, Saurabh**

46.	Applet class	8/2/20	Lecture interspersed with discussions
47.	Applet structure	11/2/20	
48.	Applet life cycle	14/2/20	
49.	sample Applet programs	15/2/20	
50.	Event handling: event delegation model	24/2/20	
51.	sources of event, Event Listeners	25/2/20	
52.	adapter classes	26/2/20	
53.	inner classes	3/3/20	
54.	Applet class	8/2/20	
55.	Tutorial Classes	8/2/20	

### UNIT -VI AWT

**CO3: Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using Java for network level programming and middleware development.**

**TB: Programming in JAVA, Sachin Malhotra, Saurabh**

56.	AWT introduction.	5/3/20	Lecture interspersed with discussions
57.	components and containers	6/3/20	
58.	Button	7/3/20	
59.	Label	7/3/20	
60.	Checkbox	10/3/20	
61.	Radio Buttons	16/3/20	
62.	List Boxes,	17/3/20	
63.	Choice Boxes	6/3/20	
64.	Container class	18/3/20	
65.	Layouts	18/3/20	
66.	Menu and Scrollbar	18/3/20	
67.	Tutorial class	19/3/20	

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**TENTATIVE LESSON PLAN: R1622052**

<b>Course Title : Java Programming</b>		
<b>Section : Sec B</b>	<b>Date : 15-11-2019</b>	
<b>Revision No : 00</b>	<b>Prepared By : D.V.V Brahmachari</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT –I Introduction</b>			
<b>CO1: Understanding the OOP's concepts, classes and objects, threads, files, applets, swings and act.</b>			
<b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
1.	Introduction to OOP	18/11/19	Lecture interspersed with discussions
2.	procedural programming language and object oriented language	18/11/19	
3.	Principles of OOP	19/11/19	
4.	applications of OOP	21/11/19	
5.	history of java, java features	22/11/19	
6.	JVM, program structure.	23/11/19	
7.	Variables, primitive data types	25/11/19	
8.	Tutorial class	26/11/19	
9.	identifiers, literals, operators	28/11/19	
10.	expressions, precedence rules and associativity,	29/11/19	
11.	primitive type conversion and casting	30/11/19	
12.	flow of control.	30/11/19	
13.	<b>Tutorial</b>	06/12/19	
<b>UNIT 2:Class and Object</b>			
<b>CO1: Understanding the OOP's concepts, classes and objects, threads, files, applets, swings and act.</b>			
<b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
14.	Classes and objects	6/12/19	Lecture interspersed with discussions
15.	class declaration, creating objects	7/12/19	
16.	methods, constructors and constructor overloading	7/12/19	
17.	garbage collector	9/12/19	
18.	importance of static keyword and examples	10/12/19	
19.	this keyword, arrays	11/12/19	
20.	command line arguments	12/12/19	
21.	nested classes.	13/12/19	



22.	Tutorial class	16/12/19	
23.	Classes and objects	6/12/19	
<b>UNIT –III INHERITANCE</b>			
<b>CO1: Understanding the OOP's concepts, classes and objects, threads, files, applets, swings and act.</b>			
<b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
24.	Inheritance, types of inheritance, Exception handling,	17/12/19	Lecture interspersed with discussions
25.	importance of try, catch, throw, exceptions,	19/12/19	
26.	super keyword, final keyword,	19/12/19	
27.	overriding and abstract class.	20/12/19	
28.	Interfaces	21/12/19	
29.	creating the packages, using packages	21/12/19	
30.	importance of CLASSPATH and java.lang	24/12/19	
31.	Exception handling, importance of try, catch, throw	26/12/19	
32.	throws and finally block	27/12/19	
33.	User defined exceptions,	30/12/19	
34.	Assertions.	31/12/19	
35.	Tutorial class	31/12/19	

<b>UNIT - IV Multi-Threading</b>			
<b>CO2: This course introduces computer programming using the JAVA programming language with object-oriented programming principles.</b>			
<b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
No. of Periods	TOPIC	DATE	Mode of Delivery
36.	Multithreading: introduction,	3/1/20	Lecture interspersed with discussions
37.	thread life cycle	3/1/20	
38.	creation of threads	4/1/20	
39.	thread priorities	4/1/20	
40.	thread synchronization	6/1/20	
41.	Tutorial class	7/1/20	
42.	communication between threads	9/1/20	
43.	Reading data from files and writing data to files	1/2/20	
44.	random access file	1/2/20	
45.	Tutorial Class	2/2/20	
<b>UNIT -V Applets</b>			
<b>CO2: This course introduces computer programming using the JAVA programming language with object-oriented programming principles.</b>			



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<b>TB: Programming in JAVA, Sachin Malhotra, Saurabh</b>			
46.	Applet class	8/2/20	Lecture interspersed with discussions
47.	Applet structure	11/2/20	
48.	Applet life cycle	14/2/20	
49.	sample Applet programs	15/2/20	
50.	Event handling: event delegation model	24/2/20	
51.	sources of event, Event Listeners	25/2/20	
52.	adapter classes	26/2/20	
53.	inner classes	3/3/20	
54.	Applet class	8/2/20	
55.	Tutorial Classes	8/2/20	

**UNIT –VI AWT**

**CO3: Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using Java for network level programming and middleware development.**

**TB: Programming in JAVA, Sachin Malhotra, Saurabh**

56.	AWT introduction.	5/3/20	Lecture interspersed with discussions
57.	components and containers	6/3/20	
58.	Button	7/3/20	
59.	Label	7/3/20	
60.	Checkbox	10/3/20	
61.	Radio Buttons	16/3/20	
62.	List Boxes,	17/3/20	
63.	Choice Boxes	6/3/20	
64.	Container class	18/3/20	
65.	Layouts	18/3/20	
66.	Menu and Scrollbar	18/3/20	
67.	Tutorial class	19/3/20	

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**TENTATIVE LESSON PLAN: R1622053**  
**ADVANCED DATA STRUCTURES**

<b>Course Title: Advanced Data Structures (R1622053)</b>		
<b>Section : Sec A</b>	<b>Date : 17/11/2019</b>	<b>Page No : 01 of 04</b>
<b>Revision No : 00</b>	<b>Prepared By : M Naresh Babu</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs, Moodle**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>Unit-1 SORTING</b>			
<b>CO1: Describe and implement a variety of advanced data structures (hash tables, priority queues, balanced search trees, graphs).</b> <b>TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “</b>			
1	External Sorting, Introduction	20/11/19	Lecture interspersed with discussions
2	K-way Merging	22/11/19	
3	Buffer Handling for parallel Operation	23/11/19	
4	Run Generation	26/11/19 28/11/19	
5	Optimal Merging of Runs	29/11/19	
6	Tutorial	30/11/19	
<b>UNIT-II: HASHING</b>			
<b>CO2: Analyze the space and time complexity of the algorithms studied in the course.</b> <b>TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “</b>			
7	Introduction	2/12/19	Lecture interspersed with discussions
8	Static Hashing- Hash Table	3/12/19	
9	Hash Functions	3/12/19	
10	Secure Hash Function	5/12/19 7/12/19	
11	Overflow Handling	9/12/19 10/12/19	
12	Theoretical Evaluation of Overflow Techniques	11/12/19	
13	Dynamic Hashing- Motivation for Dynamic Hashing	13/12/19	
14	Dynamic Hashing Using Directories	13/12/19	
15	Directory less Dynamic, Hashing	16/12/19	
16	Tutorial	17/12/19	



No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-III: PRIORITY QUEUES (HEAPS)</b>			
<b>CO3: Identify different solutions for a given problem; analyze advantages and disadvantages to different solutions.</b>			
<b>TB:” Data structures and Algorithm Analysis in C, 2nd edition, Mark Allen Weiss, Pearson”</b>			
17	PRIORITY QUEUES (HEAPS) Model	20/12/19	Lecture interspersed with discussions
18	Simple Implementation	20/12/19	
19	Binary Heap-Structure Property	20/12/19	
20	Heap-Order Property	21/12/19	
21	Basic Heap Operations	23/12/19	
22	Other Heap Operation	27/12/19	
23	Applications of Priority Queues	27/12/19	
24	The Selection Problem Event Simulation Problem	31/12/19 2/1/20	
25	Binomial Queues- Binomial Queue Structure	3/1/20	
26	Binomial Queue Operation	6/1/20	
27	Implementation of Binomial Queues	7/1/20	
28	Tutorial	9/1/20	
<b>UNIT-IV: EFFICIENT BINARY SEARCH TREES</b>			
<b>CO4: Demonstrate an understanding of external memory and external search and sorting algorithms.</b>			
<b>TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “</b>			
No. of Periods	TOPIC	Date	Mode of Delivery
29	Optimal Binary Search Trees	28/1/20	Lecture interspersed with discussions
30	AVL Trees	1/2/20	
31	Red-Black Trees- Definition	1/2/20	
32	Representation of a Red - Black Tree	1/2/20	
33	Searching a Red-Black Tree	6/2/20	
34	Inserting into a Red Black Tree	6/2/20	
35	Deletion from a Red-Black Tree	8/2/20	
36	Joining Red-Black Trees	8/2/20	
37	Splitting a Red-Black tree	11/2/20	
38	Tutorial	11/2/20	



**UNIT-V: MULTIWAY SEARCH TREES**

**CO5: Demonstrate an understanding of simple Entity-Relationship models for databases**

**TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “**

39	MULTIWAY SEARCH TREES M-Way Search Trees	13/2/20	Lecture interspersed with discussions
40	Definition and Properties	13/2/20	
41	Searching an M-Way Search Tree	14/2/20	
42	B-Trees-Definition and Properties	15/2/20	
43	Number of Elements in a B-tree	15/2/20	
44	Insertion into B-Tree	26/2/20	
45	Deletion from a B-Tree	26/2/20	
46	B+ -Tree Definition	26/2/20	
47	Searching a B+-Tree	26/2/20	
48	Insertion into B+-tree	27/2/20	
49	Deletion from a B+-Tree	27/2/20	
50	Tutorial	27/2/20	

**UNIT-VI: SORTING**

**CO6: Be familiar with advanced data structures such as balanced search trees, AVL Trees, and B Trees.**

**TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “**

51	DIGITAL SEARCH STRUCTURES Definition	28/2/20	Lecture interspersed with discussions
52	Search, Insert and Delete	28/2/20	
53	Binary tries and Patricia	29/2/20	
54	Binary Tries	2/3/20	
55	Compressed Binary Tries	2/3/20	
56	Patricia	5/3/20	
57	Multi-way Tries- Definitions	5/3/20	
58	Searching a Trie- Sampling Strategies	6/3/20	
59	Insertion into a Trie	6/3/20	
60	Deletion from a Trie	6/3/20	
61	Keys with Different Length	7/3/20	
62	Height of a Trie- Space Required and Alternative Node Structure	7/3/20	
63	Prefix Search and Applications	10/3/20	
64	Compressed Tries and	10/3/20	
65	Compressed Tries With Skip Fields		
66	Compressed Tries With Labeled Edges	10/3/20	





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Department of Computer Science and Engineering

67	Space Required by a Compressed Tries	13/3/20	
68	Tries and Internet Packet Forwarding - IP Routing	16/3/20	
69	1-Bit Tries	16/3/20	
70	Fixed-Stride Tries	16/3/20	
71	Variable-Stride Tries	16/3/20	
72	Tutorial	17/3/20	

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**TENTATIVE LESSON PLAN: R1622053**  
**ADVANCED DATA STRUCTURES**

<b>Course Title: Advanced Data Structures (R1622053)</b>		
<b>Section : Sec B</b>	<b>Date : 17/11/2019</b>	<b>Page No : 01 of 04</b>
<b>Revision No : 00</b>	<b>Prepared By : M Naresh Babu</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs, Moodle**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>Unit-1 SORTING</b>			
<b>CO1: Describe and implement a variety of advanced data structures (hash tables, priority queues, balanced search trees, graphs).</b>			
<b>TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “</b>			
1	External Sorting, Introduction	20/11/19	Lecture interspersed with discussions
2	K-way Merging	22/11/19	
3	Buffer Handling for parallel Operation	23/11/19	
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6	Tutorial	30/11/19	
<b>UNIT-II: HASHING</b>			
<b>CO2: Analyze the space and time complexity of the algorithms studied in the course.</b>			
<b>TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “</b>			
7	Introduction	2/12/19	Lecture interspersed with discussions
8	Static Hashing- Hash Table	3/12/19	
9	Hash Functions	3/12/19	
10	Secure Hash Function	5/12/19 7/12/19	
11	Overflow Handling	9/12/19 10/12/19	
12	Theoretical Evaluation of Overflow Techniques	11/12/19	
13	Dynamic Hashing- Motivation for Dynamic Hashing	13/12/19	
14	Dynamic Hashing Using Directories	13/12/19	
15	Directory less Dynamic, Hashing	16/12/19	
16	Tutorial	17/12/19	



No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-III: PRIORITY QUEUES (HEAPS)</b>			
<b>CO3: Identify different solutions for a given problem; analyze advantages and disadvantages to different solutions.</b>			
<b>TB:” Data structures and Algorithm Analysis in C, 2nd edition, Mark Allen Weiss, Pearson”</b>			
17	PRIORITY QUEUES (HEAPS) Model	20/12/19	Lecture interspersed with discussions
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21	Basic Heap Operations	23/12/19	
22	Other Heap Operation	27/12/19	
23	Applications of Priority Queues	27/12/19	
24	The Selection Problem Event Simulation Problem	31/12/19 2/1/20	
25	Binomial Queues- Binomial Queue Structure	3/1/20	
26	Binomial Queue Operation	6/1/20	
27	Implementation of Binomial Queues	7/1/20	
28	Tutorial	9/1/20	
<b>UNIT-IV: EFFICIENT BINARY SEARCH TREES</b>			
<b>CO4: Demonstrate an understanding of external memory and external search and sorting algorithms.</b>			
<b>TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “</b>			
No. of Periods	TOPIC	Date	Mode of Delivery
29	Optimal Binary Search Trees	28/1/20	Lecture interspersed with discussions
30	AVL Trees	1/2/20	
31	Red-Black Trees- Definition	1/2/20	
32	Representation of a Red - Black Tree	1/2/20	
33	Searching a Red-Black Tree	6/2/20	
34	Inserting into a Red Black Tree	6/2/20	
35	Deletion from a Red-Black Tree	8/2/20	
36	Joining Red-Black Trees	8/2/20	
37	Splitting a Red-Black tree	11/2/20	
38	Tutorial	11/2/20	



**UNIT-V: MULTIWAY SEARCH TREES**

**CO5: Demonstrate an understanding of simple Entity-Relationship models for databases**

**TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “**

39	MULTIWAY SEARCH TREES M-Way Search Trees	13/2/20	Lecture interspersed with discussions
40	Definition and Properties	13/2/20	
41	Searching an M-Way Search Tree	14/2/20	
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43	Number of Elements in a B-tree	15/2/20	
44	Insertion into B-Tree	26/2/20	
45	Deletion from a B-Tree	26/2/20	
46	B+ -Tree Definition	26/2/20	
47	Searching a B+-Tree	26/2/20	
48	Insertion into B+-tree	27/2/20	
49	Deletion from a B+-Tree	27/2/20	
50	Tutorial	27/2/20	

**UNIT-VI: SORTING**

**CO6: Be familiar with advanced data structures such as balanced search trees, AVL Trees, and B Trees.**

**TB:” Fundamentals of Data Structures in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd. “**

51	DIGITAL SEARCH STRUCTURES Definition	28/2/20	Lecture interspersed with discussions
52	Search, Insert and Delete	28/2/20	
53	Binary tries and Patricia	29/2/20	
54	Binary Tries	2/3/20	
55	Compressed Binary Tries	2/3/20	
56	Patricia	5/3/20	
57	Multi-way Tries- Definitions	5/3/20	
58	Searching a Trie- Sampling Strategies	6/3/20	
59	Insertion into a Trie	6/3/20	
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64	Compressed Tries and	10/3/20	
65	Compressed Tries With Skip Fields		
66	Compressed Tries With Labeled Edges	10/3/20	



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Department of Computer Science and Engineering

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67	Space Required by a Compressed Tries	13/3/20	
68	Tries and Internet Packet Forwarding - IP Routing	16/3/20	
69	1-Bit Tries	16/3/20	
70	Fixed-Stride Tries	16/3/20	
71	Variable-Stride Tries	16/3/20	
72	Tutorial	17/3/20	

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**TENTATIVE LESSON PLAN: R1622054**

<b>Course Title : COMPUTER ORGANIZATION</b>		
<b>Section : Sec A</b>	<b>Date : 15-11-2019</b>	
<b>Revision No : 00</b>	<b>Prepared By : A. KALYAN KUMAR</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-1: BASIC STRUCTURE OF COMPUTERS</b>			
<b>CO-1: Students can understand the architecture of modern Computer.</b>			
<b>Text Book:</b> Computer Organization, Carl Hamacher, Zvonks Vranesic, Safea Zaky, 5th Edition, McGraw Hill.			
1.	Functional Units	18-11-2019 19-11-2019	Lecture interspersed with discussions
2.	Basic Operational Concepts	20-11-2019 21-11-2019	
3.	Bus Structures	22-11-2019	
4.	System Software	23-11-2019	
5.	Performance	25-11-2019 26-11-2019	
6.	The History Of Computer Development	27-11-2019 28-11-2019	
<b>UNIT-2: MACHINE INSTRUCTION AND PORGRAMS</b>			
<b>CO-2: They can analyze the Performance of a computer using performance equation.</b>			
<b>Text Book:</b> Computer Organization, Carl Hamacher, Zvonks Vranesic, Safea Zaky, 5th Edition, McGraw Hill.			
7.	Instruction And Instruction Sequencing: RTN, ALN	29-11-2019	Lecture interspersed with discussions
8.	Basic Instruction Types	30-11-2019 02-12-2019	
9.	Addressing Modes	03-12-2019 04-12-2019	
10.	Basic Input / Output Operations	05-12-2019 06-12-2019	
11.	The Role Of Stacks And Queues In Computer Programming Equation	07-12-2019	
12.	Component Of Instructions: Logic Instructions	09-12-2019	
13.	Shift And Rotate Instructions	10-12-2019 11-12-2019	
<b>UNIT -3: TYPES OF INSTRUCTIONS</b>			
<b>CO3: Understanding of different instruction types.</b>			
<b>Text Book:</b> Computer Organization, Carl Hamacher, Zvonks Vranesic, Safea Zaky, 5th Edition, McGraw Hill.			
14.	Arithmetic And Logic Instructions	12-12-2019 13-12-2019	Lecture interspersed with discussions
15.	Branch Instructions	14-12-2019 16-12-2019	
16.	Addressing Modes	17-12-2019 18-12-2019	
17.	Input/ Output Operations	19-12-2019 20-12-2019	

**UNIT – 4: INPUT / OUTPUT ORGANIZATION****CO4: Students can calculate the effective address of an operand by addressing modes.****Text Book:** Computer Organization, Carl Hamacher, Zvonks Vranesic, Safea Zaky, 5th Edition, McGraw Hill.

