J.B. INSTITUTE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

		ACADEMIC YEAR	2013-14

COURSE PLAN

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department: **Information Technology(IT)**

COURSE DETAILS

Name Of The Programme:: **B.Tech(I/IV)**   Batch:: **2013-14**

Year: **First Year**   Semester: **-----**
Department:: **Civil**
Title of The Subject: **C Programming and   Subject Code: 6751005
Data   Structures**
No of Students: **60**

	COURSE PLAN	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**

1. TARGET

    a) Percentage Pass   **100**

    b) Percentage I class   **80**

2. COURSE PLAN

(Please write how you intend to cover the contents: i.e., coverage of Units by lectures, guest lectures, design exercises, solving numerical problems, demonstration of models, model preparation, or by assignments, etc.)

3. METHOD OF EVALUATION

    3.1. ☐ Continuous Assessment Examinations (CAE 1, CAE 2)

    3.2. ☐ Assignments / Seminars

    3.3. ☐ Mini Projects

    3.4. ☐ Quiz

    3.5. ☐ Term End Examination

    3.6. ☐ Others

4. List out any new topic(s) or any innovation you would like to introduce in teaching the subject in this Semester.

Signature of HOD   Signature of Faculty
Date: Date:

	GUIDELINES TO STUDY THE SUBJECT	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**

Designation: **Assistant Professor**

Department:: **Information Technology(IT)**

Guidelines for Preparing the Course:

Course Description:
This course provides students with a comprehensive study of the C programming language. Classroom lectures stress the strengths of C, which provide programmers with the means of writing efficient, maintainable, and portable code.

Course Objectives:
1.understand the basic terminology used in computer programming *2. write*, *compile* and *debug* programs in C language. *3. Use* different data types in a computer program. *4. Design* programs involving decision structures, loops and functions. *5.explain* the difference between call by value and call by reference *6. Understand* the dynamics of memory by the use of pointers. 7. *Use* different data structures and create/update basic data files.

Learning Outcomes:
Learning Outcomes: - Learn how to program in C; - Learn about program flow; - Learn about functions, methods and routines; - How to use arguments and return values; - How to run a simple C program; - Understand the basics of numeric overflow; - Understand how numbers are encoded as characters in ASCII; - Learn about the connection between function return values and variables; - Learn about variables when programming in C; - Understand the use of arrays and pointers;- Understand the concept of control flow; - Learn more about the use of statements and logic in C programming; - Understand the mechanisms for controlling flow statements; - Learn how to implement simple statements in C; - Learn more about logical operators such as OR, GOTO and the While loop;- Using pointers for direct memory access and manipulation in C; - How to change the memory address contained within a pointer; - Understand why you need to learn pointers; - Learn more about the char pointer; - Introduce constants and string literals in C; - Introduce the character string as an array of characters in C. *Use* different data structures and create/update basic data files.

<table>
<tr><td colspan="2"></td><td>2013-14</td></tr>
<tr><td></td><td>**COURSE OBJECTIVES**</td><td rowspan="2">Regulation: R11</td></tr>
</table>

	COURSE OBJECTIVES	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**

On completion of this Subject / Course the student shall be able to:

S.No.	Objectives	Outcomes
1.	Explain the basic concepts of problem solving.	
2.	List the steps involved in program development	
3.	List the advantages of top down programming	
4.	Explain the evolution of c language	
5.	List the features of c language	
6.	Describe the structure of c program	
7.	Explain the basic elements of c language	
8.	Explain the syntax of selection statement	
9.	Explain the syntax of control structures	
10	Explain various string functions	
11	Explain the significance of pointers	
12	Explain the syntax of using pointers	

13		Explain the need for user defined functions	
14		Differentiate between call by value and call by reference	
15		Explain the concept of recursion	
16		Explain the syntax for using command line arguments	
17		Explain the concept of structure and union	
18		List the advantages of structures over unions	
19		Explain typedef statement	
20		Explain the concept of file and its types.	
21		List the basic file operations	
22		Explain how to access files in both sequential and random order	
23		Define pre-processor directive	
24			

Signature of Faculty
Date:

Note: For each of the OBJECTIVE indicate the appropriate OUTCOMES to be achieved.
Kindly refer Page 16, to know the illustrative verbs that can be used to state the objectives.

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**

The expected outcomes of the Course / Subject are:

S.No.	General Categories of Outcomes	Specific Outcomes of the Course
A.	An ability to apply knowledge of mathematics, science, and engineering	
B.	An ability to design and conduct experiments, as well as to analyze and interpret data	
C.	An ability to design a system, component, or process to meet desired needs within realistic Constraints such as economic, environmental, social, political, ethical, health and safety, Manufacturability and sustainability	
D.	An ability to function on multi-disciplinary teams	
E.	An ability to identify, formulate, and solve engineering problems	
F.	An understanding of professional and ethical responsibility	
G.	An ability to communicate effectively	
H.	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
I.	A recognition of the need for, and an ability to engage in life-long learning	
J.	A knowledge of contemporary issues	
K.	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	

