

# J.B. INSTITUTE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)



**ACADEMIC YEAR**

**2013-14**



## COURSE PLAN

2013-14

Regulation: R11


### FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
Designation: Associate Professor  
Department:: IT

### COURSE DETAILS

Name Of The Programme:: B.TECH  
Designation::  
Year :: III yr  
Department:: IT  
Title of The Subject Net work Security  
No of Students 50

Batch:: 2012  
Semester :: I sem  
Subject Code

	<p>COURSE PLAN</p>	2013-14
		Regulation: R11

FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
 Designation: Associate Professor  
 Department:: IT

1. TARGET

- a) Percentage Pass : 100%
- b) Percentage I class : 95%

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  
 Date:

Signature of Faculty  
 Date:



## GUIDELINES TO STUDY THE SUBJECT

2013-14

Regulation: R11

### FACULTY DETAILS:

Name of the Faculty::

ROSHAN KAVURI

Designation:

Associate Professor

Department::

IT

Guidelines for Preparing the Course:

#### Course Description:

- After Explain the aim of operating system
- Learn the overview of computer system hardware
- Learn about handheld devices and real-time systems
- Learn the operating system functions
- Learn about symmetric and asymmetric multiprocessing
- Learn between client-server and peer-to-peer models of distributed systems
- Analyze essential properties of different types of operating systems
- Learn about major activities of an OS with regard to file management
- Analyze operating system protection and security factors
- Learn about models of inter process communication
- List the various memory hierarchy devices and differentiate them

#### Course Objectives:

After completing the course the student should understand what is an operating system what are the different types of operating systems and their structures. what are the different services and functions that are provided by the operating systems, what is a process and thread user level thread and kernel threads ,how to manage the processes ,what are the different process states and benefits of multiprogramming and multi threading concepts. What is scheduling and different types of scheduling algorithms,

#### Learning Outcomes:

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## COURSE OBJECTIVES

2013-14

Regulation: R11

### FACULTY DETAILS:

Name of the Faculty:: *ROSHAN KAVURI*  
Designation: *Associate Professor*  
Department:: *IT*

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

- After Explain the aim of operating system
- Learn the overview of computer system hardware
- Learn about handheld devices and real-time systems
- Learn the operating system functions
- Learn about symmetric and asymmetric multiprocessing
- Learn between client-server and peer-to-peer models of distributed systems
- Analyze essential properties of different types of operating systems
- Learn about major activities of an OS with regard to file management
- Analyze operating system protection and security factors
- Learn about models of inter process communication
- List the various memory hierarchy devices and differentiate them

S.No.	Objectives	Outcomes
1.	Student should understand what is an Operating Systems and its over view, OS Functions, protection and security, Distributed Systems, Special purpose systems. OS structure, OS services And System calls, System programs , OS generations	
2.	What is Process management, Process concepts and threads, scheduling –criteria, algorithms their evaluation, Threads scheduling, case studies UNIX, Linux , Windows	
3.	What is Concurrency-and What is Process synchronization, the critical section problem, semaphores, Paterson’s solution, Synchronization Hardware, classic problems of Synchronization, monitors, synchronization examples, atomic transactions. case studies LINUX,UNIX,WINDOWS.	
4.	What is Memory management – swapping, contiguous memory allocations, paging, structure of the page table, segmentation, virtual memory demand paging, page replacement algorithms, Allocation of frames, thrashing.	

5	<p>Understanding the case studies UNIX, LINUX,WINDOWS</p> <p>Principles of deadlocks- system model, deadlock characterization, deadlock prevention, detection and avoidance, recovery from deadlock.</p>	
6.	<p>File system interface –the concept of file, access methods Directory structure,</p> <p>File system mounting, file sharing and protection,</p> <p>File system implementation File system structure and implementation Directory implementation allocation methods ,free space management, efficiency and performance. Case studies UNIX ,LINUX, WINDOWS</p>	
7.	<p>Mass storage structure – over view of mass storage structure disk structure ,disk attachment, disk scheduling swap-space management, RAID structure, stable- storage implementation, Tertiary storage structure.</p> <p>I/O systems-Hardware, application I/O subsystem, Transforming I/O requests to Hardware operations, STREAMS, performance.</p>	
8.	<p>Protection- Protection, Goals of Protection, Principles of Protection, Domain of protection Access Matrix, Implementation of Access Matrix, Access control, Revocation of Access Rights, Capability- Based systems, Language- Based Protection.</p> <p>Security- The security problem, program threats, system and network threats cryptography as a security tool, user authentication, implementing security defenses, firewalling to protect systems and networks, computer – security classifications, case studies UNIX, Linux, Windows.</p> <p>Operating Systems over view, OS Functions, protection and security, Distributed Systems, Special purpose systems. OS structure, OS services And System calls, System programs , OS generations</p>	
9.		