No. of Periods	TOPIC	DATE	Mode of Delivery
18.	Accessing I/O Devices	21-12-2019 23-12-2019	Lecture interspersed with discussions
19.	Interrupts: Interrupt Hardware	24-12-2019	
20.	Enabling And Disabling Interrupts	25-12-2019	
21.	Handling Multiple Devices	26-12-2019 27-12-2019	
22.	Direct Memory Access	28-12-2019 30-12-2019	
23.	Buses: Synchronous Bus, Asynchronous Bus	31-12-2019 02-01-2020	
24.	Interface Circuits	03-01-2020 04-01-2020	
25.	Standard I/O Interface: Peripheral Component Interconnect Bus(PCI)	06-01-2020 07-01-2020 08-01-2020	
26.	Universal Serial Bus (USB)	09-01-2020 10-01-2020	

**UNIT – 5: THE MEMORY SYSTEMS****CO5: They can understand how computer stores positive and negative numbers.****TB: Programming in JAVA, Sachin Malhotra, Saurabh**

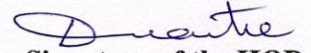
27.	Basic Memory Circuits	27-01-2020 28-01-2020	Lecture interspersed with discussions
28.	Memory System Consideration	30-01-2020 31-01-2020	
29.	Read Only Memory: ROM, PROM, EPROM, EEPROM, Flash Memory	01-02-2020 03-02-2020	
30.	Cache Memory: Mapping Functions	04-02-2020 05-02-2020	
31.	Interleaving	06-02-2020	
32.	Secondary Storage: Magnetic Disks	07-02-2020 08-02-2020	
33.	Optical Disks	10-02-2020 11-02-2020	

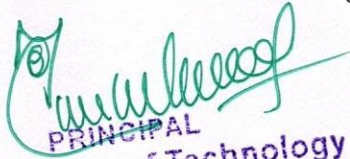
**UNIT – 6: PROCESSING UNIT, MICRO PROGRAMMED CONTROL****CO6:****TB: Programming in JAVA, Sachin Malhotra, Saurabh**

34.	Functional Concepts: Register Transfers	12-02-2020 13-02-2020	Lecture interspersed with discussions
35.	Performing An Arithmetic Or Logic Operation	14-02-2020 15-02-2020	
36.	Fetching A Word From Memory	17-02-2020 18-02-2020	
37.	Execution Of The Complete Instruction	19-02-2020 20-02-2020	
38.	Hardwired Control	22-02-2020 24-02-2020	
39.	Micro Instructions	25-02-2020 26-02-2020	

40.	Micro Program Sequencing	27-02-2020 28-02-2020	
41.	Wide Branch Addressing Micro Instructions With Next Address - Field	02-03-2020 03-03-2020 04-03-2020	

  
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**TENTATIVE LESSON PLAN: R1622054**

<b>Course Title : COMPUTER ORGANIZATION</b>		
<b>Section : Sec B</b>	<b>Date : 15-11-2019</b>	
<b>Revision No : 00</b>	<b>Prepared By : A. KALYAN KUMAR</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-1: BASIC STRUCTURE OF COMPUTERS</b>			
<b>CO-1: Students can understand the architecture of modern Computer.</b>			
<b>Text Book:</b> Computer Organization, Carl Hamacher, Zvonks Vranesic, Safea Zaky, 5th Edition, McGraw Hill.			
1.	Functional Units	18-11-2019 19-11-2019	Lecture interspersed with discussions
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4.	System Software	23-11-2019	
5.	Performance	25-11-2019 26-11-2019	
6.	The History Of Computer Development	27-11-2019 28-11-2019	
<b>UNIT-2: MACHINE INSTRUCTION AND PORGRAMS</b>			
<b>CO-2: They can analyze the Performance of a computer using performance equation.</b>			
<b>Text Book:</b> Computer Organization, Carl Hamacher, Zvonks Vranesic, Safea Zaky, 5th Edition, McGraw Hill.			
7.	Instruction And Instruction Sequencing: RTN, ALN	29-11-2019	Lecture interspersed with discussions
8.	Basic Instruction Types	30-11-2019 02-12-2019	
9.	Addressing Modes	03-12-2019 04-12-2019	
10.	Basic Input / Output Operations	05-12-2019 06-12-2019	
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12.	Component Of Instructions: Logic Instructions	09-12-2019	
13.	Shift And Rotate Instructions	10-12-2019 11-12-2019	
<b>UNIT -3: TYPES OF INSTRUCTIONS</b>			
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14.	Arithmetic And Logic Instructions	12-12-2019 13-12-2019	Lecture interspersed with discussions
15.	Branch Instructions	14-12-2019 16-12-2019	
16.	Addressing Modes	17-12-2019 18-12-2019	
17.	Input/ Output Operations	19-12-2019 20-12-2019	

**UNIT – 4: INPUT / OUTPUT ORGANIZATION****CO4: Students can calculate the effective address of an operand by addressing modes.****Text Book:** Computer Organization, Carl Hamacher, Zvonks Vranesic, Safea Zaky, 5th Edition, McGraw Hill.

No. of Periods	TOPIC	DATE	Mode of Delivery
18.	Accessing I/O Devices	21-12-2019 23-12-2019	Lecture interspersed with discussions
19.	Interrupts: Interrupt Hardware	24-12-2019	
20.	Enabling And Disabling Interrupts	25-12-2019	
21.	Handling Multiple Devices	26-12-2019 27-12-2019	
22.	Direct Memory Access	28-12-2019 30-12-2019	
23.	Buses: Synchronous Bus, Asynchronous Bus	31-12-2019 02-01-2020	
24.	Interface Circuits	03-01-2020 04-01-2020	
25.	Standard I/O Interface: Peripheral Component Interconnect Bus(PCI)	06-01-2020 07-01-2020 08-01-2020	
26.	Universal Serial Bus (USB)	09-01-2020 10-01-2020	

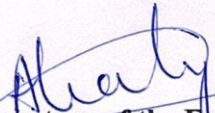
**UNIT – 5: THE MEMORY SYSTEMS****CO5: They can understand how computer stores positive and negative numbers.****TB: Programming in JAVA, Sachin Malhotra, Saurabh**

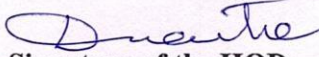
27.	Basic Memory Circuits	27-01-2020 28-01-2020	Lecture interspersed with discussions
28.	Memory System Consideration	30-01-2020 31-01-2020	
29.	Read Only Memory: ROM, PROM, EPROM, EEPROM, Flash Memory	01-02-2020 03-02-2020	
30.	Cache Memory: Mapping Functions	04-02-2020 05-02-2020	
31.	Interleaving	06-02-2020	
32.	Secondary Storage: Magnetic Disks	07-02-2020 08-02-2020	
33.	Optical Disks	10-02-2020 11-02-2020	

**UNIT – 6: PROCESSING UNIT, MICRO PROGRAMMED CONTROL****CO6:****TB: Programming in JAVA, Sachin Malhotra, Saurabh**

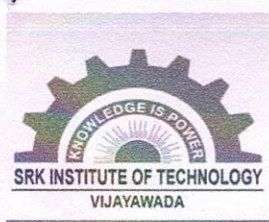
34.	Functional Concepts: Register Transfers	12-02-2020 13-02-2020	Lecture interspersed with discussions
35.	Performing An Arithmetic Or Logic Operation	14-02-2020 15-02-2020	
36.	Fetching A Word From Memory	17-02-2020 18-02-2020	
37.	Execution Of The Complete Instruction	19-02-2020 20-02-2020	
38.	Hardwired Control	22-02-2020 24-02-2020	
39.	Micro Instructions	25-02-2020 26-02-2020	

40.	Micro Program Sequencing	27-02-2020 28-02-2020	
41.	Wide Branch Addressing Micro Instructions With Next Address - Field	02-03-2020 03-03-2020 04-03-2020	

  
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 Computer Science and Engineering

**TENTATIVE LESSON PLAN: R1622055**

**FORMAL LANGUAGES AND AUTOMATA THEORY**

<b>Course- Formal Languages and Automata Theory</b>		
<b>Section: Sec1 &amp; 2</b>	<b>Date: 17/11/19</b>	<b>Page No: 01 of 04</b>
<b>Revision No: 00</b>	<b>Prepared By: B.Ashalataha</b>	<b>Approved By: HOD</b>

**Tools: Black Board, PPTs**

<b>No. of Periods</b>	<b>Topic</b>	<b>Date</b>	<b>Mode of Delivery</b>
<b>Unit-1 Finite Automata</b>			
<b>CO1: To be familiar with basic Formal Languages and machines by their power to recognize languages</b>			
<b>TB:” Introduction to Automata Theory, Languages and Computation, J.E.Hopcroft, R.Motwani and J.D.Ullman, 3rd Edition, Pearson, 2008. “</b>			
1	Why Study Automata Theory, The Central Concepts of Automata Theory, Automation, Finite Automation	20/11/19	Lecturer interspersed with discussions
2	Transition Systems, Acceptance of a String by a Finite Automation, DFA, Design of DFAs	22/11/19	
3	NFA, Design of NFA, Equivalence of DFA and NFA, Conversion of NFA into DFA	23/11/19	
4	Finite Automata with E-Transition, Minimization of Finite Automata	26/11/19 28/11/19	
5	Mealy and Moore Machines, Applications and limitations of FA	29/11/19	
6	<b>Tutorial</b>	30/11/19	
<b>UNIT-II: Regular Expressions</b>			
<b>CO2: To be familiar with the concepts like Regular Expressions.</b>			
<b>TB:” Introduction to Automata Theory, Languages and Computation, J.E.Hopcroft, R.Motwani and J.D.Ullman, 3rd Edition, Pearson, 2008. “</b>			
1	Regular Expressions, Regular Sets,		



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	Identity Rules	2/12/19	Lecturer interspersed with discussions
2	Equivalence of two Regular Expressions Manipulations of Regular Expressions	3/12/19	
3	Regular Expressions and Regular Grammars	5/12/19 7/12/19	
4	Applications of Regular Expressions	9/12/19 10/12/19	
5	Finite Automata and Regular Grammars, Pumping Lemma	11/12/19	
6	<b>Tutorial</b>	13/12/19	
<b>UNIT-III Context Free Grammars</b>			
<b>CO3: Employ finite state machines to solve problems in computing</b>			
<b>TB:” Theory of Computer Science-Automata, Languages and Computation, K.L.P.Mishra and N.Chandrasekharan, 3rd Edition, PHI, 2007. “</b>			
1	Formal Languages, Grammars and Classification,CFG	16/12/19	Lecturer interspersed with discussions
2	Leftmost &Right most Derivations,Parse trees,Ambiguity	17/12/19	
3	Simplification of Context Free Grammars,Closure Propertice	20/12/19	
4	Normal Forms for Context Free Grammars,CNF	21/12/19	
5	Grammars-Chomsky Normal Form, Pumping Lemma	23/12/19	
6	Applications of Context Free Grammars	27/12/19	
7	<b>Tutorial</b>	20/12/19	
<b>UNIT-IV: Pushdown Automata</b>			
<b>CO4: Be familiar with deterministic and non-deterministic machines.</b>			
<b>TB:” Introduction to Automata Theory, Languages and Computation, J.E.Hopcroft, R.Motwani andJ.D.Ullman, 3rd Edition, Pearson, 2008. “</b>			
1	Pushdown Automata,	31/12/19 2/1/20	
2	Definition	3/1/20	
3	Model	6/1/20	



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4	Graphical Notation	7/1/20	Lecturer interspersed with discussions	
5	Graphical Notation	9/1/20		
6	Instantaneous Description Language	31/12/19 2/1/20		
7	Acceptance of pushdown Automata	28/1/20		
8	Acceptance of pushdown Automata	1/2/20		
9	Design of Pushdown Automata	6/2/20		
10	Design of Pushdown Automata	8/2/20		
11	Deterministic PDA	8/2/20		
12	Non – Deterministic Pushdown Automata	11/2/20		
13	Equivalence of Pushdown Automata and Context Free Grammars Conversion	11/2/20		
14	Equivalence of Pushdown Automata and Context Free Grammars Conversion	13/2/20		
15	Equivalence of Pushdown Automata and Context Free Grammars Conversion	13/2/20		
16	Two Stack Pushdown Automata	14/2/20		
17	Two Stack Pushdown Automata	15/2/20		
18	Application of Pushdown Automata	15/2/20		
19	Problems	26/2/20		
20	Problems	26/2/20		
21	<b>Tutorial</b>	26/2/20		
<b>UNIT-V: Turning Machine</b>				
CO5: Be familiar with advanced Comprehend the hierarchy of problems arising in the computer science.				
TB: Theory of Computer Science-Automata, Languages and Computation, K.L.P.Mishra and N.Chandrasekharan, 3rd Edition, PHI, 2007 “ “				
1	Turing Machine,	26/2/20		
2	Definition	27/2/20		



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3	Model	27/2/20	Lecturer interspersed with discussions
4	Representation of Turing Machines- (Instantaneous Descriptions)	27/2/20	
5	Connected Components, Spanning Trees	28/2/20	
6	Transition Tables	28/2/20	
7	Transition Diagrams	29/2/20	
8	Language of a Turing Machine	2/3/20	
9	Design of Turing Machines	28/2/20	
10	Techniques for Turing Machine Construction	28/2/20	
11	Types of Turing Machines	28/2/20	
12	Church's Thesis	29/2/20	
13	Universal Turing Machine, Restricted Turing Machine	29/2/20	
14	<b>Tutorial</b>	29/2/20	

**UNIT-VI: Computability**

**CO6: Be familiar with advanced Comprehend the hierarchy of problems arising in the computer science**

**TB:” Theory of Computer Science-Automata, Languages and Computation, K.L.P.Mishra and N.Chandrasekharan, 3rd Edition, PHI, 2007 “**

1	Decidable and Un-decidable Problems	6/3/20	Lecturer interspersed with discussions
2	Halting Problem of Turing Machines	7/3/20	
3	Post's Correspondence Problem	10/3/20	
4	Iterative Merge Sort	13/3/20	
5	Modified Post's Correspondence Problem	16/3/20	
6	Classes of P and NP, NP-Hard and NP-Complete Problems	16/3/20	
7	<b>Tutorial</b>	17/3/20	

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*D. Nataraj*  
**Signature of HOD**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**TENTATIVE LESSON PLAN:R1622056**