Objectives – Outcome Relationship Matrix (Indicate the relationships by ☒ mark)**.**

Objectives \ Outcomes	A	B	C	D	E	F	G	H	I	J	K
1.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

		2013-14
	COURSE SCHEDULE	
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**
The Schedule for the whole Course / Subject is::

S. No.	Description	Duration (Date)		Total No. of Periods
		From	To	
1.	Introduction to Computers	1/10/2013	22/10/2013	10
2.	Introduction to C language	23/10/2013	26/11/2013	20
3.	Functions and Arrays	26/11/2013	9/01/2014	20
4.	Pointers and Strings	21/01/2014	4/2/2014	15
5.	Structures and Unions	5/2/2014	20/02/2014	15
6.	Input and Output-Concept of Files			10
7	Searching and Sorting			10
8	Data Structures			20

Total No. of Instructional periods available for the course: Hours / Periods   120

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**
The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No___ to ___
1	1/10/13	1	Introduction to Computers		1-1
2	1/10/13	1	computer systems		1-3
3	3/10/13	1	Computing Environments		4-5
4	8/10/13	1	Computer languages		6-8
5	8/10/13	1	Creating and running programmes		8-10
6	9/10/13	1	Software Development Method		10-13
7	10/10/13	1	Algorithms		14-14
8	17/10/13	1	Pseudo code		14-14
9	22/10/13	1	flowcharts		14-27
10	22/10/13	1	Applying the software development method		27-28

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
3. MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	23/10/13	1	Introduction to c language-Background		32-33
2	24/10/13	1	Simple C programme		34-37
3	29/10/13	1	identifiers		38-40
4	29/10/13	1	Basic data types		40-44
5	30/10/13	1	Varaiable,Constants		44-48,48-53
6	31/10/13	1	Input/output functions		53-66
7	5/11/13	1	Operators		129-142,165-169
8	5/11/13	1	Precedence and Associativity		95-98
9	6/11/13	1	Expression Evalution		99-101
10	7/11/13	1	Type conversions		102-106
11	12/11/13	1	Bit wise operators		129-142
12	12/11/13	1	Statements, Simple C Programming Examples		107-111,111-120
13	13/11/13	1	Selection statement- If and Switch Statements		169-184,184-193

14	14/11/13	1	Repetition Statement-while		225-230
15	19/11/13	1	For, do-while statements		230-239
16	19/11/13	1	Loop examples		239-251
17	20/11/13	1	Other Statements related to looping-break		251-252
18	21/11/13	1	Continue, goto		253-253
19	26/11/13	1	Continue, goto		253-253
20	26/11/13	1	Simple C Programming examples		253-263

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
     2.   ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	27/11/13	1	Designing Structured Programmes, Functions, basics		279-283
2	28/11/13	1	User defined functions		283-301
3	3/12/13	1	Inter function communication		301-310
4	3/12/13	1	Standard functions		310-320
5	4/12/13	1	Scope		320-322
6	17/12/13	1	Storage classes-auto, register		322-332
7	17/12/13	1	Storage classes- static, extern		322-332
8	18/12/13	1	Scope rules		320-332
9	19/12/13	1	Type qualifiers		329-332
10	24/12/13	1	Recursion- recursive functions		337-347
11	24/12/13	1	Pre-processor commands		347-363
12	26/12/13	1	Example C programmes		363-369
13	31/12/13	1	Arrays – Concepts		388-390

14	31/12/13	1	Using arrays in C		391-400
15	7/1/14	1	Inter function communication		400-406
16	7/1/14	1	Array applications		406-414
17	8/1/14	1	Two – dimensional arrays		415-423
18	9/1/14	1	Two – dimensional arrays		415-423
19	21/1/14	1	Multidimensional arrays		424-425
20	21/1/14	1	C programme examples.		426-433

Signature of Faculty
Date

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MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

<table>
<tr><td colspan="2"></td><td>SCHEDULE OF INSTRUCTIONS

UNIT - IV</td><td>2013-14

Regulation: R11</td></tr>
</table>

FACULTY DETAILS:

Name of the Faculty::	**E Vishnu vardhan**
Designation:	**Assistant Professor**
Department::	**Information Technology(IT)**

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	21/1/14	1	Pointers – Introduction (Basic Concepts)		443-456
2	21/1/14	1	Pointers for inter function communication		456-459
3	21/1/14	1	Pointers to pointers		459-461
4	21/1/14	1	Compatibility		461-465
5	21/1/14	1	Memory allocation functions		500-506
6	21/1/14	1	Array of pointers		506-507
7	21/1/14	1	Programming applications		507-513
8	21/1/14	1	Pointers to void, Pointers to functions		513-518
9	21/1/14	1	Command –line arguments		518-521
10	21/1/14	1	Example c programs		521-523
11	21/1/14		Strings – Concepts C Strings, String Input / Output functions		534-540,541-553
12	21/1/14		Arrays of strings		553-555
13	21/1/14		String manipulation functions		555-574
14	21/1/14		String / data conversion		574-579
15	21/1/14		Example c programs		579-587

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.