**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.



## COURSE OUTCOMES

2013-14

Regulation: R11

**FACULTY DETAILS:**

Name of the Faculty:: *ROSHAN KAVURI*  
 Designation: *Associate Professor*  
 Department:: *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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## COURSE SCHEDULE

2013-14

Regulation: R11

### FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
Designation: Associate Professor  
Department: IT


The Schedule for the whole Course / Subject is:: Operating Systems

S. No.	Description	Duration (Date)		Total No. of Periods
		From	To	
1.	Operating Systems over view, OS Functions, protection and security, Distributed Systems, Special purpose systems. OS structure, OS services And System calls, System programs , OS generations.			08
2.	Process management, Process concepts and threads, scheduling –criteria, algorithms their evaluation, Threads scheduling, case studies UNIX, Linux , Windows			07
3.	Concurrency-Process synchronization, the critical section problem, semaphores, Paterson’s solution, Synchronization Hardware, classic problems of Synchronization, monitors, synchronization examples, atomic transactions. case studies LINUX,UNIX,WINDOWS.			09
4.	Memory management – swapping, contiguous memory allocations, paging, structure of the page table, segmentation, virtual memory demand paging, page replacement algorithms, Allocation of frames, thrashing. case studies UNIX, LINUX,WINDOWS			08
5.	Principles of deadlocks- system model, deadlock characterization, deadlock prevention, detection and avoidance, recovery from deadlock.			06
6.	File system interface –the concept of file, access			



	<p>methods Directory structure,</p> <p>File system mounting, file sharing and protection,</p> <p>File system implementation File system structure and implementation Directory implementation allocation methods ,free space management, efficiency and performance. Case studies UNIX ,LINUX, WINDOWS</p>			<b>07</b>
7	<p>Mass storage structure – over view of mass storage structure disk structure ,disk attachment, disk scheduling swap-space management, RAID structure, stable-storage implementation, Tertiary storage structure.</p> <p>I/O systems-Hardware, application I/O subsystem, Transforming I/O requests to Hardware operations, STREAMS, performance.</p>			<b>07</b>
8	<p>Protection- Protection, Goals of Protection, Principles of Protection, Domain of protection Access Matrix, Implementation of Access Matrix, Access control, Revocation of Access Rights, Capability- Based systems, Language- Based Protection.</p> <p>Security- The security problem, program threats, system and network threats cryptography as a security tool, user authentication, implementing security defenses, firewalling to protect systems and networks, computer – security classifications, case studies UNIX, Linux, Windows.</p>			<b>08</b>

Total No. of Instructional periods available for the course: Hours /  
Periods **60**

	<b>SCHEDULE OF INSTRUCTIONS</b>  <b>UNIT - I</b>	2013-14
		Regulation: R11

**FACULTY DETAILS:**


Name of the Faculty:: ROSHAN KAVURI  
 Designation: Associate Professor  
 Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No. to
1		1	Operating Systems over view, OS Functions.		
2		1	protection and security		
3		2	Distributed Systems, Special purpose systems.		
4		1	OS structure		
5		1	OS services And System calls		
6		1	System programs		
7		1	OS generations.		

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.

	<b>SCHEDULE OF INSTRUCTIONS</b>  <b>UNIT - II</b>	2013-14
		Regulation: R11

**FACULTY DETAILS:**

Name of the Faculty:: ROSHAN KAVURI  
 Designation: Associate Professor  
 Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No ___ to ___
1		1	Process management		
2		1	Process concepts		
3		1	threads,		
4		1	scheduling –criteria,		
5		2	algorithms		
7		1	and their evaluation,		
8		2	Threads scheduling,		
9		2	case studies UNIX, Linux		
10		1	case studies Windows		

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 - III

Regulation: R11

#### FACULTY DETAILS:

Name of the Faculty:: *ROSHAN KAVURI*  
Designation: *Associate Professor*  
Department:: *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	Concurrency-Process synchronization		
2		1	the critical section problem		
3		1	semaphores, Paterson's solution		
4		1	Synchronization Hardware,		
5		2	classic problems of Synchronization		
6		1	monitors,		
7		2	synchronization examples,		
8		1	atomic transactions		
9		1	case studies LINUX,UNIX,WINDOWS.		