<b>Course Title : Principle of Programming Language</b>		
<b>Section : Sec A</b>	<b>Date : 17-11-2019</b>	
<b>Revision No : 00</b>	<b>Prepared By : M.RITHVIK</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-1( SYNTAX AND SEMANTICS)</b>			
<b>CO1: . Describe syntax and semantics of programming languages</b>			
<b>TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.</b>			
1.	Evolution of programming languages	20.11.2019	Lecture interspersed with discussions
2.	describing syntax	21.11.2019	
3.	Context free grammars	22.11.2019	
4.	Attribute grammars	23.11.2019	
5.	Describing semantics	24.11.2019	
6.	Lexical analysis	25.11.2019	
7.	Parsing: recursive – decent parsing	01.12.2019	
8.	Parsing: bottom - up parsing	03.12.2019	
<b>UNIT-2(DATA, DATA TYPES, AND BASIC STATEMENTS):</b>			
<b>CO2: Explain data, data types, and basic statements of programming languages.</b>			
<b>TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.</b>			
9.	Names, variables	04.12.2019	Lecture interspersed with discussions
10.	binding	04.12.2019	
11.	type checking	05.12.2019	
12.	Scope, Scope rules	06.12.2019	
13.	lifetime and garbage collection	07.12.2019	
14.	primitive data types	08.12.2019	
15.	strings	09.12.2019	
16.	array types	09.12.2019	
17.	associative arrays	11.12.2019	
18.	record types	12.12.2019	
19.	union types	13.12.2019	
20.	pointers and references	14.12.2019	
21.	Arithmetic expressions	15.12.2019	
22.	overloaded operators	16.12.2019	
23.	type conversions	18.12.2019	
24.	relational and Boolean expressions	19.12.2019	





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25.	assignment statements	20.12.2019	
26.	mixed mode assignments	21.12.2019	
27.	control structures – selection, iterations	22.12.2019	
28.	branching	26.12.2019	
29.	guarded Statements	26.12.2019	

**UNIT3(SUBPROGRAMSAND IMPLEMENTATIONS )**

**CO 3: Design and implement subprogram constructs, Apply object - oriented, concurrency, and event handling programming constructs**

**TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.**

30.	Subprograms, design issues	27.12.2019 28.12.2019	Lecture interspersed with discussions
31.	local referencing	29.12.2019	
32.	parameter passing	30.12.2019	
33.	overloaded methods	30.12.2019	
34.	generic methods	02.01.2020	
35.	design issues for functions	03.01.2020	
36.	semantics of call and return	04.01.2020	
37.	implementing simple subprograms	05.01.2020	
38.	stack and dynamic local variables	06.01.2020	
39.	nested subprograms	08.01.2020	
40.	blocks	10.01.2020	
41.	dynamic scoping	11.01.2020	

**UNIT-4(OBJECT- ORIENTATION, CONCURRENCY, AND EVENT HANDLING):**

**CO4: Develop programs in Scheme, ML, and Prolog**

**TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.**

No. of Periods	TOPIC	DATE	Mode of Delivery
42.	Object – orientation	29.01.2020	Lecture
43.	design issues for OOP languages	30.01.2020	
44.	implementation of object-oriented constructs	31.01.2020	
45.	concurrency	01.02.2020	
46.	semaphores	01.02.2020	



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47.	Monitors	02.02.2020	
48.	message passing	03.02.2020	
49.	threads	05.02.2020	
50.	statement level concurrency	06.02.2020	
51.	exception handling	07.02.2020	
<b>UNIT-5(FUNCTIONAL PROGRAMMING LANGUAGES):</b> <b>CO 5: Understand and adopt new programming languages</b> <b>TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.</b>			
52.	Introduction to lambda calculus	10.02.2020	Lecture interspersed with discussions
53.	Fundamentals of Functional programming languages	12.02.2020	
54.	Programming with Scheme	13.02.2020	
55.	Programming with ML	14.02.2020	
<b>UNIT-6(LOGIC PROGRAMMING LANGUAGES):</b> <b>CO 5: Understand and adopt new programming languages</b> <b>TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.</b>			
56.	Introduction to logic and logic programming	01.03.2020 02.03.2020	Lecture interspersed with discussions
57.	Programming with Prolog	03.03.2020	
58.	multi - paradigm languages	05.03.2020	

*N. Rithwik*

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*Chellamangala*

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**TENTATIVE LESSON PLAN:R1622056**

<b>Course Title : Principle of Programming Language</b>		
<b>Section : Sec B</b>	<b>Date : 17-11-2019</b>	
<b>Revision No : 00</b>	<b>Prepared By : M.RITHVIK</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-1( SYNTAX AND SEMANTICS)</b>			
<b>CO1: . Describe syntax and semantics of programming languages</b>			
<b>TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.</b>			
1.	Evolution of programming languages	20.11.2019	Lecture interspersed with discussions
2.	describing syntax	21.11.2019	
3.	Context free grammars	22.11.2019	
4.	Attribute grammars	23.11.2019	
5.	Describing semantics	24.11.2019	
6.	Lexical analysis	25.11.2019	
7.	Parsing: recursive – decent parsing	01.12.2019	
8.	Parsing: bottom - up parsing	03.12.2019	
<b>UNIT-2(DATA, DATA TYPES, AND BASIC STATEMENTS):</b>			
<b>CO2: Explain data, data types, and basic statements of programming languages.</b>			
<b>TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.</b>			
9.	Names, variables	04.12.2019	Lecture interspersed with discussions
10.	binding	04.12.2019	
11.	type checking	05.12.2019	
12.	Scope, Scope rules	06.12.2019	
13.	lifetime and garbage collection	07.12.2019	
14.	primitive data types	08.12.2019	
15.	strings	09.12.2019	
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17.	associative arrays	11.12.2019	
18.	record types	12.12.2019	
19.	union types	13.12.2019	
20.	pointers and references	14.12.2019	
21.	Arithmetic expressions	15.12.2019	
22.	overloaded operators	16.12.2019	
23.	type conversions	18.12.2019	
24.	relational and Boolean expressions	19.12.2019	



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25.	assignment statements	20.12.2019	
26.	mixed mode assignments	21.12.2019	
27.	control structures – selection, iterations	22.12.2019	
28.	branching	26.12.2019	
29.	guarded Statements	26.12.2019	

### UNIT3(SUBPROGRAMSAND IMPLEMENTATIONS )

**CO 3: Design and implement subprogram constructs, Apply object - oriented, concurrency, and event handling programming constructs**

**TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.**

30.	Subprograms, design issues	27.12.2019 28.12.2019	Lecture interspersed with discussions
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32.	parameter passing	30.12.2019	
33.	overloaded methods	30.12.2019	
34.	generic methods	02.01.2020	
35.	design issues for functions	03.01.2020	
36.	semantics of call and return	04.01.2020	
37.	implementing simple subprograms	05.01.2020	
38.	stack and dynamic local variables	06.01.2020	
39.	nested subprograms	08.01.2020	
40.	blocks	10.01.2020	
41.	dynamic scoping	11.01.2020	

### UNIT-4(OBJECT- ORIENTATION, CONCURRENCY, AND EVENT HANDLING):

**CO4: Develop programs in Scheme, ML, and Prolog**

**TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.**

No. of Periods	TOPIC	DATE	Mode of Delivery
42.	Object – orientation	29.01.2020	Lecture
43.	design issues for OOP languages	30.01.2020	
44.	implementation of object-oriented constructs	31.01.2020	
45.	concurrency	01.02.2020	
46.	semaphores	01.02.2020	



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47.	Monitors	02.02.2020	
48.	message passing	03.02.2020	
49.	threads	05.02.2020	
50.	statement level concurrency	06.02.2020	
51.	exception handling	07.02.2020	
<b>UNIT-5(FUNCTIONAL PROGRAMMING LANGUAGES):</b> <b>CO 5: Understand and adopt new programming languages</b> <b>TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.</b>			
52.	Introduction to lambda calculus	10.02.2020	Lecture interspersed with discussions
53.	Fundamentals of Functional programming languages	12.02.2020	
54.	Programming with Scheme	13.02.2020	
55.	Programming with ML	14.02.2020	
<b>UNIT-6(LOGIC PROGRAMMING LANGUAGES):</b> <b>CO 5: Understand and adopt new programming languages</b> <b>TB: Robert W. Sebesta, “Concepts of Programming Languages”, Tenth Edition, Addison Wesley, 2012.</b>			
56.	Introduction to logic and logic programming	01.03.2020 02.03.2020	Lecture interspersed with discussions
57.	Programming with Prolog	03.03.2020	
58.	multi - paradigm languages	05.03.2020	

*M. Lathika*

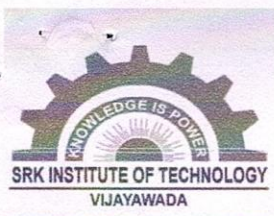
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**TENTATIVE LESSON PLAN: R1632051**

<b>Course Title : Computer Networks</b>		
<b>Section : Sec A</b>	<b>Date : 15-11-2019</b>	
<b>Revision No : 00</b>	<b>Prepared By : T.Naga Raju</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT –I Introduction</b> <b>CO1: Understand state-of-the-art in network protocols, architectures, and applications</b> <b>TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010</b>			
1.	<b>UNIT – I: Introduction: ComputerNetworks</b>	18/11/2019	Lecture interspersed with discussions
2.	Network Topologies WAN, LAN,MAN.	22/11/2019	
3.	Reference models- The OSI Reference Model	26/11/2019	
4.	The TCP/IP Reference Model	28/11/2019	
5.	A Comparison of the OSI andTCP/IP Reference Models	29/11/2019 30/11/2019	
6.	Tutorial class	2/12/2019	
<b>UNIT 2:Physical Layer</b> <b>CO1: Understand state-of-the-art in network protocols, architectures, and applications</b> <b>TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010</b>			
7.	<b>Physical Layer – Fourier Analysis: – Bandwidth LimitedSignals</b>	3/12/2019	Lecture interspersed with discussions
8.	The Maximum Data Rate ofa Channel	10/12/2019	
9.	Guided Transmission Media,	18/12/2019	
10.	Digital Modulation	19/12/2019	
11.	Multiplexing: Frequency Division Multiplexing,	20/12/2019	
12.	Time Division Multiplexing,	20/12/2019	
13.	Code Division Multiplexing	21/12/2019	
14.	Data Link Layer Design Issues,Error Detection and Correction,	23/12/2019	
15.	Elementary Data Link Protocols,	24/12/2019	
16.	Sliding Window Protocols	27/12/2019	
17.	Tutorial Class	30/12/2019	
<b>UNIT –III DATALINK LAYER</b> <b>CO2: Process of networking research</b> <b>TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010</b>			
18.	<b>The Data Link Layer - ServicesProvided to the Network Layer</b>	31/12/2019	



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19.	Framing	2/1/2020	Lecture interspersed with discussions
20.	Error Control –Flow Control,	2/1/2020	
21.	Error Detection and Correction	3/1/2020	
22.	Error-Correcting Codes	3/1/2020	
23.	Error Detecting Codes,	4/1/2020	
24.	Elementary Data Link Protocols- A Utopian Simplex Protocol-	4/1/2020	
25.	A Simplex Stop and Wait Protocol for an Error free channel-	6/1/2020	
26.	A Simplex Stop and Wait Protocol for a Noisy Channel,	6/1/2020	
27.	Sliding Window Protocols-AOne Bit Sliding Window Protocol-	7/1/2020	
28.	A Protocol Using Go-Back-N-	7/1/2020	
29.	A Protocol Using Selective Repeat	9/1/2020	
30.	Tutorial class	10/1/2020	

### UNIT - IV The Medium Access Control Sublayer

**CO2: Process of networking research**

**TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010**

No. of Periods	TOPIC	DATE	Mode of Delivery
31.	<b>The Medium Access Control Sublayer-The Channel Allocation Problem</b>	27/1/2020	Lecture interspersed with discussions
32.	Static Channel Allocation-Assumptions for Dynamic Channel Allocation,	28/1/2020	
33.	Multiple Access Protocols-Aloha-	29/01/2020	
34.	Carrier Sense Multiple AccessProtocols-	29/01/2020	
35.	Collision-Free Protocols	30/01/2020	



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36.	Limited Contention Protocols-	30/01/2020	
37.	Wireless LAN Protocols,	4/2/2020	
38.	Ethernet-Classic Ethernet Physical Layer-Classic Ethernet	5/2/2020	
39.	MAC Sublayer Protocol-Ethernet Performance-Fast Ethernet	6/2/2020	
40.	Gigabit Ethernet-10-Gigabit Ethernet-Retrospective on Ethernet	6/2/2020	
41.	Wireless Lans-The 802.11 Architecture	8/2/2020	
42.	Protocol Stack-The 802.11 Physical Layer	7/2/2020	
43.	The 802.11 MAC Sublayer Protocol	8/2/2020	
44.	The 805.11 Frame Structure-Services	10/2/2020	
45.	Tutorial class	11/2/2020	

**UNIT -V Network Layer**

**CO3: Constraints and thought processes for networking research.**

**TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010**

46.	<b>Design Issues</b> -The Network Layer Design Issues –	12/2/2020	Lecture interspersed with discussions
47.	Store and Forward Packet Switching-	13/2/2020	
48.	Services Provided to the Transport Layer	14/2/2020	
49.	Implementation of Connectionless Service-	17/2/2020	
50.	Implementation of Connection Oriented Service-	18/2/2020	
51.	Comparison of Virtual Circuit and Datagram Networks,	24/2/2020	
52.	Routing Algorithms-The Optimality principle	25/2/2020	
53.	Shortest path Algorithm,	26/2/2020	
54.	Congestion Control Algorithms	26/2/2020	
55.	Approaches to Congestion Control-Traffic	27/2/2020	
56.	Aware Routing-Admission	27/2/2020	
57.	Control-Traffic Throttling-Load Shedding.	28/2/2020	
58.	Tutorial Class	2/3/2020	

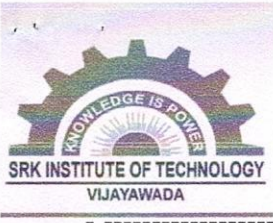
**UNIT -VI Transport Layer and Application Layer**

**CO3: Constraints and thought processes for networking research.**

**TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010**

59.	<b>Transport Layer – The Internet</b> Transport Protocols: Udp,	5/3/2020	
60.	The Internet Transport Protocols: Tcp	6/3/2020	
61.	Application Layer –The Domain Name System:	9/3/2020	
62.	The DNS Name Space, Resource Records,	11/3/2020	
63.	Name Servers,	13/3/2020	





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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

64.	Electronic Mail: Architecture and Services,	13/3/2020	Lecture interspersed with discussions
65.	The User Agent, Message Formats,	16/3/2020	
66.	Message Transfer,	16/3/2020	
67.	Final Delivery	17/3/2020	
68.	Tutorial Class	18/3/2020	

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

## TENTATIVE LESSON PLAN: R1632051

<b>Course Title : Computer Networks</b>		
<b>Section : Sec B</b>	<b>Date : 15-11-2019</b>	
<b>Revision No : 00</b>	<b>Prepared By : G.Maneesha</b>	<b>Approved By : HOD</b>

**Tools: Black board, PPTs**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT –I Introduction</b>			
<b>CO1: Understand state-of-the-art in network protocols, architectures, and applications</b>			
<b>TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010</b>			
1.	<b>UNIT – I: Introduction: Computer Networks</b>	18/11/2019	Lecture interspersed with discussions
2.	Network Topologies WAN, LAN, MAN.	22/11/2019	
3.	Reference models- The OSI Reference Model	26/11/2019	
4.	The TCP/IP Reference Model	28/11/2019	
5.	A Comparison of the OSI and TCP/IP Reference Models	29/11/2019 30/11/2019	
6.	Tutorial class	2/12/2019	
<b>UNIT 2: Physical Layer</b>			
<b>CO1: Understand state-of-the-art in network protocols, architectures, and applications</b>			
<b>TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010</b>			
7.	<b>Physical Layer – Fourier Analysis: – Bandwidth Limited Signals</b>	3/12/2019	Lecture interspersed with discussions
8.	The Maximum Data Rate of a Channel	10/12/2019	
9.	Guided Transmission Media,	18/12/2019	
10.	Digital Modulation	19/12/2019	
11.	Multiplexing: Frequency Division Multiplexing,	20/12/2019	
12.	Time Division Multiplexing,	20/12/2019	
13.	Code Division Multiplexing	21/12/2019	
14.	Data Link Layer Design Issues, Error Detection and Correction,	23/12/2019	
15.	Elementary Data Link Protocols,	24/12/2019	
16.	Sliding Window Protocols	27/12/2019	
17.	Tutorial Class	30/12/2019	
<b>UNIT –III DATALINK LAYER</b>			
<b>CO2: Process of networking research</b>			
<b>TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010</b>			
18.	<b>The Data Link Layer - Services Provided to the Network Layer</b>	31/12/2019	
19.	Framing	2/1/2020	