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MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

<table>
<tr><td colspan="2"></td><td>SCHEDULE OF INSTRUCTIONS

UNIT - V</td><td>2013-14</td></tr>
<tr><td colspan="2"></td><td></td><td>Regulation: R11</td></tr>
</table>

FACULTY DETAILS:

Name of the Faculty::	**E Vishnu vardhan**
Designation:	**Assistant Professor**
Department::	**Information Technology(IT)**

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No___ to ___
1			Structures – Declaration		606-607
2			Definition of structures		607-608
3			initialization of structures		608-608
4			Accessing structures		609-610
5			Nested structures		616-618
6			Arrays of structures		618-619
7			Arrays of structures		620-621
8			Structures and functions		622-625
9			Pointers to structures		625-628
10			Self referential structures		804,834
11			Unions		628-634
12			Typedef		600-601
13			Bit fields, Enumerated types		601-606
15			C programming examples		634-643

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
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MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

<table>
<tr>
<td colspan="3" align="center">**SCHEDULE OF INSTRUCTIONS**

UNIT - VI</td>
<td>2013-14</td>
</tr>
</table>

| | | | | 2013-14 |
| SCHEDULE OF INSTRUCTIONS

UNIT - VI | | | | Regulation: R11 |

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**
The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No___ to ___
1		1	Input and Output – Concept of a file		
2		1	Streams		
3		1	Standard input / output functions		
4		1	Standard input / output functions		
5		1	Formatted input / output functions		
6		1	Formatted input / output functions		
7		1	Text files and binary files		
8		1	File input / output operations		
9		1	File status functions (error handling)		
10		1	C programme examples		

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
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FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**
The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No___ to ___
1		1	Searching and Sorting – Sorting		
2		1	Selection sort		
3		1	Bubble sort,		
4		1	Insertion sort		
5		1	Quick sort		
6		1	Merge sort		
7		1	Searching- linear search		
8		1	Searching- linear search		
9		1	Searching-binary search		
10		1	Searching-binary search		

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
  2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS	2013-14
	UNIT - VIII	Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No___ to ___
1			Data Structures – Introduction to Data Structures		
2			abstract data types		
3			Linear list – singly linked list implementation		
4			insertion		
5			deletion		
6			searching operations on linear list		
7			Stacks-Operations		
8			array representations of stacks		
9			linked representations of stacks		
10			stack application-infix to postfix conversion		
11			postfix expression evaluation		
12			recursion implementation		
13			Queues-operations		
14			array representations of Queues		
15			linked representations of queues		

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
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MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	2013-14
COURSE COMPLETION STATUS	Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**

Subject:: **CPDS**   Subject Code **6751006**
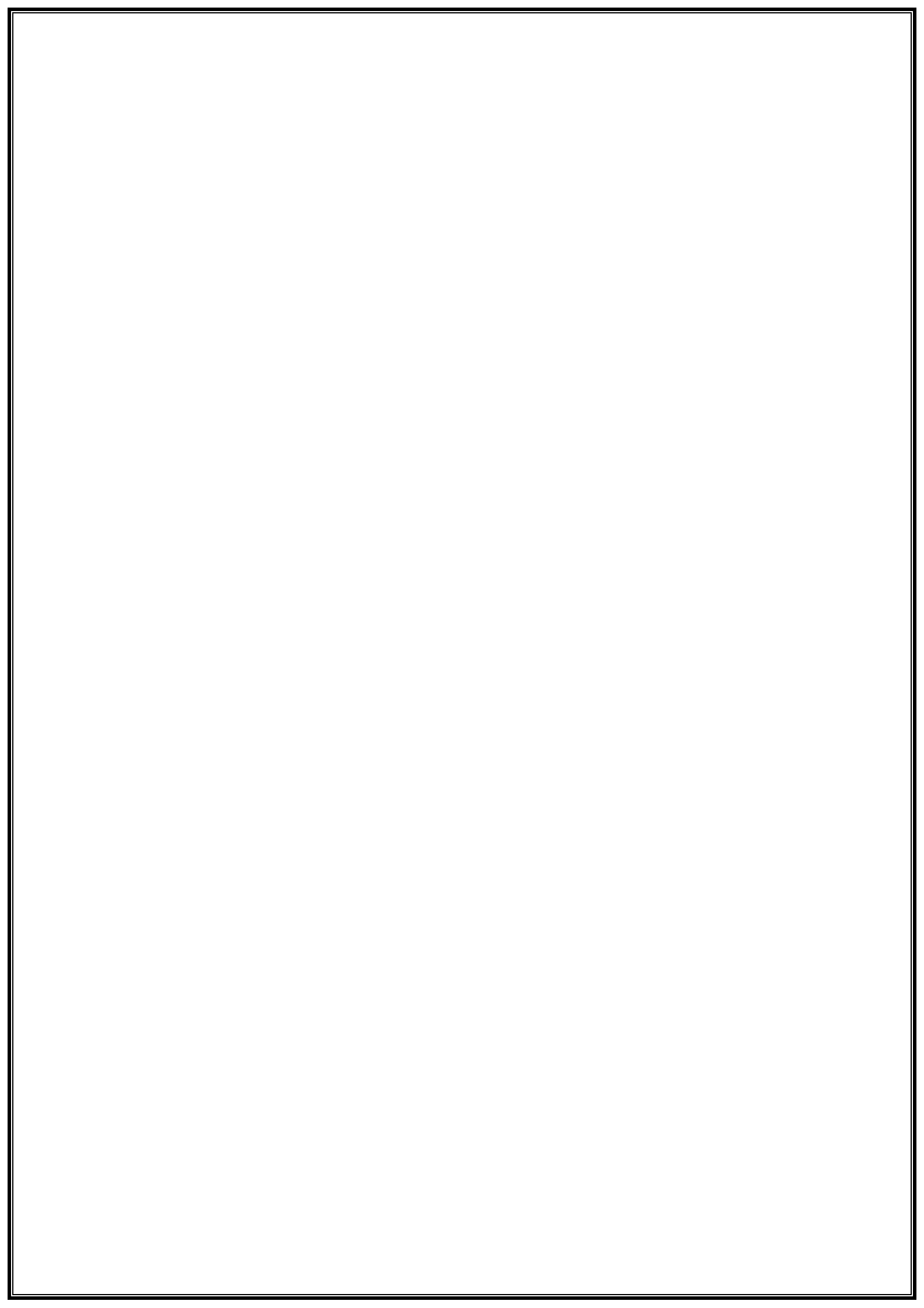
Department:: **IT Department**