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 - IV

Regulation: R11

#### FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
Designation: Associate Professor  
Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No ___ to ___
1		1	Memory Management intruduction		
2		1	swapping, contiguous memory allocations,		
3		1	management paging, structure of the page table,		
4		1	virtual memory demand		
5		1	paging, page replacement algorithms,		
6		1	Allocation of frames,		
7		1	thrashing.		
8		2	case studies UNIX, LINUX,		
9		1	case studies WINDOWS		
10					

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 - V

Regulation: R11

#### FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
Designation: Associate Professor  
Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No ___ to ___
1		2	Principles of deadlocks- system model,		
2		1	deadlock characterization,		
3		1	deadlock prevention		
4		1	detection and avoidance,		
5		1	recovery from deadlock.		

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 - VI

Regulation: R11

#### FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
Designation: Associate Professor  
Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No ___ to ___
1		1	File system interface –the concept of file,		
2		1	access methods Directory structure		
3		1	File system mounting, file sharing and protection,		
4		1	File system implementation File system structure		
5		1	and implementation Directory implementation		
6		1	allocation methods		
7		1	free space management,		
8		1	, efficiency and performance.		
9		1	Case studies UNIX ,LINUX,		
10		1	Case studies WINDOWS		

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 - VII

Regulation: R11

**FACULTY DETAILS:**

Name of the Faculty:: ROSHAN KAVURI  
 Designation: Associate Professor  
 Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No ___ to ___
1			Mass storage structure – over view of mass storage structure		
2			disk structure ,disk attachment,		
3			disk scheduling		
4			swap-space management		
5			RAID structure, stable- storage implementation,		
6			Tertiary storage structure.		
7			I/O systems-Hardware, application I/O subsystem,		
8			Transforming I/O requests to Hardware operations, STREAMS, performance.		

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:: ROSHAN KAVURI  
Designation: Associate Professor  
Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal...) Page No ___ to ___
1			Protection- Protection, Goals of Protection		
2			Principles of Protection		
3			Domain of protection Access Matrix, Implementation of Access Matrix,		
4			,Access control, Revocation of Access Rights, Capability- Based systems,		
5			Language- Based Protection		
6			Security- The security problem, program threats, system and network threats		
7			cryptography as a security tool, user authentication,		
8			implementing security defences, firewalling to protect systems and networks,		
9			computer – security classifications, case studies UNIX, Linux,		

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.



## COURSE COMPLETION STATUS

2013-14

Regulation: R11

**FACULTY DETAILS:**

Name of the Faculty:: ROSHAN KAVURI

Subject:: OS

Subject Code

Department:: IT

Actual Date of Completion & Remarks, if any

Units		Nos. of Objectives Achieved
Unit 1	Operating Systems over view, OS Functions, protection and security, Distributed Systems, Special purpose systems. OS structure, OS services And System calls, System programs , OS generations	
Unit 2	Process management, Process concepts and threads, scheduling –criteria, algorithms their evaluation, Threads scheduling, case studies UNIX, Linux , Windows	
Unit 3	Concurrency-Process synchronization, the critical section problem, semaphores, Paterson’s solution, Synchronization Hardware, classic problems of Synchronization, monitors, synchronization examples, atomic transactions. case studies LINUX,UNIX,WINDOWS.	
Unit 4	Memory management – swapping, contiguous memory allocations, paging, structure of the page table, segmentation, virtual memory demand paging, page replacement algorithms, Allocation of frames, thrashing.  case studies UNIX, LINUX,WINDOWS	
Unit 5	Principles of deadlocks- system model, deadlock characterization, deadlock prevention, detection and avoidance, recovery from deadlock.	