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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

20.	Error Control –Flow Control,	2/1/2020	Lecture interspersed with discussions
21.	Error Detection and Correction	3/1/2020	
22.	Error-Correcting Codes	3/1/2020	
23.	Error Detecting Codes,	4/1/2020	
24.	Elementary Data Link Protocols- A Utopian Simplex Protocol-	4/1/2020	
25.	A Simplex Stop and Wait Protocol for an Error free channel-	6/1/2020	
26.	A Simplex Stop and Wait Protocol for a Noisy Channel,	6/1/2020	
27.	Sliding Window Protocols-AOne Bit Sliding Window Protocol-	7/1/2020	
28.	A Protocol Using Go-Back-N-	7/1/2020	
29.	A Protocol Using Selective Repeat	9/1/2020	
30.	Tutorial class	10/1/2020	

<b>UNIT - IV The Medium Access Control Sublayer</b> <b>CO2: Process of networking research</b> <b>TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010</b>			
No. of Periods	TOPIC	DATE	Mode of Delivery
31.	<b>The Medium Access Control Sublayer-The Channel Allocation Problem</b>	27/1/2020	Lecture interspersed with discussions
32.	Static Channel Allocation-Assumptions for Dynamic Channel Allocation,	28/1/2020	
33.	Multiple Access Protocols-Aloha-	29/01/2020	
34.	Carrier Sense Multiple AccessProtocols-	29/01/2020	
35.	Collision-Free Protocols	30/01/2020	



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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

36.	Limited Contention Protocols-	30/01/2020	
37.	Wireless LAN Protocols,	4/2/2020	
38.	Ethernet-Classic Ethernet Physical Layer-Classic Ethernet	5/2/2020	
39.	MAC Sublayer Protocol-Ethernet Performance-Fast Ethernet	6/2/2020	
40.	Gigabit Ethernet-10-Gigabit Ethernet-Retrospective on Ethernet	6/2/2020	
41.	Wireless Lans-The 802.11 Architecture	8/2/2020	
42.	Protocol Stack-The 802.11 Physical Layer	7/2/2020	
43.	The 802.11 MAC Sublayer Protocol	8/2/2020	
44.	The 805.11 Frame Structure-Services	10/2/2020	
45.	Tutorial class	11/2/2020	

**UNIT -V Network Layer**

**CO3: Constraints and thought processes for networking research.**

**TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010**

46.	<b>Design Issues</b> -The Network Layer Design Issues –	12/2/2020	Lecture interspersed with discussions
47.	Store and Forward Packet Switching-	13/2/2020	
48.	Services Provided to the Transport Layer	14/2/2020	
49.	Implementation of Connectionless Service-	17/2/2020	
50.	Implementation of Connection Oriented Service-	18/2/2020	
51.	Comparison of Virtual Circuit and Datagram Networks,	24/2/2020	
52.	Routing Algorithms-The Optimality principle	25/2/2020	
53.	Shortest path Algorithm,	26/2/2020	
54.	Congestion Control Algorithms	26/2/2020	
55.	Approaches to Congestion Control-Traffic	27/2/2020	
56.	Aware Routing-Admission	27/2/2020	
57.	Control-Traffic Throttling-Load Shedding.	28/2/2020	
58.	Tutorial Class	2/3/2020	

**UNIT -VI Transport Layer and Application Layer**

**CO3: Constraints and thought processes for networking research.**

**TB: Tanenbaum and David J Wetherall, Computer Networks, 5th Edition, Pearson Edu, 2010**

59.	<b>Transport Layer – The Internet</b> Transport Protocols: Udp,	5/3/2020	
60.	The Internet Transport Protocols: Tcp	6/3/2020	
61.	Application Layer –The Domain Name System:	9/3/2020	
62.	The DNS Name Space, Resource Records,	11/3/2020	
63.	Name Servers,	13/3/2020	



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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

64.	Electronic Mail: Architecture and Services,	13/3/2020	Lecture interspersed with discussions
65.	The User Agent, Message Formats,	16/3/2020	
66.	Message Transfer,	16/3/2020	
67.	Final Delivery	17/3/2020	
68.	Tutorial Class	18/3/2020	

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### TENTATIVE LESSON PLAN

<b>Course Title : DATA WAREHOUSING AND MINING(R1632052)</b>		
<b>Year /Sem : III/II</b>	<b>Date :</b>	<b>AY:2019-20</b>
<b>Revision No :</b>	<b>Prepared By :Dr.N Neelima Priyanka Associate Prof</b>	<b>Approved By : HOD</b>

**Tools: Black Board,PPT, Video Lectures**

**UNIT-I Introduction**

**CO1:**Understand stages in building a Data Warehouse.

**TEXT BOOK:**

1. Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson.
2. Data Mining concepts and Techniques, 3/e, Jiawei Han, Michel Kamber, Elsevier

No.of Periods	Topic	Date	Mode of delivery
1	<b>Introduction</b>	18-11-2019	Lecture with discussions
2	Why Data Mining? What Is Data Mining?	19-11-2019	
3	What Kinds of Data Can Be Mined?	20-11-2019	
4	What Kinds of Patterns Can Be Mined?	21-11-2019	
5	Which Technologies Are Used?	22-11-2019	
6	Major Issues in Data Mining.	26-11-2019	
7,8	Data Objects and Attribute Types	28-11-2019,29-11-2019	
9,10	Basic Statistical Descriptions of Data	5-12-2019,6-12-2019	
11,12	Data Visualization	9-12-2019,10-12-2019	
13	Measuring Data Similarity and	11-12-2019	
14	Tutorial	12-12-2019	

**UNIT-II:Data Pre-processing**

**CO2:**Gain knowledge about data preprocessing, and proximity measures on different data sets.

**TEXT BOOK:**

1. Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson.
2. Data Mining concepts and Techniques, 3/e, Jiawei Han, Michel Kamber, Elsevier

15	Data Preprocessing	16-12-2019,17-12-2019	Lecture with discussions
16,17	Data Cleaning	18-12-2019,20-12-2019	
18	Data Integration	21-12-2019	
19,20	Data Reduction	23-12-2019, 24-12-2019	
21,22	Data Transformation	25-12-2019, 26-12-2019	
23	Data Discretization	27-12-2019	
24	Tutorial	28-12-2019	



**UNIT-III: Classification**

**CO3:** Gain knowledge about basic concepts of classification and Decision Tree algorithm.

**TEXT BOOK:**

1. Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson.
2. Data Mining concepts and Techniques, 3/e, Jiawei Han, Michel Kamber, Elsevier

25	<b>Introduction to Classification</b>	30-12-2019	Lecture with discussions
26	Basic concepts	31-12-2019	
27	General approach to solving a classification	02-01-2020	
28	Decision tree induction	03-01-2020	
29	Working of decision tree	04-01-2020	
30,31	Building a decision tree	06-01-2020,07-01-2020	
32	Methods for expressing an attribute test conditions	08-01-2020	
33	Measures for selecting the best split	09-01-2020	
34	Algorithm for decision tree induction	10-01-2020	
35	Tutorial	11-01-2020	

**UNIT-IV: Classification Alternative Techniques**

**CO4:** Gain knowledge about basic concepts of classification and Decision Tree algorithm

**TEXT BOOK:**

1. Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson.
2. Data Mining concepts and Techniques, 3/e, Jiawei Han, Michel Kamber, Elsevier

36	Classification: Alternative Techniques	24-01-2020	Lecture with discussions
37	Bayes' Theorem,	25-01-2020	
38,39	Naïve Bayesian Classification,	27-01-2020, 29-01-2020	
40	Bayesian Belief Networks	31-01-2020	
41	Tutorial	03-02-2020	

**UNIT-V: Association Analysis: Basic Concepts and Algorithms**

**CO5:** Analyze and evaluate performance of algorithms for Association Rules.


**TEXT BOOK:**

1. Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson.
2. Data Mining concepts and Techniques, 3/e, Jiawei Han, Michel Kamber, Elsevier .


42	<b>Association Basic concepts</b>	06-02-2020	Lecture with discussions
43	Problem Defecation,	10-02-2020	
44	Frequent item set generation	17-02-2020	
45	Rule generation	18-02-2020	
46,47	Compact representation of frequent item sets	19-02-2020,22-02-2020	
48	FP-growth algorithm	24-02-2020	
49	Apriori example	26-02-2020	
50	Rule generation example	28-02-2020	



51	FP Growth Example	29-02-2020	
52	Analysis of FP Growth	02-03-2020	
53	Tutorial	04-03-2020	
<b>UNIT-VI: Cluster Analysis: Basic Concepts and Algorithms</b> <b>CO6:</b> Be able to understand Clustering techniques like K-Means, bisecting K-Means and additional issues of K-Means. Become familiar with Hierarchical clustering and density based clustering <b>TEXT BOOK:</b> 1. Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson. 2. Data Mining concepts and Techniques, 3/e, Jiawei Han, Michel Kamber, Elsevier			
54	Basic concepts, cluster analysis	05-03-2020	Lecture with discussions
55	Different types of clustering	06-03-2020	
56	Different types of clusters	09-03-2020	
57,58	K-means, The basic K-means algorithm	11-03-2020, 12-03-2020	
59	K-means: Additional issues, Bisection k-means	11-03-2020	
60	k-means and different types of clusters strengths and weaknesses	12-03-2020	
61	K-means as an optimization problem	14-03-2020	
62	Hierarchical clustering	16-03-2020	
63,64	Agglomerative hierarchical clustering algorithm, specific techniques	16-03-2020	
65	DBSCAN, Traditional Density: Center-based	17-03-2020	
66	Tutorial	17-03-2020	

  
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 HOD/Date





## TENTATIVE LESSON PLAN

### DESIGN AND ANALYSIS OF ALGORIYHMS R1632053

<b>Course Title : DESIGN AND ANALYSIS OF ALGORIYHMS</b>		
<b>Section : A</b>	<b>Date : 19-11-19</b>	<b>Page No : 01 of 03</b>
<b>Revision No : 00</b>	<b>Prepared By : P.JAYASRI</b>	<b>Approved By : HOD</b>

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT – Introduction.</b> <b>CO1:: Different techniques to represent an algorithm</b> <b>TB: 1. Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.</b> <b>2. Introduction to Algorithms, Thomas H.cormen, PHI Learning</b>			
1.	<b>Unit – 1</b> Introduction to algorithms	19/11/19 20/11/19	Lecture interspersed with discussions
2.	Pseudo code for expressing algorithms	22/11/19	
3.	Recursive Algorithm	22/11/19	
4.	Analysis of space complexity	23/11/19	
5.	Analysis of time complexity	23/11/19 26/11/19	
6.	Asymptotic notations: big oh, omega, theta notations	29/11/19	
7.	Little oh, little omega notations, examples	03/12/19	
8.	Amortized Analysis	03/12/19	
9.	Example on Amortized analysis	04/12/19	
10.	<b>Tutorial</b>	06/12/19	
<b>UNIT –II Divide and conquer</b> <b>CO2:: . The Tree Of Calls Of Merge Sort.</b> <b>TB Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.</b> <b>2. Introduction to Algorithms, Thomas H.cormen, PHI Learning</b>			
11.	Divide and conquer approach General method	07/12/19	Lecture interspersed with discussions
12.	Binary search	10/12/19	
13.	Analysis of Binary search	11/12/19	
14.	Finding Maximum and Minimum	13/12/19 17/12/19	
15.	Quick sort	18/12/19	
16.	Analysis of quick sort	18/12/19	
17.	Merge sort	20/12/19	
18.	Analysis of Merge sort	21/12/19	
19.	Performance Measurement	21/12/19	
20.	Defective Chess Board Problem	24/12/19	
21.	Randomized Sorting Algorithms	24/12/19	
22.	<b>Tutorial</b>	24/12/19	



**UNIT –III Greedy method**

1. CO3:: Present an optimal randomized algorithm for minimum cost spanning trees and knapsack problem.
2. TB: Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.

Introduction to Algorithms, Thomas H.cormen,PHI Learning.

23.	Greedy approach General method	26/12/19	Lecture interspersed with discussions
24.	Knapsack problem	26/12/19 27/12/19	
25.	Job Sequencing with Dead lines	31/12/19	
26.	Minimum cost spanning trees, kruskal's algorithm	03/01/20	
27.	Prim's algorithm	04/01/20	
28.	Single source shortest path problem	04/01/20	
29.	Optimal Randomized Algorithm	07/01/20	
30.	Optimal Merge Patterns	07/01/20	
31.	Minimum cost spanning trees, kruskal's algorithm		
32.	<b>Tutorial</b>	07/01/19	

**UNIT - IV Dynamic Programming**

**CO4:: The General Concept Of Dynamic Programming**

**TB: Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.**

**2. Introduction to Algorithms, Thomas H.cormen,PHI Learning.**

No. of Periods	TOPIC	DATE	Mode of Delivery
33.	<b>UNIT-4:Dynamic programming</b> General method	28/01/20	Lecture interspersed with discussions
34.	All pairs shortest path problem	28/01/20	
35.	Single Source Shortest paths General weights	29/01/20	
36.	String Edition	07/02/20 08/02/20	
37.	Tutorial class	08/02/20	
38.	0/1 Knapsack Problem	10/02/20	
39.	Reliability design	12/02/20	
40.	<b>Tutorial</b>	13/02/20	

**UNIT – V Backtracking**

**CO5:: Device a backtracking algorithm for m-coloring graph problem.**

1. TB: Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.
2. Introduction to Algorithms, Thomas H.cormen,PHI Learning.

41.	Back tracking General method	14/02/20	
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42.	n-queen problem	15/02/20	Lecture interspersed with discussions
43.	Sum of subsets problem	17/02/20 18/02/20	
44.	Tutorial class	24/02/20	
45.	Graph coloring	25/02/20	
46.	Hamiltonian cycles	25/02/20 26/02/20	
47.	Back tracking General method	26/02/20 27/02/20	
48.	n-queen problem	14/02/20	
49.	Sum of subsets problem	15/02/20	
50.	<b>Tutorial</b>	17/02/20 18/02/20	

**UNIT –VI Branch and Bound**

**CO4:: FIFOBB algorithm.**

**TB:: Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.**

**2. Introduction to Algorithms, Thomas H.cormen, PHI Learning.**

51.	Frequency management: Numbering and grouping	28/02/20	Lecture interspersed with discussions
52.	Branch and bound General method	29/02/20	
53.	Least Cost Search	29/02/20	
54.	Control Abstraction for LC Search, Bounding	03/03/20	
55.	FIFO branch and bound	04/03/20	
56.	LIFO branch and bound , LC Branch and Bound	04/03/20	
57.	Tutorial class	06/03/20 07/03/20	
58.	0/1 Knapsack Problem	07/03/20	
59.	LC Branch and Bound Solution	10/03/20	
60.	FIFO Branch and Bound Solution	11/03/20	
61.	Travelling Sales Person	13/03/20 17/03/20	
62.	<b>Tutorial</b>	17/03/20	

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## TENTATIVE LESSON PLAN

### DESIGN AND ANALYSIS OF ALGORIYHMS R1632053

<b>Course Title : DESIGN AND ANALYSIS OF ALGORIYHMS</b>		
<b>Section : B</b>	<b>Date : 19-11-19</b>	<b>Page No : 01 of 03</b>
<b>Revision No : 00</b>	<b>Prepared By : P.JAYASRI</b>	<b>Approved By : HOD</b>

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT – Introduction</b> <b>CO1:: Different techniques to represent an algorithm</b> <b>TB: 1. Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.</b> <b>2. Introduction to Algorithms, Thomas H.cormen,PHI Learning</b>			
63.	<b>Unit – 1</b>	19/11/19	Lecture interspersed with discussions
	Introduction to algorithms	20/11/19	
64.	Pseudo code for expressing algorithms	22/11/19	
65.	Recursive Algorithm	22/11/19	
66.	Analysis of space complexity	23/11/19	
67.	Analysis of time complexity	23/11/19	
		26/11/19	
68.	Asymptotic notations: big oh, omega, theta notations	29/11/19	
69.	Little oh, little omega notations, examples	03/12/19	
70.	Amortized Analysis	03/12/19	
71.	Example on Amortized analysis	04/12/19	
72.	<b>Tutorial</b>	06/12/19	
<b>UNIT –II Divide and conquer</b> <b>CO2:: . The Tree Of Calls Of Merge Sort</b> <b>TB Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.</b> <b>2. Introduction to Algorithms, Thomas H.cormen,PHI Learning</b>			
73.	Divide and conquer approach General method	07/12/19	Lecture interspersed with discussions
74.	Binary search	10/12/19	
75.	Analysis of Binary search	11/12/19	
76.	Finding Maximum and Minimum	13/12/19	
		17/12/19	
77.	Quick sort	18/12/19	
78.	Analysis of quick sort	18/12/19	
79.	Merge sort	20/12/19	
80.	Analysis of Merge sort	21/12/19	
81.	Performance Measurement	21/12/19	
82.	Defective Chess Board Problem	24/12/19	
83.	Randomized Sorting Algorithms	24/12/19	
84.	<b>Tutorial</b>	24/12/19	



**UNIT –III Greedy method**

- 3. CO3:: Present an optimal randomized algorithm for minimum cost spanning trees and knapsack problem.
- 4. TB: Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.