Actual Date of Completion & Remarks, if any

Units	Remarks	Nos. of Objectives Achieved
Unit 1	Completed	
Unit 2	Completed	
Unit 3	Completed	
Unit 4	Completed	
Unit 5	Completed	
Unit 6		
Unit 7		
Unit 8		

Signature of Dean of School   **Signature of Faculty**
Date: **Date:**

NOTE: AFTER THE COMPLETION OF EACH UNIT MENTION THE NUMBER OF OBJECTIVES ACHIEVED.

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**
The Schedule for the whole Course / Subject is::

Date:

This Tutorial corresponds to Unit Nos.   Time:

Q1.

Q2.

Q3.

Q4.

Q5.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

Signature of Dean of School   **Signature of Faculty**
Date: **Date:**

	TUTORIAL SHEETS - II	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: **E Vishnu vardhan**
Designation: **Assistant Professor**
Department:: **Information Technology(IT)**
The Schedule for the whole Course / Subject is::

Date:

This Tutorial corresponds to Unit Nos.   Time:
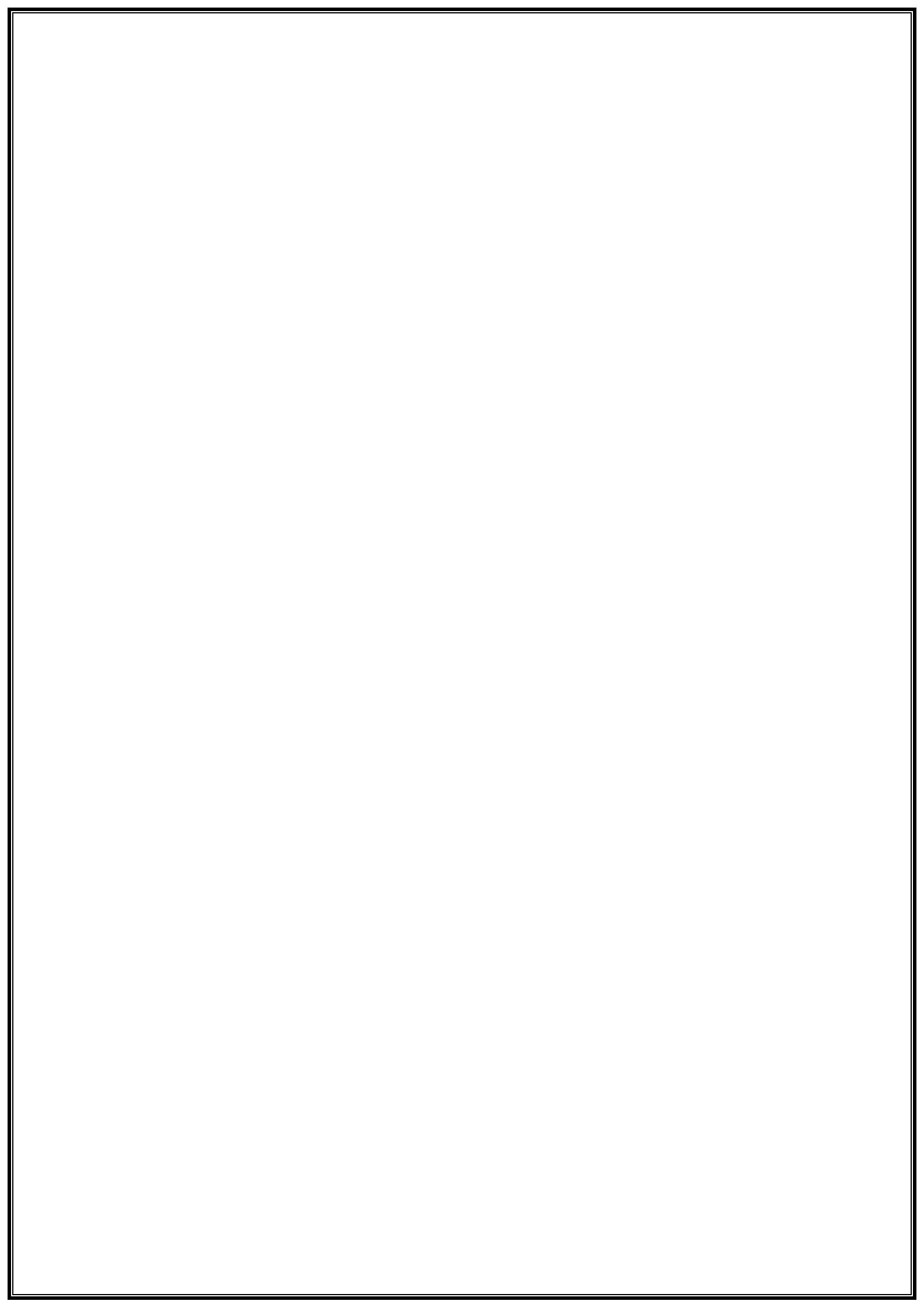
Q1.