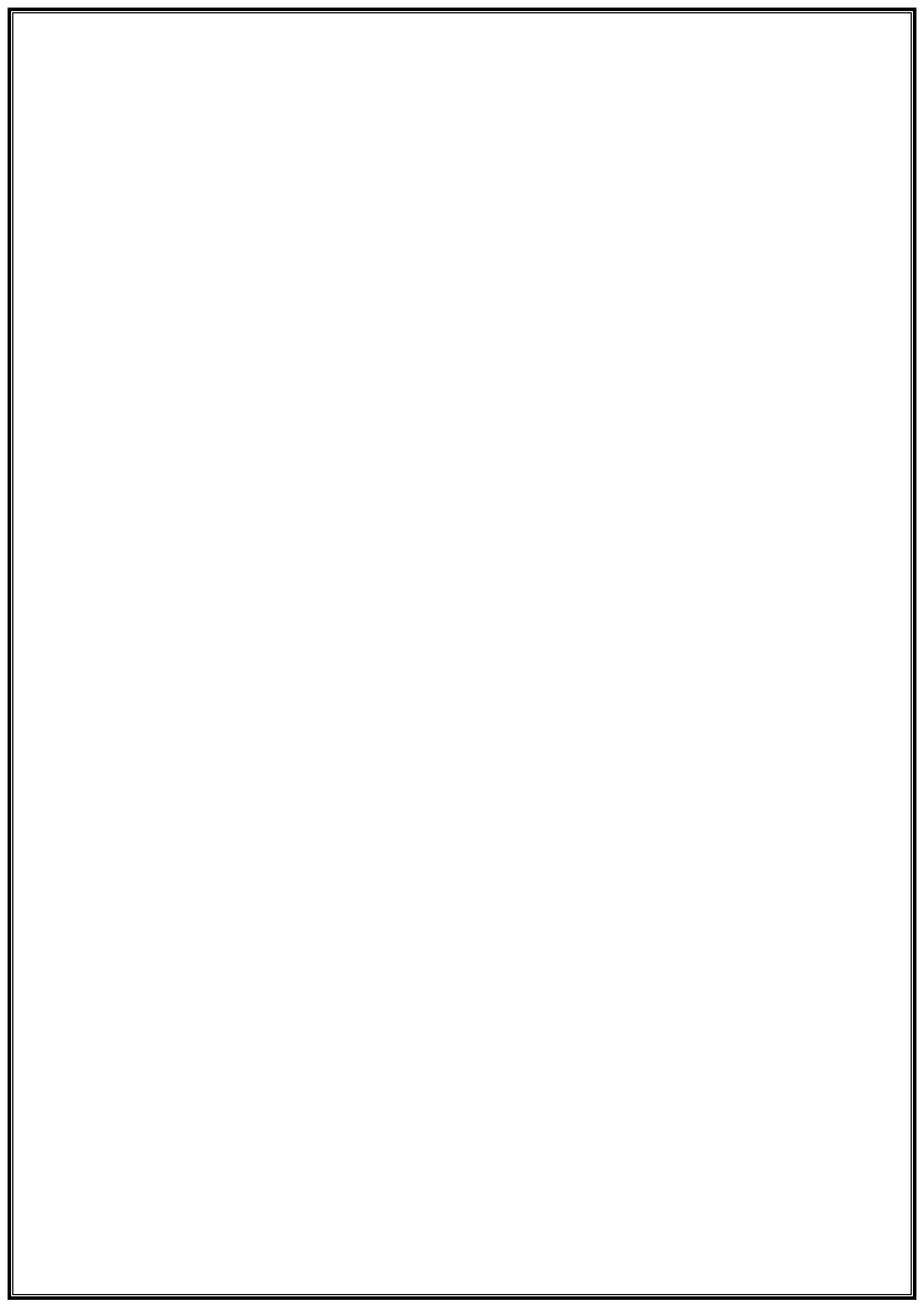


Unit 6	<p>File system interface –the concept of file, access methods Directory structure, File system mounting, file sharing and protection, File system implementation File system structure and implementation Directory implementation allocation methods ,free space management, efficiency and performance. Case studies UNIX ,LINUX, WINDOWS</p>	
Unit 7	<p>Mass storage structure – over view of mass storage structure disk structure ,disk attachment, disk scheduling swap-space management, RAID structure, stable- storage implementation, Tertiary storage structure. I/O systems-Hardware, application I/O subsystem, Transforming I/O requests to Hardware operations, STREAMS, performance.</p>	
Unit 8	<p>Protection- Protection, Goals of Protection, Principles of Protection, Domain of protection Access Matrix, Implementation of Access Matrix, Access control, Revocation of Access Rights, Capability- Based systems, Language- Based Protection. Security- The security problem, program threats, system and network threats cryptography as a security tool, user authentication, implementing security defenses, firewalling to protect systems and networks, computer – security classifications, case studies UNIX, Linux, Windows.</p>	

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

**Signature of Faculty**  
**Date:**

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





## TUTORIAL SHEETS - I

2013-14

Regulation: R11

### FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
Designation: Associate Professor  
Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

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:**



## TUTORIAL SHEETS - II

2013-14

Regulation: R11

### FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
Designation: Associate Professor  
Department:: IT

The Schedule for the whole Course / Subject is:: Operating Systems

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:



## TUTORIAL SHEETS - II

2013-14

Regulation: R11

### FACULTY DETAILS:

Name of the Faculty:: ROSHAN KAVURI  
Designation: Associate Professor  
Department:: IT

Date:

This Tutorial corresponds to Unit Nos.