**Introduction to Algorithms, Thomas H.cormen,PHI Learning.**

85.	Greedy approach General method	26/12/19	Lecture interspersed with discussions
86.	Knapsack problem	26/12/19 27/12/19	
87.	Job Sequencing with Dead lines	31/12/19	
88.	Minimum cost spanning trees, kruskal's algorithm	03/01/20	
89.	Prim's algorithm	04/01/20	
90.	Single source shortest path problem	04/01/20	
91.	Optimal Randomized Algorithm	07/01/20	
92.	Optimal Merge Patterns	07/01/20	
93.	Minimum cost spanning trees, kruskal's algorithm		
94.	<b>Tutorial</b>	07/01/19	

**UNIT - IV Dynamic Programming**

**CO4:: The General Concept Of Dynamic Programming**

**TB: Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.**

**2. Introduction to Algorithms, Thomas H.cormen,PHI Learning.**

No. of Periods	TOPIC	DATE	Mode of Delivery
95.	UNIT-4:Dynamic programming General method	28/01/20	Lecture interspersed with discussions
96.	All pairs shortest path problem	28/01/20	
97.	Single Source Shortest paths General weights	29/01/20	
98.	String Edition	07/02/20 08/02/20	
99.	Tutorial class	08/02/20	
100.	0/1 Knapsack Problem	10/02/20	
101.	Reliability design	12/02/20	
102.	<b>Tutorial</b>	13/02/20	

**UNIT – V Backtracking**

**CO5:: Device a backtracking algorithm for m-coloring graph problem.**

- 2. TB: Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.2. Introduction to Algorithms, Thomas H.cormen,PHI Learning.

103.	Back tracking General method	14/02/20	
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104.	n-queen problem	15/02/20	Lecture interspersed with discussions
105.	Sum of subsets problem	17/02/20 18/02/20	
106.	Tutorial class	24/02/20	
107.	Graph coloring	25/02/20	
108.	Hamiltonian cycles	25/02/20 26/02/20	
109.	Back tracking General method	26/02/20 27/02/20	
110.	n-queen problem	14/02/20	
111.	Sum of subsets problem	15/02/20	
112.	<b>Tutorial</b>	17/02/20 18/02/20	

**UNIT –VI Branch and Bound**

**CO4:: FIFOBB algorithm.**

**TB:: Fundamentals of Computer Algorithms, Ellis Horowitz, SatrajSahni and Rajasekharan, Universities Press.**

**2. Introduction to Algorithms, Thomas H.cormen, PHI Learning.**

113.	Frequency management: Numbering and grouping	28/02/20	Lecture interspersed with discussions
114.	Branch and bound General method	29/02/20	
115.	Least Cost Search	29/02/20	
116.	Control Abstraction for LC Search, Bounding	03/03/20	
117.	FIFO branch and bound	04/03/20	
118.	LIFO branch and bound , LC Branch and Bound	04/03/20	
119.	Tutorial class	06/03/20 07/03/20	
120.	0/1 Knapsack Problem	07/03/20	
121.	LC Branch and Bound Solution	10/03/20	
122.	FIFO Branch and Bound Solution	11/03/20	
123.	Travelling Sales Person	13/03/20 17/03/20	
124.	<b>Tutorial</b>	17/03/20	

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## TENTATIVE LESSON PLAN: R1632054

### SOFTWARE TESTING METHODOLOGIES

<b>Course Title : SOFTWARE TESTING METHODOLOGIES</b>		
<b>Section : Sec A</b>	<b>Date : 18-11-19</b>	<b>Page No : 01 of 03</b>
<b>Revision No : 00</b>	<b>Prepared By : M. Anitha</b>	<b>Approved By : HOD</b>

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT –I INTRODUCTION TO SOFTWARE METHODOLOGIES</b>			
<b>CO1:: Will be able to understand the different testing techniques and the taxonomy of bugs</b>			
<b>TB: Software testing techniques – Boris Beizer, Dreamtech, second edition.</b>			
1.	Introduction	18/11/19	Lecture interspersed with discussions
2.	Purpose of testing	19/11/19	
3.	Goals of testing	21/11/19	
4.	Phases in tester's mental life	25/11/19	
5.	<i>Dichotomies</i>	26/11/19	
6.	<i>Dichotomies</i>	27/11/19	
7.	<i>Dichotomies</i>	28/11/19	
8.	Model of Testing	29/11/19	
9.	Model of Testing	30/11/19	
10.	<i>Consequences of bugs</i>	2/12/19	
11.	<i>Consequences of bugs</i>	3/12/19	
12.	<i>Taxonomy of bugs</i>	4/12/19	
13.	<i>Taxonomy of bugs</i>	5/12/19	
14.	<b>Tutorial</b>	6/12/19	
<b>UNIT –II FLOW GRAPHS AND PATH TESTING</b>			
<b>CO2:: Be acquainted with path testing and application of path testing</b>			
<b>TB: Software testing techniques – Boris Beizer, Dreamtech, second edition.</b>			
15.	Basics concepts of path testing Control Flow graphs Path testing Loops Effectiveness of path testing	10/12/19	Lecture
16.	Predicates, path predicates and achievable paths. Predicate Expression Testing Blindness	11/12/19	
17.	Path sensitizing	12/12/19	
18.	Path instrumentation	13/12/19	
19.	Application of path testing	16/12/19	



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20.	Transaction flows Definition Complications	17/12/19	interspersed with discussions
21.	Transaction flow testing techniques	18/12/19	
22.	Basics of dataflow testing	19/12/19	
23.	Data flow graphs	20/12/19	
24.	Strategies in dataflow testing	21/12/19	
25.	<b>Tutorial</b>	24/12/19	

**UNIT – III DIFFERENT TYPES OF TESTING**

**CO3:: Gain the knowledge of different types of testing and their applications**

**TB: Software testing techniques – Boris Beizer, Dreamtech, second edition.**

26.	Domain Testing:-domains and paths	26/12/19	Lecture interspersed with discussions
27.	Sensitization	27/12/19	
28.	Domains and paths	30/12/19	
29.	Path testing	31/12/19	
30.	Nice domains	2/1/20	
31.	Ugly domains	2/1/20	
32.	Domain testing	3/1/20	
33.	Domain testing	4/1/20	
34.	Interface testing	6/1/20	
35.	Domain testability	7/1/20	
36.	<b>Tutorial</b>	9/1/20	

**UNIT –IV PATH PRODUCTS AND REGULAR EXPRESSIONS**

**CO4:: Gain the knowledge of regular expressions**

**TB:: Software testing techniques – Boris Beizer, Dreamtech, second edition.**

37.	Paths, Path products	27/1/20	Lecture interspersed with discussions
38.	Regular expressions	28/1/20	
39.	path products & path expression,	31/1/20	
40.	Reduction procedure	3/2/20	
41.	Applications, regularexpressions	5/2/20	
42.	Flow anomaly detection	8/2/20	
43.	Logic Based Testing:- overview	11/2/20	
44.	Decision tables	13/2/20	
45.	Path expressions	14/2/20	
46.	kv charts, specifications	18/2/20	
47.	k-maps	24/2/20	





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48.	Tutorial	25/2/20	
<b>UNIT – V STATE GRAPHS AND MATRICES</b>			
<b>CO5 :: Obtain the knowledge about graph matrices and state graphs</b>			
<b>TB:: Software testing techniques – Boris Beizer, Dreamtech, second edition</b>			
No. of Periods	TOPIC	DATE	Mode of Delivery
49.	State, State Graphs	26/2/20	Lecture interspersed with discussions
50.	State graphs	28/2/20	
51.	Good & bad stategraphs	2/3/20	
52.	State testing	3/3/20	
53.	Testability tips	3/3/20	
54.	Transition testing	4/3/20	
55.	Examples	5/3/20	
56.	Graphs	6/3/20	
57.	Matrices	7/3/20	
58.	Matrix of a graph	8/3/20	
59.	Relations	9/3/20	
60.	Power of a matrix	10/3/20	
61.	Node reduction algorithm	10/3/20	
62.	Tutorial	11/3/20	
<b>UNIT - VI SOFTWARE TESTING TOOLS</b>			
<b>CO6 : Gain the knowledge of different software testing tools</b>			
<b>TB:: Software testing techniques – Boris Beizer, Dreamtech, second edition</b>			
63.	Tools like win runner, Jmeter,	12/3/20	Lecture interspersed with discussions
64.	load runner, Using win runner	13/3/20	
65.	mapping the GUI, recordtesting	14/3/20	
66.	Working with test, enhancingtest,	14/3/20	
67.	Check points, Test scriptLanguage	15/3/20	
68.	Running and debugging Tests, Analyzing results, Batch tests,Rapid test script wizard	16/3/20	
69.	Tutorial	18-3-20	

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## TENTATIVE LESSON PLAN: R1632054

### SOFTWARE TESTING METHODOLOGIES

<b>Course Title : SOFTWARE TESTING METHODOLOGIES</b>		
<b>Section : Sec B</b>	<b>Date : 18-11-19</b>	<b>Page No : 01 of 03</b>
<b>Revision No : 00</b>	<b>Prepared By : M. Anitha</b>	<b>Approved By : HOD</b>

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT –I INTRODUCTION TO SOFTWARE METHODOLOGIES</b>			
<b>CO1:: Will be able to understand the different testing techniques and the taxonomy of bugs</b>			
<b>TB: Software testing techniques – Boris Beizer, Dreamtech, second edition.</b>			
1.	Introduction	18/11/19	Lecture interspersed with discussions
2.	Purpose of testing	19/11/19	
3.	Goals of testing	21/11/19	
4.	Phases in tester's mental life	25/11/19	
5.	<i>Dichotomies</i>	26/11/19	
6.	<i>Dichotomies</i>	27/11/19	
7.	<i>Dichotomies</i>	28/11/19	
8.	Model of Testing	29/11/19	
9.	Model of Testing	30/11/19	
10.	<i>Consequences of bugs</i>	2/12/19	
11.	<i>Consequences of bugs</i>	3/12/19	
12.	<i>Taxonomy of bugs</i>	4/12/19	
13.	<i>Taxonomy of bugs</i>	5/12/19	
14.	<b>Tutorial</b>	6/12/19	
<b>UNIT –II FLOW GRAPHS AND PATH TESTING</b>			
<b>CO2:: Be acquainted with path testing and application of path testing</b>			
<b>TB: Software testing techniques – Boris Beizer, Dreamtech, second edition.</b>			
15.	Basics concepts of path testing Control Flow graphs Path testing Loops Effectiveness of path testing	10/12/19	Lecture
16.	Predicates, path predicates and achievable paths. Predicate Expression Testing Blindness	11/12/19	
17.	Path sensitizing	12/12/19	
18.	Path instrumentation	13/12/19	
19.	Application of path testing	16/12/19	



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20.	Transaction flows Definition Complications	17/12/19	interspersed with discussions
21.	Transaction flow testing techniques	18/12/19	
22.	Basics of dataflow testing	19/12/19	
23.	Data flow graphs	20/12/19	
24.	Strategies in dataflow testing	21/12/19	
25.	<b>Tutorial</b>	24/12/19	

**UNIT – III DIFFERENT TYPES OF TESTING**

**CO3:: Gain the knowledge of different types of testing and their applications**

**TB: Software testing techniques – Boris Beizer, Dreamtech, second edition.**

26.	Domain Testing:-domains and paths	26/12/19	Lecture interspersed with discussions
27.	Sensitization	27/12/19	
28.	Domains and paths	30/12/19	
29.	Path testing	31/12/19	
30.	Nice domains	2/1/20	
31.	Ugly domains	2/1/20	
32.	Domain testing	3/1/20	
33.	Domain testing	4/1/20	
34.	Interface testing	6/1/20	
35.	Domain testability	7/1/20	
36.	<b>Tutorial</b>	9/1/20	

**UNIT –IV PATH PRODUCTS AND REGULAR EXPRESSIONS**

**CO4:: Gain the knowledge of regular expressions**

**TB:: Software testing techniques – Boris Beizer, Dreamtech, second edition.**

37.	Paths, Path products	27/1/20	Lecture interspersed with discussions
38.	Regular expressions	28/1/20	
39.	path products & path expression,	31/1/20	
40.	Reduction procedure	3/2/20	
41.	Applications, regularexpressions	5/2/20	
42.	Flow anomaly detection	8/2/20	
43.	Logic Based Testing:- overview	11/2/20	
44.	Decision tables	13/2/20	
45.	Path expressions	14/2/20	
46.	kv charts, specifications	18/2/20	
47.	k-maps	24/2/20	



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48.	<b>Tutorial</b>	25/2/20	
<b>UNIT – V STATE GRAPHS AND MATRICES</b> <b>CO5 :: Obtain the knowledge about graph matrices and state graphs</b> <b>TB:: Software testing techniques – Boris Beizer, Dreamtech, second edition</b>			
No. of Periods	TOPIC	DATE	Mode of Delivery
49.	State, State Graphs	26/2/20	Lecture interspersed with discussions
50.	State graphs	28/2/20	
51.	Good & bad stategraphs	2/3/20	
52.	State testing	3/3/20	
53.	Testability tips	3/3/20	
54.	Transition testing	4/3/20	
55.	Examples	5/3/20	
56.	Graphs	6/3/20	
57.	Matrices	7/3/20	
58.	Matrix of a graph	8/3/20	
59.	Relations	9/3/20	
60.	Power of a matrix	10/3/20	
61.	Node reduction algorithm	10/3/20	
62.	<b>Tutorial</b>	11/3/20	
<b>UNIT - VI SOFTWARE TESTING TOOLS</b> <b>CO6 : Gain the knowledge of different software testing tools</b> <b>TB:: Software testing techniques – Boris Beizer, Dreamtech, second edition</b>			
63.	Tools like win runner, Jmeter,	12/3/20	Lecture interspersed with discussions
64.	load runner, Using win runner	13/3/20	
65.	mapping the GUI, recordtesting	14/3/20	
66.	Working with test, enhancingtest,	14/3/20	
67.	Check points, Test scriptLanguage	15/3/20	
68.	Running and debugging Tests, Analyzing results, Batch tests,Rapid test script wizard	16/3/20	
69.	<b>Tutorial</b>	18-3-20	

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

### TENTATIVE LESSON PLAN: R163205B

<b>Course Title : Internet Of Things</b>		
<b>Section : Sec A</b>	<b>Date : 18/11/19</b>	<b>Page No : 01 of 03</b>
<b>Revision No : 00</b>	<b>Prepared By : VENKATA MADHU B N</b>	<b>Approved By : HOD</b>

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
<p><b>UNIT –I The Internet of Things: An Overview of Internet of things</b>  <b>CO1:: Internet of Things Technology Behind IoTs</b>  <b>TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education</b></p>			
1.	<b>UNIT-1</b> The Internet of Things: An Overview of Internet of things	18/11/19, 20/11/19	Lecture interspersed with discussions
2.	Internet of Things Technology Behind IoTs	21/11/19	
3.	Sources of the IoTs	27/11/19	
4.	M2M Communication	25/11/19	
5.	Examples OF IoTs	26/11/19	
6.	Design Principles For Connected Devices	26/11/19	
7.	Tutorial	5/12/19	
<p><b>UNIT -II Business Models for Business Processes in the Internet of Things</b>  <b>CO2:: IoT/M2M systems LAYERS</b>  <b>AND designs standardizations ,Modified OSI Stack for the IoT/M2M Systems</b>  <b>TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education</b></p>			
8.	<b>UNIT-II:</b> Business Models for Business Processes in the Internet of Things	9/12/19	Lecture interspersed with discussions
9.	IoT/M2M systems LAYERS AND designs standardizations	10/12/19	
10.	Modified OSI Stack for the IoT/M2M Systems	11/12/19	
11.	ETSI M2M domains and High-level capabilities	12/12/19	
12.	Communication Technologies	16/12/19 17/12/19 17/12/19	
13.	Data Enrichment and Consolidation and Device Management	18/12/19	
14.	Gateway Ease of designing and affordability	19/12/19	



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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