Q2.

Q3.

Q4.

Q5.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

Signature of Dean of School
Date:

Signature of Faculty
Date:

		2013-14
	TUTORIAL SHEETS - III	Regulation: R11

FACULTY DETAILS:

Name of the Faculty::	**E Vishnu vardhan**
Designation:	**Assistant Professor**
Department::	**Information Technology(IT)**

Date:

This Tutorial corresponds to Unit Nos.   Time:

Q1.

Q2.

Q3.

Q4.

Q5.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

Signature of Dean of School   **Signature of Faculty**
Date: **Date:**

These verbs can also be used while framing questions for Continuous Assessment Examinations as well as for End – Semester (final) Examinations.

ILLUSTRATIVE VERBS FOR STATING **GENERAL OBJECTIVES**

Know Comprehend	Understand Apply	Analyze Design	Generate Evaluate

ILLUSTRATIVE VERBS FOR STATING **SPECIFIC OBJECTIVES:**

A. Cognitive Domain

1	2	3	4	5	6
Knowledge	**Comprehension Understanding**	**Application** of knowledge & comprehension	**Analysis** of whole w.r.t. its constituents	**Synthesis** combination of ideas/constituents	**Evaluation** judgement
Define	Convert	Change	Breakdown	Categorize	Appraise
Identify	Defend	Compute	Differentiate	Combine	Compare
Label	Describe (a	Demonstrate	Discriminate	Compile	Conclude
List	procedure)	Deduce	Distinguish	Compose	Contrast
Match	Distinguish	Manipulate	Separate	Create	Criticize
Reproduce	Estimate	Modify	Subdivide	Devise	Justify
Select	Explain why/how	Predict		Design	Interpret
State	Extend	Prepare		Generate	Support
	Generalize	Relate		Organize	
	Give examples	Show		Plan	
	Illustrate	Solve		Rearrange	
	Infer			Reconstruct	
	Summarize			Reorganize	
				Revise	

B. Affective Domain		**C. Psychomotor Domain (skill development)**				
Adhere	Resolve	Bend	Dissect	Insert	Perform	Straighten
Assist	Select	Calibrate	Draw	Keep	Prepare	Strengthen
Attend	Serve	Compress	Extend	Elongate	Remove	Time
Change	Share	Conduct	Feed	Limit	Replace	Transfer
Develop		Connect	File	Manipulate	Report	Type
Help		Convert	Grow	Move preciselyReset		Weigh
Influence		Decrease	Handle	Operate	Run	
Initiate		Demonstrate	Increase	Paint	Set	

Name of the Faculty: **E Vishnu vardhan**

Subject **CPDS** Subject Code **6751006**

Unit **1**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Computer Systems, Computer Hardware, Computer Software	50 min	T1	Chalk and talk
2	Computer Environments – Personal Computing Environment, Time-sharing Environment, Client/Server Environment, Distributed Computing	50 min	T1	Chalk and talk
3	Computer Languages – Machine Languages, Symbolic Languages, High-Level Languages	50 min	T1	Chalk and talk
4	Creating and running programs – Writing and Editing, compiling, linking, and executing programs	50 min	T1	Chalk and talk
5	System Development – SDLC	50 min	T1	Chalk and talk
6	Algorithms	50 min	T1	Chalk and talk
7	pseudo code	50 min	T1	Chalk and talk
8	flowcharts	50 min	T1	Chalk and talk
9	Applying the software development method	50 min	T1	Chalk and talk

On completion of this lesson the student shall be able to (Outcomes)

1. Define Computer Systems.
2. Distinguish between Computer Hardware and Software.
3. Illustrate Computer Environments like Personal Computing Environment, Time-sharing Environment, Client/Server Environment, and Distributed Computing.
4. Understand different kinds of Computer Languages – Machine Languages, Symbolic Languages and High-Level Languages.
5. Creating and running programs in a high level language.
6. Writing and Editing, compiling, linking, and executing programs.
7. Know the technique of System Development – SDLC.
8. Acquaint with Problem solving Techniques through Algorithms, pseudo code, flowcharts.