15.	Tutorial	26/12/19	
<b>UNIT –III Design Principles for the Web Connectivity for connected-Devices</b> <b>CO3:: Web Communication</b> <b>protocols for Connected Devices, Message Communication protocols for Connected Devices</b> <b>TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education</b>			
16.	<b>UNIT-III:</b> Design Principles for the Web Connectivity for connected-Devices	30/12/19	Lecture interspersed with discussions
17.	Web Communication protocols for Connected Devices	31/12/19 31/12/19 2/1/20	
18.	Message Communication protocols for Connected Devices	7/1/20	
19.	Web Connectivity for connected-Devices	9/1/20	
20.	Tutorial	27/1/20	

### UNIT - IV Internet Connectivity Principles

**CO2:: Internet connectivity, Application Layer Protocols**

**TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education**

No. of Periods	TOPIC	DATE	Mode of Delivery
21.	<b>UNIT-IV</b> Internet Connectivity Principles	28/1/20	Lecture interspersed with discussions
22.	Internet connectivity	29/1/20, 30/1/20	
23.	Application Layer Protocols: HTTP	5/2/20, 11/2/20	
24.	HTTPS	12/2/20	
25.	FTP	13/2/20	
26.	Telnet	17/2/20	
27.	Tutorial	18/2/20	

### UNIT V– Data Acquiring, Organizing and Analytics in IoT/M2M

**CO3:: Applications/Services/Business Processes, IOT/M2M Data Acquiring and Storage**

**TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education**



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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

28.	<b>UNIT-V</b> Data Acquiring	25/2/20	Lecture interspersed with discussions
29.	Organizing and Analytics in IoT/M2M	2/3/20	
30.	Applications/Services/Business Processes	2/3/20	
31.	IOT/M2M Data Acquiring and Storage	3/3/20	
32.	Business Models for Business Processes in the Internet Of Things	3/3/20	
33.	Organizing Data	4/3/20	
34.	Transactions	4/3/20	
35.	Business Processes	5/3/20	
36.	Integration and Enterprise Systems.	9/3/20	
37.	Tutorial	10/3/20	

**UNIT VI–Data Collection, Storage and Computing Using a Cloud Platform for IoT/M2M Applications/Services**

**CO6:: Data Collection, Storage and Computing Using cloud platform**

**Everything as a service and Cloud Service Models**

**TB :: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education**

38.	<b>UNIT-VI</b> Data Collection	11/3/20	Lecture interspersed with discussions
39.	Storage and Computing Using a Cloud Platform for IoT/M2M Applications/Services	11/3/20	
40.	Data Collection	12/3/20	
41.	Storage and Computing Using cloud platform Everything as a service and Cloud Service Models	12/3/20	
42.	IOT cloud-based services using the Xively (Pachube/COSM)	13/3/20	
43.	Nimbits and other platforms Sensor	16/3/20	
44.	Participatory Sensing	16/3/20	
45.	Actuator	17/3/20	
46.	Radio Frequency Identification and Wireless	17/3/20	
47.	Sensor Network Technology	18/3/20	
48.	Sensors Technology	18/3/20	
49.	Sensing the World	19/3/20	
50.	Tutorial	20/3/20	

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## TENTATIVE LESSON PLAN: R163205B

<b>Course Title : Internet Of Things</b>		
<b>Section : Sec B</b>	<b>Date : 18/11/19</b>	<b>Page No : 01 of 03</b>
<b>Revision No : 00</b>	<b>Prepared By : VENKATA MADHU B N</b>	<b>Approved By : HOD</b>

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT –I The Internet of Things: An Overview of Internet of things</b> <b>CO1:: Internet of Things Technology Behind IoTs</b> <b>TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education</b>			
1.	<b>UNIT-1</b> The Internet of Things: An Overview of Internet of things	20/11/19, 21/11/19	Lecture interspersed with discussions
2.	Internet of Things Technology Behind IoTs	25/11/19	
3.	Sources of the IoTs	26/11/19	
4.	M2M Communication	27/11/19	
5.	Examples OF IoTs	27/11/19	
6.	Design Principles For Connected Devices	5/11/19	
7.	Tutorial	5/12/19	
<b>UNIT -II Business Models for Business Processes in the Internet of Things</b> <b>CO2:: IoT/M2M systems LAYERS</b> <b>AND designs standardizations ,Modified OSI Stack for the IoT/M2M Systems</b> <b>TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education</b>			
8.	<b>UNIT-II:</b> Business Models for Business Processes in the Internet of Things	9/12/19	Lecture interspersed with discussions
9.	IoT/M2M systems LAYERS AND designs standardizations	11/12/19	
10.	Modified OSI Stack for the IoT/M2M Systems	11/12/19	
11.	ETSI M2M domains and High-level capabilities	12/12/19	
12.	Communication Technologies	16/12/19 17/12/19 17/12/19	
13.	Data Enrichment and Consolidation and Device Management	18/12/19	
14.	Gateway Ease of designing and affordability	19/12/19	





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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

15.	Tutorial	26/12/19	
<b>UNIT –III Design Principles for the Web Connectivity for connected-Devices</b> <b>CO3:: Web Communication</b> <b>protocols for Connected Devices, Message Communication protocols for Connected Devices</b> <b>TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education</b>			
16.	<b>UNIT-III:</b> Design Principles for the Web Connectivity for connected-Devices	30/12/19	Lecture interspersed with discussions
17.	Web Communication protocols for Connected Devices	31/12/19 31/12/19 2/1/20	
18.	Message Communication protocols for Connected Devices	7/1/20	
19.	Web Connectivity for connected-Devices	9/1/20	
20.	Tutorial	27/1/20	

<b>UNIT - IV Internet Connectivity Principles</b> <b>CO2:: Internet connectivity, Application Layer Protocols</b> <b>TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education</b>			
No. of Periods	TOPIC	DATE	Mode of Delivery
21.	<b>UNIT-IV</b> Internet Connectivity Principles	28/1/20	Lecture interspersed with discussions
22.	Internet connectivity	29/1/20, 30/1/20	
23.	Application Layer Protocols: HTTP	5/2/20, 11/2/20	
24.	HTTPS	12/2/20	
25.	FTP	13/2/20	
26.	Telnet	17/2/20	
27.	Tutorial	18/2/20	
<b>UNIT V– Data Acquiring, Organizing and Analytics in IoT/M2M</b> <b>CO3:: Applications/Services/Business Processes, IOT/M2M Data Acquiring and Storage</b> <b>TB: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education</b>			



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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

28.	<b>UNIT-V</b> Data Acquiring	25/2/20	Lecture interspersed with discussions
29.	Organizing and Analytics in IoT/M2M	2/3/20	
30.	Applications/Services/Business Processes	2/3/20	
31.	IOT/M2M Data Acquiring and Storage	3/3/20	
32.	Business Models for Business Processes in the Internet Of Things	3/3/20	
33.	Organizing Data	4/3/20	
34.	Transactions	4/3/20	
35.	Business Processes	5/3/20	
36.	Integration and Enterprise Systems.	9/3/20	
37.	Tutorial	10/3/20	


**UNIT VI–Data Collection, Storage and Computing Using a Cloud Platform for IoT/M2M Applications/Services**

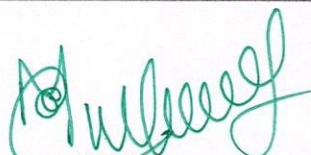
**CO6:: Data Collection, Storage and Computing Using cloud platform**

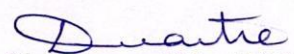
**Everything as a service and Cloud Service Models**

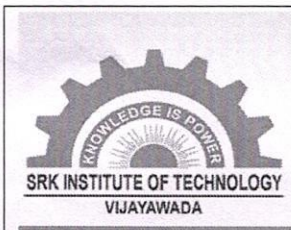
**TB :: Internet of Things: Architecture, Design Principles And Applications, Rajkamal, McGraw Hill Higher Education**

38.	<b>UNIT-VI</b> Data Collection	11/3/20	Lecture interspersed with discussions
39.	Storage and Computing Using a Cloud Platform for IoT/M2M Applications/Services	11/3/20	
40.	Data Collection	12/3/20	
41.	Storage and Computing Using cloud platform Everything as a service and Cloud Service Models	12/3/20	
42.	IOT cloud-based services using the Xively (Pachube/COSM)	13/3/20	
43.	Nimbits and other platforms Sensor	16/3/20	
44.	Participatory Sensing	16/3/20	
45.	Actuator	17/3/20	
46.	Radio Frequency Identification and Wireless	17/3/20	
47.	Sensor Network Technology	18/3/20	
48.	Sensors Technology	18/3/20	
49.	Sensing the World	19/3/20	
50.	Tutorial	20/3/20	

  
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### LESSON PLAN: R1642051

**Course Title: DISTRIBUTED SYSTEMS**

**Section: CSE**

**Date: 15-11-2019**

**Page No: 01 of 04**

**Revision No:**

**Prepared By: D V SUBBA RAO**

**Approved By: HOD**

**Tools: Black board, PPTs, Moodle**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-I Characterization of Distributed Systems, System Models</b>			
<b>CO1:</b>			
Develop a familiarity with distributed file systems			
<b>TEXTBOOK:</b>			
George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
1	Characterization of Distributed Systems	18.11.2019	Lecture interspersed with discussions
2	Examples of Distributed Systems	20.11.2019	
3	Trends in distributed systems	21.11.2019	
4	Resource Sharing and the Web	22.11.2019	
5	Challenges	26.11.2019	
6	<b>System Models:</b> Introduction	27.11.2019	
7	Architectural Models	28.11.2019	
8	Software Layers	29.11.2019	
9	System Architecture, variations	2.12.2019	
10	Interface and Objects	4.12.2019	
11	Design Requirements for Distributed Architectures	5.12.2019	
12,13	Fundamental Models-Interaction Model	6.12.2019	
13,14	Failure Model	10.12.2019	
15	Security Model	12.12.2019	
16	Tutorial classes	13.12.2019	

### **UNIT-II Interprocess Communication**

**CO2:**

Describe important characteristics of distributed systems and the salient architectural features of such systems

**TEXTBOOK:**

George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication

17	<b>Interprocess Communication:</b> Introduction	14.12.2019	Lecture interspersed with discussions
18,19	The API for the Internet Protocols: The Characteristics of Interprocess communication	16.12.2019	
20	Sockets	18.12.2019	
21	Udp datagram communication	19.12.2019	
22	TCP Stream Communication	20.12.2019	
23,24	External Data Representation and Marshalling;	21.12.2019	
25	Client Server Communication;	23.12.2019	

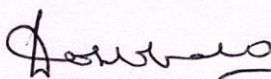
26,27	Group Communication- IP Multicast implementation of group communication	26.12.2019	
28	Reliability and Ordering of Multicast.	27.12.2019	
29	Tutorial classes	28.12.2019	

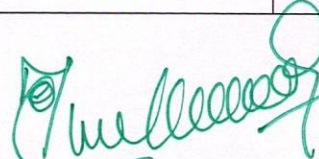
No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-III: Distributed Objects and Remote Invocation</b>			
<b>CO3:</b> Describe important characteristics of distributed systems and the salient architectural features of such systems			
<b>TEXTBOOK:</b> George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
30	<b>Distributed Objects and Remote Invocation:</b> Introduction	31.12.2019	Lecture interspersed with discussions
31	Communication between Distributed Objects- Object Model	2.1.2020	
32	Distributed Object Model	3.1.2020	
33	Design Issues for RMI	3.1.2020	
34,35	Implementation of RMI	4.1.2020	
36	Distributed Garbage Collection	4.1.2020	
37	Remote Procedure Call	7.1.2020	
38	Events and Notifications	9.1.2020	
39	Case Study: JAVA RMI	10.1.2020	
40	Tutorial classes	11.1.2020	

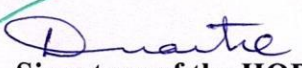
No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-IV Operating System Support</b>			
<b>CO4:</b> Describe the features and applications of important standard protocols which are used in distributed systems			
<b>TEXT BOOK:</b> George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
41	<b>Operating System Support:</b> Introduction	24.1.2020	Lecture interspersed with discussions
42	The Operating System Layer	28.1.2020	
43	Protection	01.02.2020	
44,45	Processes and Threads: –Address Space	05.02.2020	
46,47	Creation of a New Process	08.02.2020	
48	Threads.	12.02.2020	
49	Tutorial classes	15.02.2020	

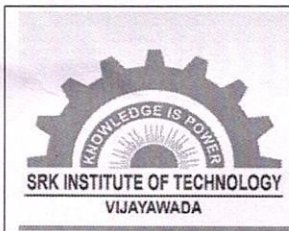
No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-V Distributed File Systems, Coordination and Agreement</b>			
<b>CO 5:</b>			
Describe the features and applications of important standard protocols which are used in distributed systems			
<b>TEXTBOOK:</b>			
George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
50	<b>Distributed File Systems:</b> Introduction	16.2.2020	Lecture interspersed with discussions
51	File Service Architecture	17.2.2020	
52	Peer-to-Peer Systems: Introduction	18.2.2020	
53	Napster and its Legacy	19.2.2020	
54	Peer-to-Peer Middleware	19.2.2020	
55	Routing Overlays	20.2.2020	
56	Tutorial classes	20.2.2020	
57	<b>Coordination and Agreement:</b> Introduction	21.2.2020	
58	Distributed Mutual Exclusion	24.2.2020	
59	Algorithm for Mutual Exclusion	25.2.2020	
60	Elections(ring based)	26.2.2020	
61	The Bully algorithm	27.2.2020	
62	Multicast Communication.	28.2.2020	
63	Ordered multicast	2.3.2020	
64	Tutorial classes	2.3.2020	

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-VI Transactions &amp; Replications</b>			
<b>CO6:</b>			
Gaining practical experience of inter process communication in a distributed environment.			
<b>TEXTBOOK:</b>			
George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
65	<b>Transactions &amp; Replications:</b> Introduction	5.3.2020	Lecture interspersed with discussions
66	System Model	6.3.2020	
67	Group Communication	10.3.2020	
68	Time ordering concurrency control	11.3.2020	
69	Optimistic concurrency control	12.3.2020	
70	Distributed Dead Locks	13.3.2020	
71	Transaction priorities	16.3.2020	
72	Transaction Recovery; Replication-Introduction	17.3.2020	
73	Passive (Primary) Replication	18.3.2020	
74	Active Replication.	19.3.2020	
75	Tutorial classes	20.3.2020	

  
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### LESSON PLAN: R1642051

<b>Course Title: DISTRIBUTED SYSTEM</b>		
<b>Section : CSE</b>	<b>Date :19-03-2020</b>	<b>Page No : 01 of 04</b>
<b>Revision No : 00</b>	<b>Prepared By : D V SUBBA RAO</b>	<b>Approved By : HOD</b>

**Tools : Black board, PPTs, Moodle**

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-I Characterization of Distributed Systems, System Models</b>			
<b>CO1:</b>			
Develop a familiarity with distributed file systems			
<b>TEXT BOOK:</b>			
George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
1	Characterization of Distributed Systems	18.11.2019	Lecture interspersed with discussions
2	Examples of Distributed Systems	20.11.2019	
3	Trends in distributed systems	21.11.2019	
4	Resource Sharing and the Web	22.11.2019	
5	Challenges	26.11.2019	
6	<b>System Models:</b> Introduction	27.11.2019	
7	Architectural Models	28.11.2019	
8	Software Layers	29.11.2019	
9	System Architecture, variations	2.12.2019	
10	Interface and Objects	4.12.2019	
11	Design Requirements for Distributed Architectures	5.12.2019	
12	Fundamental Models-Interaction Model	6.12.2019	
13	Failure Model	7.12.2019	
14	Security Model	10.12.2019	
15	Tutorial classes	10.12.2019	
No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-II Interprocess Communication</b>			
<b>CO2:</b>			
Describe important characteristics of distributed systems and the salient architectural features of such systems			
<b>TEXT BOOK:</b>			
George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
16	<b>Interprocess Communication:</b> Introduction	13.12.2019	Lecture interspersed with discussions
17	The API for the Internet Protocols: The Characteristics of Interprocess communication	16.12.2019	
18	Sockets	17.12.2019	
19	Udp datagram communication	18.12.2019	
20	TCP Stream Communication	19.12.2019	
21	External Data Representation and Marshalling;	20.12.2019	
22	Client Server Communication;	21.12.2019	

23,24	Group Communication- IP Multicast implementation of group communication	23.12.2019	
25	Reliability and Ordering of Multicast.	24.12.2019	
26	Tutorial classes	26.12.2019	
No. of Periods	TOPIC	Date	Mode of Delivery

### UNIT-III: Distributed Objects and Remote Invocation

#### CO3:

Describe important characteristics of distributed systems and the salient architectural features of such systems