	ASSIGNMENT **Unit-I**	2013-14
		Regulation: R11

Assignment / Questions

Straight Forward (Knowledge):

1. Define Algorithm.
2. What is the use of flowchart?
3. What are the different steps followed in the program development?
4. What are the components of computer?
5. What are the steps involved in software development lifecycle?

Hard (Comprehension):

1. What is a Computer? Explain the components of a computer along with block diagram.
2. Define flowchart, Explain the symbols used in a flowchart.
3. Define an Algorithm? Explain the properties and categories of an algorithm in detail.
4. Write an Algorithm to compute the sum of first 'n' integer and draw the flowchart.
5. Compare Personal Computing, Time-sharing, Client/Server and Distributed Computing environments.

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

LESSON PLAN **Unit-II**		2013-14		
		Regulation: R11		

Name of the Faculty: **E Vishnu vardhan**

Subject **CPDS** Subject Code **6751006**

Unit II

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	History of C Language, Structure of C program, simple c programme	50 min	T1	Chalk and talk
2	Identifiers, constants, variables and keywords	50 min	T1	Chalk and talk
3	Basic data types	50 min	T1	Chalk and talk
4	Input / Output functions -Formatting input and output	50 min	T1	Chalk and talk
5	Operators, Expressions	50 min	T1	Chalk and talk
6	Precedence and Associativity	50 min	T1	Chalk and talk
7	Expression Evaluation, type conversions	50 min	T1	Chalk and talk
8	Bit wise operators	50 min	T1	Chalk and talk
9	Selection statements(if and switch statements)	50 min	T1	Chalk and talk
10	Repetition statement(while ,for,do-while statements)	50 min	T1	Chalk and talk
11	Other statements related to looping(break,continue,goto)	50 min	T1	Chalk and talk
12	Simple c programming examples	50 min	T1	Chalk and talk

On completion of this lesson the student shall be able to (Outcomes)

1. Know the History of C Language, it evolution, and importance.
2. Understand the Features of C, Structure of C.
3. Define the identifiers, constants, variables and keywords.
4. Define Simple data types like void, integral, floating-point types.
5. Understand declarations and initialization, Input / Output – Steams, Formatting input and output.
6. Define unary, binary, and ternary operators and their precedence and association
7. Define and use post-fix, pre-fix, unary and binary expressions.

8. Understand explicit, implicit type conversions and statements.
9. Understand and apply Decision control structures: if … else, nested if, dangling else, switch statement.

	ASSIGNMENT Unit-II	2013-14
		Regulation: R11

Assignment / Questions

Straight Forward (Knowledge):

1. Explain the history of C language?
2. Give the features of C?
3. Explain the structure of the C in brief?
4. Give the identifiers and constants in brief?
5. What are the different keywords of C language?
6. Explain in brief the basic data types of C language?
7. How memory will be allocated for basic data types of 'C'?
8. Explain in brief all the operators of 'C'?
9. Give the structure of **if..else** with an example?
10. What is dangling else? Give suitable example?
11. What is the syntax of switch statement?

Hard (Comprehension):

1. Explain the history and origin of C language.
2. Give the features and structure of C language.
3. Explain the rules to be followed to declare the variables.
4. Explain the identifiers, constants and keywords.
5. Explain the primary data types. How the primary data type's memory allocated?
6. Give the operators and precedence and association rules of C language?
7. Give the syntax of if-else and dangling if-else statements?

Application:

1. Write a program to explain the syntax of if-else statements?
2. Write a program to explain the syntax and usage of switch statement?

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

Name of the Faculty: **E Vishnu vardhan**

Subject **CPDS**   Subject Code   **6751006**

Unit   **III**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Designing structured Programmes	50 min	T1	Chalk and talk
2	Functions basics	50 min	T1	Chalk and talk
3	User defined functions, inter function communication	50 min	T1	Chalk and talk
4	Standard functions ,Scope	50 min	T1	Chalk and talk
5	Storage classes-auto, register ,Static, extern, scope rules	50 min	T1	Chalk and talk
6	Type qualifiers. recursion-recursive functions	50 min	T1	Chalk and talk
7	Pre processor commands, Example C programmes	50 min	T1	Chalk and talk
8	Arrays –Concept	50 min	T1	Chalk and talk
9	Using arrays in C, inter function communication	50 min	T1	Chalk and talk
10	Array applications	50 min	T1	Chalk and talk
11	Two-Dimensional arrays	50 min	T1	Chalk and talk
12	Multidimensional arrays ,C Programme example	50 min	T1	Chalk and talk

On completion of this lesson the student shall be able to (Outcomes)

1. Define a function, its arguments, return value, prototype, arguments and parameters.
2. Differentiate between Call by value and call by reference.
3. Understand math functions and random numbers.
4. Able to pass arrays as arguments to functions.
5. Understand the use of recursion.
6. Define Macros and compare with functions.
7. Define and understand declaration, initialization, accessing elements of an array and storing values in arrays
8. Understand inter-function communication – passing individual elements, passing the whole array
9. Understand array applications.