#### TEXT BOOK:

George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication

27	<b>Distributed Objects and Remote Invocation:</b> Introduction	27.12.2019	Lecture interspersed with discussions
28	Communication between Distributed Objects- Object Model	30.12.2019	
29	Distributed Object Model	2.1.2020	
30	Design Issues for RMI	3.1.2020	
31	Implementation of RMI	3.1.2020	
32	Distributed Garbage Collection	4.1.2020	
33	Remote Procedure Call	4.1.2020	
34,35	Events and Notifications	7.1.2020	
36	Case Study: JAVA RMI	9.1.2020	
37	Tutorial classes	9.1.2020	
No. of Periods	TOPIC	Date	Mode of Delivery

### UNIT-IV Operating System Support

#### CO4:

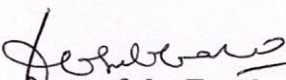
Describe the features and applications of important standard protocols which are used in distributed systems

#### TEXT BOOK:

George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication

38	<b>Operating System Support:</b> Introduction	27.1.2020	Lecture interspersed with discussions
39	The Operating System Layer	28.1.2020	
40	Protection	28.1.2020	
41	Processes and Threads: –Address Space	3.2.2020	
42,43	Creation of a New Process	4.2.2020	
44,45	Threads.	7.2.2020	
46	Tutorial classes	11.2.2020	

No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-V Distributed File Systems, Coordination and Agreement</b>			
<b>CO 5:</b>			
Describe the features and applications of important standard protocols which are used in distributed systems			
<b>TEXT BOOK:</b>			
George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
47	<b>Distributed File Systems:</b> Introduction	13.2.2020	Lecture interspersed with discussions
48	File Service Architecture	14.2.2020	
49	Peer-to-Peer Systems: Introduction	17.2.2020	
50	Napster and its Legacy	18.2.2020	
51	Peer-to-Peer Middleware	24.2.2020	
52	Routing Overlays	25.2.2020	
53	Tutorial classes	26.2.2020	
54	<b>Coordination and Agreement:</b> Introduction	27.2.2020	
55	Distributed Mutual Exclusion	28.2.2020	
56	Algorithm for Mutual Exclusion	2.3.2020	
57	Elections(ring based)	3.3.2020	
58	The Bully algorithm	4.3.2020	
59	Multicast Communication.	5.3.2020	
60	Ordered multicast	6.3.2020	
61	Tutorial classes	7.3.2020	
No. of Periods	TOPIC	Date	Mode of Delivery
<b>UNIT-VI Transactions &amp; Replications</b>			
<b>CO6:</b>			
Gaining practical experience of inter process communication in a distributed environment.			
<b>TEXT BOOK:</b>			
George Coulouris, Jean Dollimore, Tim Kindberg, "Distributed Systems- Concepts and Design", Fourth Edition, Pearson Publication			
62	<b>Transactions &amp; Replications:</b> Introduction	9.3.2020	Lecture interspersed with discussions
63	System Model	10.3.2020	
64	Group Communication	11.3.2020	
65	Time ordering concurrency control	11.3.2020	
66	Optimistic concurrency control	12.3.2020	
67	Distributed Dead Locks	13.3.2020	
68	Transaction priorities	13.3.2020	
69	Transaction Recovery; Replication-Introduction	16.3.2020	
70	Passive (Primary) Replication	16.3.2020	
71	Active Replication.	17.3.2020	
72	Tutorial classes	18.3.2020	

  
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**Department of computer science engineering**

**TENTATIVE LESSON PLAN**

**TENTATIVE LESSON PLAN**

**Course Title: MANAGEMENT SCIENCE(R1642052 )**

**Section: CSE - A**

**Date : 20-11-19**

**Page No : 01 of 02**

**Revision No : 00**

**Prepared By :G.KIRAN**

**Approved By : HOD**

**Tools: Black board**

No. of Periods (Actual Taken)	TOPIC	Date (Taught on)	Mode of Delivery
<b>UNIT –I Introduction to Management</b>			
<b>CO1::</b> Able to understand the concept and nature of management, evaluation of management theories, motivation and leadership styles			
<b>TB ::</b> Dr. A. R. Aryasri, Management Science' TMH 2011.			
1	Introduction to management	20-11-19	Lecture interspersed with Discussions
1	Nature & importance of management	23-11-19	
1	Generic function of management	24-11-19	
1	Evaluation of management thoughts	26-11-19	
1	Motivation theories	27-11-19	
1	Decision making process	28-11-19	
1	Designing organization structure	29-11-19	
1	Principles & types of organization	30-11-19	
1	Organization typology	01-12-19	
1	Global leadership	03-12-19	
1	Principals and types of management	04-12-19	
<b>UNIT –II : Operations Management</b>			
<b>CO2::</b> Able to equip with concepts of operations, project management and inventory control			
<b>TB ::</b> Dr. A. R. Aryasri, Management Science' TMH 2011.			
1	Work study	05-12-19	Lecture interspersed with discussions
1	Statistical quality control	06-12-19	
1	Control charts	14-12-19	
1	Problems On Control Charts	15-12-19	
1	Material Management	22-12-19	
1	Need For Inventory Control	28-12-19	
1	EOQ And ABC Analysis	02-1-20	
1	Problems On EOQ	04-01-20	
1	Other Methods Of EOQ	05-01-20	



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**TENTATIVE LESSON PLAN**

**UNIT-III: Functional management**

**CO3::** Able to understand the different functional areas in an organization and their responsibilities- product life cycle and channels of distribution

**TB ::** Dr. A. R. Aryasri, Management Science' TMH 2011

1	Concept of HRM,HRD and PMIR	05/01/20	Lecture interspersed with discussions
1	Functions of HRM	19-01-20	
1	Wage payment plans	19-01-20	
1	Job evolution Vs merit rating	21-01-20	
1	Marketing management functions	22-01-20	
1	Marketing strategies based on plc	23-01-20	
1	Channels of distribution	25-01-20	
1	Operational change management	29-01-20	
1	Functions of marketing	30-01-20	

**UNIT-IV:Project Management**

**CO4::** Able to equip with different techniques in project management, ie PERT and CPM and project crashing

**TB ::** Dr. A. R. Aryasri, Management Science' TMH 2011

1	Introduction to PERT and CPM	07-02-20	Lecture interspersed with discussions
1	Development of network diagram	08-02-20	
1	Difference between pert and CPM	13-02-20	
1	Identifying critical part	15-02-20	
1	probability	16-02-20	
1	Project crashing simple problems	20-02-20	
1	Problems	20-02-20	

**UNIT-V:Strategic Management**

**CO5::** Able to equip with the concept and practical issues relating to strategic management

**TB ::** Dr. A. R. Aryasri, Management Science' TMH 2011

1	Vision, mission, goals and strategy	22-02-20	Lecture interspersed with discussions
1	Elements of corporate planning process	23-02-20	
1	SWOT analysis	25-02-20	
1	Steps in strategic formulation and implementation	26-02-20	
1	Generic strategy and global strategy	27-02-20	
1	Theories of MNCs	01-03-20	
1	Environmental scanning	02-03-20	

**UNIT-VI: Contemporary Management Practices**

**CO6::** Able to equip with the contemporary management practices,

**TB::** Dr. A. R. Aryasri, Management Science' TMH 2011

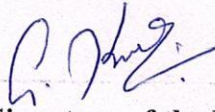
1	Basic concepts of MIS	05-03-20	Lecture interspersed with
1	Total quality management	06-03-20	
1	Six sigma	08-03-20	
1	Supply chain management	08-03-20	

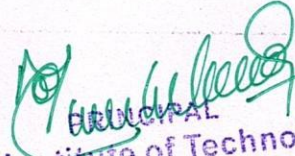


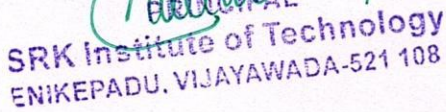
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**Enikepadu, Vijayawada 521108**  
**Department of computer science engineering**

**TENTATIVE LESSION PLAN**

1	Enterprise resource planning	11-03-20	discussions
1	Business process outsources	12-03-20	
1	Business process re-engineering	13-03-20	
1	Bench Marking	14-03-20	
1	Balanced Score Card	15-03-20	
1	Material Requirement Planning	16-03-20	
1	Total quality management	19-03-20	

  
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 Department of Computer Science and Engineering

## TENTATIVE LESSONPLAN: R1642053 MACHINE LEARNING

<b>Course Title: MACHINE LEARNING</b>		
<b>Section : CSE-A</b>	<b>Date : 18-11-2019</b>	<b>Page No : 01 of 04</b>
<b>Revision No : 00</b>	<b>Prepared by: Dr. D. HARITHA</b>	<b>Approved by : HOD</b>

**Tools: Black board, PPTs**

No. of periods	TOPIC	Date	Mode of Delivery
<b>UNIT-I</b>			
<b>The ingredients of machine learning, Tasks: the problems that can be solved with machine learning, Models: the output of machine learning, Features, the workhorses of machine learning. Binary classification and related tasks: Classification, Scoring and ranking, Class probability estimation</b>			
1	The ingredients of machine learning	18-11-2019	<b>Lecture interspersed with discussions</b>
2	The problems that can be solved with machine learning	19-11-2019	
3	The output of machine learning	20-11-2019	
4	Features	21-11-2019	
5	The workhorses of machine learning	23-11-2019	
6	Tutorial Class	25-11-2019	
7	Binary classification and	26-11-2019	
8	Related tasks	28-11-2019	
9	Classification	29-11-2019	
10	Scoring	02-12-2019	
11	Ranking	04-12-2019	
12	Class probability estimation	09-12-2019	
13	Tutorial Class	11-12-2019	
No. of periods	TOPIC	Date	Mode of Delivery
<b>UNIT-II:</b>			
<b>Beyond binary classification: Handling more than two classes, Regression, Unsupervised and descriptive learning. Concept learning: The hypothesis space, Paths through the hypothesis space, Beyond conjunctive concepts</b>			
14	<b>Beyond binary classification</b>	13-12-2019	<b>Lecture interspersed with</b>
15	Handling more than two classes	16-12-2019	
16	Regression	18-12-2019	



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17	Unsupervised Learning	19-12-2019	<b>discussions</b>
18	Descriptive learning	20-12-2019	
19	Tutorial class	23-12-2019	
20	Concept learning	24-12-2019	
21	The hypothesis space	26-12-2019	
22	Paths through the hypothesis space	27-12-2019	
23	Beyond conjunctive concepts	28-12-2019	
24	Tutorial classes	30-12-2019	
<b>No. of periods</b>	<b>TOPIC</b>	<b>Date</b>	<b>Mode of Delivery</b>

**UNIT-III:**

Tree models: Decision trees, Ranking and probability estimation trees, Tree learning as variance reduction. Rule models: Learning ordered rule lists, Learning unordered rule sets, Descriptive rule learning, First-order rule learning

25	Tree models	31-12-2019	<b>Lecture interspersed with discussions</b>
26	Decision trees	02-01-2020	
27	Ranking and probability estimation trees	03-01-2020	
28	Tree learning as variance reduction	04-01-2020	
29	Tutorial classes	06-01-2020	
30	Learning ordered rule lists	07-01-2020	
31	Learning unordered rule sets	08-01-2020	
32	Descriptive rule learning	09-01-2020	
33	First-order rule learning	10-01-2020	
34	Tutorial classes	11-01-2020	

**UNIT-IV:**

**Linear models:** The least-squares method, The perceptron: a heuristic learning algorithm for linear classifiers, Support vector machines, obtaining probabilities from linear classifiers, Going beyond linearity with kernel methods. **Distance Based Models:** Introduction, Neighbours and exemplars, Nearest Neighbours classification, Distance Based Clustering, Hierarchical Clustering.

<b>No. of periods</b>	<b>TOPIC</b>	<b>Date</b>	<b>Mode of Delivery</b>
35	The least-squares method	25-01-2020	<b>Lecture interspersed</b>
36	The perceptron: a heuristic learning algorithm for linear classifiers	27-01-2020	
37	Support vector machines	29-01-2020	
38	obtaining probabilities from linear classifiers	30-01-2020	
39	Going beyond linearity with kernel methods	03-02-2020	
40	Tutorial Classes	04-02-2020	
41	Distance Based Models: Introduction,	06-02-2020	



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	Neighbours and exemplars		<b>with discussions</b>
42	Nearest Neighbours classification	10-02-2020	
43	Distance Based Clustering	12-02-2020	
44	Hierarchical Clustering	14-02-2020	
45	Tutorial Classes	18-02-2020	

**UNIT- V:**

**Probabilistic models:** The normal distribution and its geometric interpretations, Probabilistic models for categorical data, Discriminative learning by optimising conditional likelihood  
**Probabilistic models with hidden variables.**  
**Features:** Kinds of feature, Feature transformations, Feature construction and selection. **Model ensembles:** Bagging and random forests, Boosting

No. of periods	TOPIC	Date	Mode of Delivery
46	The normal distribution and its geometric interpretations	19-02-2020	<b>Lecture interspersed with discussions</b>
47	Probabilistic models for categorical data	20-02-2020	
48	Discriminative learning by optimising conditional likelihood Probabilistic models with hidden variables	24-02-2020	
49	Tutorial Classes	26-02-2020	
50	Features: Kinds of feature	27-02-2020	
51	Feature transformations	28-02-2020	
52	Feature construction and selection	03-03-2020	
53	Model ensembles: Bagging	04-03-2020	
54	Random forests, Boosting	05-03-2020	
55	Tutorial Classes	06-03-2020	

**UNIT- VI:**

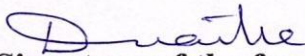
**Dimensionality Reduction:** Principal Component Analysis (PCA), Implementation and demonstration. **Artificial Neural Networks:** Introduction, Neural network representation, appropriate problems for neural network learning, Multilayer networks and the back propagation algorithm.

No. of periods	TOPIC	Date	Mode of Delivery
56	Dimensionality Reduction	07-03-2020	<b>Lecture</b>
57	Principal Component Analysis (PCA)	09-03-2020	




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58	Implementation	10-03-2020	<b>interspersed with discussions</b>
59	Demonstration	11-03-2020	
60	Artificial Neural Networks	12-03-2020	
61	Tutorial Classes	13-03-2020	
62	Neural network representation	14-03-2020	
63	appropriate problems for neural network learning	16-03-2020	
64	Multilayer networks and the back propagation algorithm	17-03-2020	
65	Tutorial Classes	19-03-2020	

  
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## TENTATIVE LESSONPLAN: R1642053 MACHINE LEARNING

<b>Course Title: MACHINE LEARNING</b>			
<b>Section : CSE-B</b>	<b>Date : 18-11-2019</b>	<b>Page No : 01 of 04</b>	
<b>Revision No : 00</b>	<b>Prepared by: N. SUDHAKAR REDDY</b>	<b>Approved by : HOD</b>	
<b>Tools: Black board, PPTs</b>			
No. of periods	TOPIC	Date	Mode of Delivery
<b>UNIT-I</b>			
<b>The ingredients of machine learning, Tasks: the problems that can be solved with machine learning, Models: the output of machine learning, Features, the workhorses of machine learning. Binary classification and related tasks: Classification, Scoring and ranking, Class probability estimation</b>			
1	The ingredients of machine learning	18-11-2019	<b>Lecture interspersed with discussions</b>
2	The problems that can be solved with machine learning	19-11-2019	
3	The output of machine learning	20-11-2019	
4	Features	21-11-2019	
5	The workhorses of machine learning	23-11-2019	
6	Tutorial Class	25-11-2019	
7	Binary classification and	28-11-2019	
8	Related tasks	28-11-2019	
9	Classification	29-11-2019	
10	Scoring	02-12-2019	
11	Ranking	04-12-2019	
12	Class probability estimation	09-12-2019	
13	Tutorial Class	11-12-2019	
No. of periods	TOPIC	Date	Mode of Delivery
<b>UNIT-II:</b>			
<b>Beyond binary classification: Handling more than two classes, Regression, Unsupervised and descriptive learning. Concept learning: The hypothesis space, Paths through the hypothesis space, Beyond conjunctive concepts</b>			
14	<b>Beyond binary classification</b>	13-12-2019	<b>Lecture interspersed with</b>
15	Handling more than two classes	16-12-2019	
16	Regression	18-12-2019	