10. Understand two dimensional and multidimensional arrays

	ASSIGNMENT Unit-III	2013-14
		Regulation: R11

Assignment / Questions

Unit – III:

Straight forward (Knowledge):

1. What are repetitive statements in 'C'?
2. Give the syntax of for loop?
3. Give the syntax of while loop?
4. Give the syntax of do-while loop?
5. Write the syntax of user defined functions.
6. What is recursive function? Explain with an example.
7. What is macro? Difference between macro and function.

Hard (Comprehension):

1. What are functions & the advantages of functions in a program with examples?
2. Explain Call-by-value & call-by-reference with examples.
3. Explain local, global & block variables with examples.
4. Give the syntax of all repetitive control structures?
5. Explain the use of break and continue statements in program? Give one example program?

Application:

1. WAP to implement e^x series without using library functions.
2. WAP to display the Pascal triangle.

$$1$$

$$1\ 2\ 1$$

$$1\ 3\ 3\ 1$$

$$1\ 4\ 6\ 4\ 1$$

$$1\ 5\ 10\ 10\ 5\ 1$$

3. WAP to find whether a given year is a leap year or not.
4. WAP is recursion, explain with examples.
5. WAP to find the functional of a no using recursion.
6. WAP to implement towers of Hanoi.
7. Write a program to demonstrate call by value and call by reference.

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN Unit-IV	2013-14
		Regulation: R11

Name of the Faculty: **E Vishnu vardhan**

Subject **CPDS**   Subject Code **6751006**

Unit **IV**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Pointer-Introduction (Basic concepts)	50 min	T1	Chalk and talk
2	Pointer for inter function communication	50 min	T1	Chalk and talk
3	Pointer to pointers, Compatibility	50 min	T1	Chalk and talk
4	Memory allocation functions	50 min	T1	Chalk and talk
5	Array of Pointers	50 min	T1	Chalk and talk
6	Programming applications	50 min	T1	Chalk and talk
7	Pointers to void, Pointers to functions	50 min	T1	Chalk and talk
8	Command –line argument	50 min	T1	Chalk and talk
9	Stings- Concepts, C strings	50 min	T1	Chalk and talk
10	String Input/output functions, Arrays of Strings	50 min	T1	Chalk and talk
11	Strings manipulation functions	50 min	T1	Chalk and talk
12	String/data conversion	50 min	T1	Chalk and talk
13	C Programme example	50 min	T1	Chalk and talk

On completion of this lesson the student shall be able to (Outcomes)

1. Define, understand, and apply pointers.
2. Understand pointer arithmetic.
3. Explain the relationship between arrays and pointers.
4. Use pointers as arguments and return type of a function, pointers to a function.
5. Understand memory allocation functions.
6. Use array of pointers and pointer to pointers.
7. Handle the strings: Input output functions, string handling functions.

Assignment / Questions

Straight forward (Knowledge):

1. Define an array and give examples?
2. How many bytes are required to store an array declared char name (10)?
3. Why matrix is called as two-dimensional array?
4. Can we initialize an array while declaring?
5. Write the syntax of declaring a multi dimensional array.

Hard (Comprehension):

1. Explain two dimensional and multidimensional arrays with suitable examples.

Application:

1. What is an array? Explain two dimensional arrays with examples.
2. WAP to find the biggest of 'N' no's using arrays.
3. Write a program to find the multiplication of a matrix.
4. Write a program to sort the given numbers.

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

Name of the Faculty: **E Vishnu vardhan**

Subject **CPDS**   Subject Code **6751006**

Unit   **V**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Derived types-Structures-Declaration	50 min	T1	Chalk and talk
2	Definition and initialization of Structures	50 min	T1	Chalk and talk
3	Accessing structures	50 min	T1	Chalk and talk
4	Nested structures	50 min	T1	Chalk and talk
5	Arrays of Structures	50 min	T1	Chalk and talk
6	Structures and functions	50 min	T1	Chalk and talk
7	Pointers to structures	50 min	T1	Chalk and talk
8	Self referential structures	50 min	T1	Chalk and talk
9	Unions	50 min	T1	Chalk and talk
10	Type def, bit fields	50 min	T1	Chalk and talk
11	Enumerated types	50 min	T1	Chalk and talk
12	C Program examples	50 min	T1	Chalk and talk

On completion of this lesson the student shall be able to (Outcomes)

1. Understand typedef and enumerated types.
2. Define, understand and apply the structure.
3. Define, understand and apply the union.

	ASSIGNMENT Unit-V	2013-14
		Regulation: R11

Assignment / Questions

Straight forward (Knowledge):

1. What are pointers and how they are initialized? Explain with examples?
2. Difference between array of pointers & pointer to an array. Give an example.
3. What is dynamic memory allocation? Explain how this can be implemented in C.

Hard (Comprehension):

1. Explain in detail about string manipulation functions with examples.
2. Write a function to calculate the roots. The function must use two pointer parameters, one to receive the coefficients a, b and c and the other to send the roots to the calling function.

Application:

1. Write a program to find the length of string using pointers.
2. Write a program to find the addition of 2 matrices using pointers.
3. Write a C program using pointers to read in an array of integers and print its elements in reverse order.
4. Write a C program to illustrate the use of a pointer as a function argument.
5. Write a C program using pointers to determine the length of a character string.
6. Write a program and explain the working of malloc and calloc function.
8. What is the library function which will read a given sentence in a string?

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

Name of the Faculty: **E Vishnu vardhan**

Subject **CPDS**   Subject Code   **6751006**

Unit   **VI**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Input and output –Concepts of a file	50 min	T1	Chalk and talk
2	Streams	50 min	T1	Chalk and talk
3	Standard input/output functions	50 min	T1	Chalk and talk
4	Formatted input/out functions	50 min	T1	Chalk and talk
5	Text files and a binary files	50 min	T1	Chalk and talk
6	File input/out operations	50 min	T1	Chalk and talk
7	File status functions(error handling)	50 min	T1	Chalk and talk
8	C Program examples	50 min	T1	Chalk and talk

On completion of this lesson the student shall be able to (Outcomes)

1. Understand typedef and enumerated types.
2. Define, understand and apply the structure.
3. Define, understand and apply the union.

Assignment / Questions

Straight forward (Knowledge):

1. Explain I-O operations on files.
2. What is the use of struct keyword? Explain the use of dot operator? Give an example
3. Explain structures with syntax and example.
4. Explain union with syntax an example.
5. Difference between structures & Union with example.
6. What is a file management? Explain.
7. Define a file. Give the functions for opening, reading and closing of a file in C.
8. Compare printf () and fprintf ().
9. How does an append mode differs from a write mode?

Hard (Comprehensive):

1. Distinguish between text mode and binary mode operation of a file.
2. What are the file IO functions in C. Give a brief note about the task performed by each function?
3. What is the task performed by fseek ().What is its syntax. Explain each parameter in it.
4. Describe the types of files with an example.
5. What are the different Input/Output operations on files?
6. List various binary modes of opening a file.
7. Describe the types of files with an example.

Application:

1. Write a C program to read information about a student record containing student name, age, total marks. Write the marks of each student in an output file.
2. Write a C program to read text file and convert the file contents to uppercase and write the contents to an output file.
3. Write a C program to read an input file from command prompt from command line arguments.
4. Write a program to read an input file and count the number of characters in the input.
5. Write a program to use structure within union. Display the contents of structure elements.

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

Name of the Faculty: **E Vishnu vardhan**

Subject **CPDS** Subject Code **6751006**

Unit **VII**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Searching and sorting –Sorting selection sort	50 min	T1	Chalk and talk
2	Bubble sort	50 min	T1	Chalk and talk
3	Insertion sort	50 min	T1	Chalk and talk
4	Quick sort	50 min	T1	Chalk and talk
5	Merge sort	50 min	T1	Chalk and talk
6	Searching –Liner Search method	50 min	T1	Chalk and talk
7	Binary search method	50 min	T1	Chalk and talk

On completion of this lesson the student shall be able to

1.

2.

3.

4

Assignment / Questions

1. Write a program to explain selection sort.

2. Write a program to explain bubble sort.

3. Write a program to explain insertion sort.

4. Write a program to explain quick sort.

5. Write a program to explain merge sort.

6. Write a c program to search for a given element in the integer array using binary search.

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

Name of the Faculty: **E Vishnu vardhan**

Subject **CPDS**   Subject Code **6751006**

Unit **VIII**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Data structure-Introduction to data structures	50 min	T1	Chalk and talk
2	Abstract data types	50 min	T1	Chalk and talk
3	Linear list –Singly linked list implementation	50 min	T1	Chalk and talk
4	Insert, deletion and searching operation on liner list	50 min	T1	Chalk and talk
5	Stacks-Operations	50 min	T1	Chalk and talk
6	Array and Linked representations of stacks	50 min	T1	Chalk and talk
7	Stack application –infix to postfix conversion, Postfix expression evaluation	50 min	T1	Chalk and talk
8	Recursion implementation	50 min	T1	Chalk and talk
9	Queues –Operations	50 min	T1	Chalk and talk
10	Array and linked representation	50 min	T1	Chalk and talk

On completion of this lesson the student shall be able to

1.

2.

3.

4

Assignment / Questions

1. Define Linked list. Explain various operations performed on linked list.
   (a).insert into an empty list.
   (b).insert at the first position.
   (c).insert at the last position.
   (d).insert after the given element.

2. Explain the operations performed on stack using examples.

3. Explain the operations performed on queue with an example.

4. Write a c program for implementation of various operations on circular queues.

5. Write a c program to convert infix expression to postfix expression.

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.