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17	Unsupervised Learning	19-12-2019	<b>discussions</b>
18	Descriptive learning	20-12-2019	
19	Tutorial class	23-12-2019	
20	Concept learning	24-12-2019	
21	The hypothesis space	26-12-2019	
22	Paths through the hypothesis space	27-12-2019	
23	Beyond conjunctive concepts	28-12-2019	
24	Tutorial classes	30-12-2019	
<b>No. of periods</b>	<b>TOPIC</b>	<b>Date</b>	<b>Mode of Delivery</b>
<b>UNIT-III:</b>			
Tree models: Decision trees, Ranking and probability estimation trees, Tree learning as variance reduction. Rule models: Learning ordered rule lists, Learning unordered rule sets, Descriptive rule learning, First-order rule learning			
25	Tree models	31-12-2019	<b>Lecture interspersed with discussions</b>
26	Decision trees	02-01-2020	
27	Ranking and probability estimation trees	03-01-2020	
28	Tree learning as variance reduction	04-01-2020	
29	Tutorial classes	06-01-2020	
30	Learning ordered rule lists	07-01-2020	
31	Learning unordered rule sets	08-01-2020	
32	Descriptive rule learning	09-01-2020	
33	First-order rule learning	10-01-2020	
34	Tutorial classes	11-01-2020	
<b>UNIT-IV:</b>			
Linear models: The least-squares method, The perceptron: a heuristic learning algorithm for linear classifiers, Support vector machines, obtaining probabilities from linear classifiers, Going beyond linearity with kernel methods. Distance Based Models: Introduction, Neighbours and exemplars, Nearest Neighbours classification, Distance Based Clustering, Hierarchical Clustering.			
<b>No. of periods</b>	<b>TOPIC</b>	<b>Date</b>	<b>Mode of Delivery</b>
35	The least-squares method	25-01-2020	<b>Lecture interspersed</b>
36	The perceptron: a heuristic learning algorithm for linear classifiers	27-01-2020	
37	Support vector machines	29-01-2020	
38	obtaining probabilities from linear classifiers	30-01-2020	
39	Going beyond linearity with kernel methods	03-02-2020	
40	Tutorial Classes	05-02-2020	
41	Distance Based Models: Introduction,	06-02-2020	



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	Neighbours and exemplars		<b>with discussions</b>
42	Nearest Neighbours classification	10-02-2020	
43	Distance Based Clustering	12-02-2020	
44	Hierarchical Clustering	14-02-2020	
45	Tutorial Classes	18-02-2020	

**UNIT- V:**

**Probabilistic models:** The normal distribution and its geometric interpretations, Probabilistic models for categorical data, Discriminative learning by optimising conditional likelihood  
**Probabilistic models with hidden variables.**  
**Features:** Kinds of feature, Feature transformations, Feature construction and selection. **Model ensembles:** Bagging and random forests, Boosting

No. of periods	TOPIC	Date	Mode of Delivery
46	The normal distribution and its geometric interpretations	19-02-2020	<b>Lecture interspersed with discussions</b>
47	Probabilistic models for categorical data	20-02-2020	
48	Discriminative learning by optimising conditional likelihood Probabilistic models with hidden variables	24-02-2020	
49	Tutorial Classes	26-02-2020	
50	Features: Kinds of feature	27-02-2020	
51	Feature transformations	28-02-2020	
52	Feature construction and selection	03-03-2020	
53	Model ensembles: Bagging	04-03-2020	
54	Random forests, Boosting	05-03-2020	
55	Tutorial Classes	06-03-2020	

**UNIT- VI:**

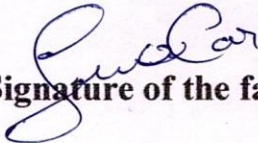
**Dimensionality Reduction:** Principal Component Analysis (PCA), Implementation and demonstration. **Artificial Neural Networks:** Introduction, Neural network representation, appropriate problems for neural network learning, Multilayer networks and the back propagation algorithm.

No. of periods	TOPIC	Date	Mode of Delivery
56	Dimensionality Reduction	07-03-2020	<b>Lecture</b>
57	Principal Component Analysis (PCA)	09-03-2020	



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58	Implementation	10-03-2020	<b>interspersed with discussions</b>
59	Demonstration	11-03-2020	
60	Artificial Neural Networks	12-03-2020	
61	Tutorial Classes	13-03-2020	
62	Neural network representation	14-03-2020	
63	appropriate problems for neural network learning	16-03-2020	
64	Multilayer networks and the back propagation algorithm	17-03-2020	
65	Tutorial Classes	19-03-2020	

  
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## TENTATIVE LESSON PLAN: R164205C

### OPERATIONAL RESEARCH

<b>Course Title: Operational Research</b>		
<b>Section: Sec1</b>	<b>Date: 17/11/19</b>	<b>Page No: 01 of 04</b>
<b>Revision No: 00</b>	<b>Prepared By: A. RADHIKA</b>	<b>Approved By: HOD</b>

**Tools: Black Board, PPTs**

<b>No. of Periods</b>	<b>Topic</b>	<b>Date</b>	<b>Mode of Delivery</b>
<b>Unit-1: Introduction To Operations Research</b>			
<b>CO1: Identify and develop operational research models from the verbal description of the real system.</b>			
<b>TB:” P. Sankara Iyer,”Operations Research”, Tata McGraw-Hill, 2008 “</b>			
1	<b>Introduction To Operations Research</b>	<b>19/11/19</b>	<b>Lecture interspersed with discussions</b>
2	Scope and objectives of OR	<b>20/11/19</b>	
3	Phases of OR	<b>21/11/19</b>	
4	Models of OR	<b>25/11/19</b>	
5	Limitations of OR	<b>26/11/19</b>	
6	Linear Programming Formulation	<b>27/11/19</b>	
7	Linear Programming Problem	<b>28/11/19</b>	
8	Graphical Solution of LPP	<b>29/11/19</b>	
9	Simplex method	<b>30/11/19</b>	
10	Artificial v Variables	<b>2/12/19</b>	
11	Big-M Method	<b>3/12/19</b>	
12	Two Phase method	<b>4/12/19</b>	
13	Degenracy	<b>5/12/19</b>	
14	Unbound Solution	<b>6/12/19</b>	
15	Tutorial	<b>7/12/19</b>	
<b>UNIT-II: Transportation Problem</b>			
<b>CO2: Understand the mathematical tools that are needed to solve optimization problems for transportation problem</b>			
<b>TB:” P. Sankara Iyer,” Operations Research”, Tata McGraw-Hill, 2008 “</b>			
1	<b>Transportation Problem</b>	<b>10/12/19</b>	
2	Formulation	<b>11/12/19</b>	

3	Balanced Transportation Problem	12/12/19	<b>Lecture interspersed with discussions</b>
4	Unbalanced Transportation Problem.	13/12/19	
5	<b>Finding Basic Feasible Solutions:</b> Northwest Corner Rule	16/12/19	
6	Least Cost Method	17/12/19	
7	Vogel's Approximation Method	18/12/19	
8	Optimality Test: The Stepping stone Method	19/12/19	
9	MODI Method	20/12/19	
10	Tutorial	21/12/19	

**UNIT-III: Assignment Model**

**CO3: Understand the mathematical tools that are needed to solve optimization problems for Assignment model**

**TB:” P. Sankara Iyer,” Operations Research”, Tata McGraw-Hill, 2008 “**

1	<b>Assignment Model</b>	24-12-19	<b>Lecture interspersed with discussions</b>
2	Formulation	26-12-19	
3	Hungarian Method For Optimal Solution	27-12-19	
4	Solving Unbalanced Problem	30-12-19	
5	Traveling Salesman Problem And Assignment Problem	31-12-19	
6	Sequencing Models	2-1-20	
7	Solution Of Sequencing Problem	2-1-20	
8	Processing N Jobs Through 2 Machines	3-1-20	
9	Processing N Jobs Through 3Machines	4-1-20	
10	Processing 2 Jobs Through M Machines	6-1-20	
11	Processing N Jobs Through M Machines	7-1-20	
12	TUTORIAL	9-1-20	

**UNIT-IV: Dynamic Programming**

**CO4: Understand the Dynamic Programming problems and game theory Problems**

**TB:” P. Sankara Iyer,”Operations Research”, Tata McGraw-Hill, 2008 “**

1	<b>UNIT-IV: Dynamic Programming</b>	<b>27/1/20</b>	<b>Lecture interspersed with discussions</b>
2	Characteristics Of Dynamic Programming	<b>28/1/20</b>	
3	Dynamic Programming Approach For Priority Management	<b>31/1/20</b>	
4	Employment Smoothing	<b>3/2/20</b>	
5	Capital Budgeting	<b>5/2/20</b>	
6	Stage Coach/Shortest Path	<b>8/2/20</b>	
7	Cargo Loading And Reliability Problems	<b>11/2/20</b>	
8	Games Theory.	<b>13/2/20</b>	
9	Competitive Games	<b>14/2/20</b>	
10	Rectangular Game	<b>18/2/20</b>	
11	Saddle Point	<b>24/2/20</b>	
12	Minimax (Maximin) Method Of Optimal Strategies	<b>25/2/20</b>	
13	Value Of The Game	<b>26/2/20</b>	
14	Solution Of Games With Saddle Point	<b>28/2/20</b>	
15	Dominance Principle	<b>27/1/20</b>	
16	Rectangular Games Without Saddle Point .	<b>2/3/20</b>	
17	Mixed Strategy For 2 X 2 Games	<b>3/3/20</b>	
18	Tutorial	<b>2/3/20</b>	
<b>UNIT-V: Replacement Models</b>			
<b>CO5: Understand the Replacement problems</b>			
<b>TB:" P. Sankara Iyer,"Operations Research", Tata McGraw-Hill, 2008 "</b>			
1	<b>Replacement Models</b>	<b>5/3/20</b>	<b>Lecture interspersed with discussions</b>
2	Replacement Of Items That Deteriorate Whose Maintenance Costs Increase With Time Without Change In The Money Value.	<b>6/3/20</b>	
3	Replacement Of Items That Fail Suddenly	<b>7/3/20</b>	
4	Individual Replacement Policy	<b>8/3/20</b>	
5	Group Replacement Policy	<b>9/3/20</b>	
6	Tutorial	<b>10/3/20</b>	

<b>UNIT-VI: Inventory Models</b> <b>CO6: Understand Inventory Models</b> <b>TB:” P. Sankara Iyer,”Operations Research”, Tata McGraw-Hill, 2008 “</b>			
1	<b>Inventory Models</b>	<b>10/3/20</b>	<b>Lecture interspersed with discussions</b>
2	Inventory Costs	<b>11/3/20</b>	
3	Models With Deterministic Demand-Model	<b>12/3/20</b>	
4	(A) Demand Rate Uniform And Production Rate Infinite, Model	<b>13/3/20</b>	
5	(B) Demand Rate Non-Uniform	<b>14/3/20</b>	
6	Production Rate infinite, Model	<b>14/3/20</b>	
7	Demand Rate Uniform	<b>15/3/20</b>	
8	Production Rate Finite	<b>16/3/20</b>	
9	Tutorial	<b>17/3/19</b>	

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## TENTATIVE LESSON PLAN: R164205C

### OPERATIONAL RESEARCH

<b>Course Title: Operational Research</b>		
<b>Section:Sec2</b>	<b>Date:17/11/19</b>	<b>Page No: 01 of 04</b>
<b>Revision No: 00</b>	<b>Prepared By: A. RADHIKA</b>	<b>Approved By: HOD</b>

**Tools: Black Board, PPTs**

<b>No. of Periods</b>	<b>Topic</b>	<b>Date</b>	<b>Mode of Delivery</b>
<b>Unit-1: Introduction To Operations Research</b>			
<b>CO1: Identify and develop operational research models from the verbal description of the real system.</b>			
<b>TB:" P. Sankara Iyer,"Operations Research", Tata McGraw-Hill, 2008 "</b>			
1	<b>Introduction To Operations Research</b>	<b>19/11/19</b>	<b>Lecture interspersed with discussions</b>
2	Scope and objectives of OR	<b>20/11/19</b>	
3	Phases of OR	<b>21/11/19</b>	
4	Models of OR	<b>25/11/19</b>	
5	Limitations of OR	<b>26/11/19</b>	
6	Linear Programming Formulation	<b>27/11/19</b>	
7	Linear Programming Problem	<b>28/11/19</b>	
8	Graphical Solution of LPP	<b>29/11/19</b>	
9	Simplex method	<b>30/11/19</b>	
10	Artificial vVariables	<b>2/12/19</b>	
11	Big-M Method	<b>3/12/19</b>	
12	Two Phase method	<b>4/12/19</b>	
13	Degenracy	<b>5/12/19</b>	
14	Unbound Solution	<b>6/12/19</b>	
15	Tutorial	<b>7/12/19</b>	
<b>UNIT-II: Transportation Problem</b>			
<b>CO2: Understand the mathematical tools that are needed to solve optimization problems for transportation problem</b>			
<b>TB:" P. Sankara Iyer," Operations Research", Tata McGraw-Hill, 2008 "</b>			
1	<b>Transportation Problem</b>	<b>10/12/19</b>	
2	Formulation	<b>11/12/19</b>	



3	Balanced Transportation Problem	12/12/19	Lecture interspersed with discussions
4	Unbalanced Transportation Problem.	13/12/19	
5	<b>Finding Basic Feasible Solutions:</b> Northwest Corner Rule	16/12/19	
6	Least Cost Method	17/12/19	
7	Vogel's Approximation Method	18/12/19	
8	Optimality Test: The Stepping stone Method	19/12/19	
9	MODI Method	20/12/19	
10	Tutorial	21/12/19	

**UNIT-III: Assignment Model**

**CO3: Understand the mathematical tools that are needed to solve optimization problems for Assignment model**

**TB:" P. Sankara Iyer," Operations Research", Tata McGraw-Hill, 2008 "**

1	<b>Assignment Model</b>	24-12-19	Lecture interspersed with discussions
2	Formulation	26-12-19	
3	Hungarian Method For Optimal Solution	27-12-19	
4	Solving Unbalanced Problem	30-12-19	
5	Traveling Salesman Problem And Assignment Problem	31-12-19	
6	Sequencing Models	2-1-20	
7	Solution Of Sequencing Problem	2-1-20	
8	Processing N Jobs Through 2 Machines	3-1-20	
9	Processing N Jobs Through 3Machines	4-1-20	
10	Processing 2 Jobs Through M Machines	6-1-20	
11	Processing N Jobs Through M Machines	7-1-20	
12	TUTORIAL	9-1-20	

**UNIT-IV: Dynamic Programming**

**CO4: Understand the Dynamic Programming problems and game theory Problems**

**TB:" P. Sankara Iyer,"Operations Research", Tata McGraw-Hill, 2008 "**

1	<b>UNIT-IV: Dynamic Programming</b>	<b>27/1/20</b>	<b>Lecture interspersed with discussions</b>
2	Characteristics Of Dynamic Programming	<b>28/1/20</b>	
3	Dynamic Programming Approach For Priority Management	<b>31/1/20</b>	
4	Employment Smoothing	<b>3/2/20</b>	
5	Capital Budgeting	<b>5/2/20</b>	
6	Stage Coach/Shortest Path	<b>8/2/20</b>	
7	Cargo Loading And Reliability Problems	<b>11/2/20</b>	
8	Games Theory.	<b>13/2/20</b>	
9	Competitive Games	<b>14/2/20</b>	
10	Rectangular Game	<b>18/2/20</b>	
11	Saddle Point	<b>24/2/20</b>	
12	Minimax (Maximin) Method Of Optimal Strategies	<b>25/2/20</b>	
13	Value Of The Game	<b>26/2/20</b>	
14	Solution Of Games With Saddle Point	<b>28/2/20</b>	
15	Dominance Principle	<b>27/1/20</b>	
16	Rectangular Games Without Saddle Point .	<b>2/3/20</b>	
17	Mixed Strategy For 2 X 2 Games	<b>3/3/20</b>	
18	Tutorial	<b>2/3/20</b>	
<b>UNIT-V: Replacement Models</b>			
<b>CO5: Understand the Replacement problems</b>			
<b>TB:” P. Sankara Iyer,”Operations Research”, Tata McGraw-Hill, 2008 ”</b>			
1	<b>Replacement Models</b>	<b>5/3/20</b>	<b>Lecture interspersed with discussions</b>
2	Replacement Of Items That Deteriorate Whose Maintenance Costs Increase With Time Without Change In The Money Value.	<b>6/3/20</b>	
3	Replacement Of Items That Fail Suddenly	<b>7/3/20</b>	
4	Individual Replacement Policy	<b>8/3/20</b>	
5	Group Replacement Policy	<b>9/3/20</b>	
6	Tutorial	<b>10/3/20</b>	

**UNIT-VI: Inventory Models****CO6: Understand Inventory Models****TB:” P. Sankara Iyer,”Operations Research”, Tata McGraw-Hill, 2008 “**

1	<b>Inventory Models</b>	<b>10/3/20</b>	<b>Lecture interspersed with discussions</b>
2	Inventory Costs	<b>11/3/20</b>	
3	Models With Deterministic Demand-Model	<b>12/3/20</b>	
4	(A) Demand Rate Uniform And Production Rate Infinite, Model	<b>13/3/20</b>	
5	(B) Demand Rate Non-Uniform	<b>14/3/20</b>	
6	Production Rate infinite, Model	<b>14/3/20</b>	
7	Demand Rate Uniform	<b>15/3/20</b>	
8	Production Rate Finite	<b>16/3/20</b>	
9	Tutorial	<b>17/3/19</b>	

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