Time:

Q1.

Q2.

Q3.

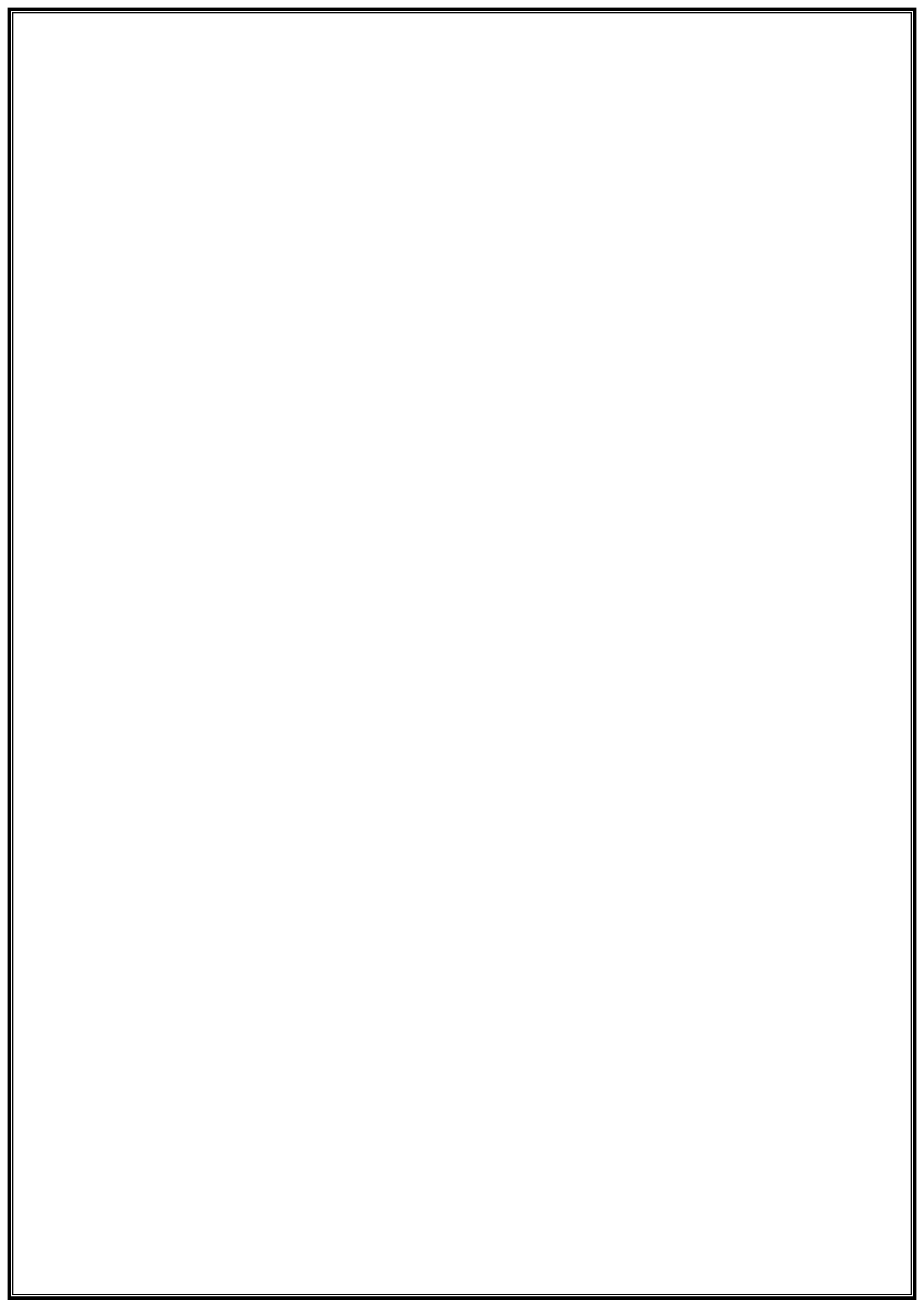
Q4.

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**  
Date:

**Signature of Faculty**  
Date:





## ILLUSTRATIVE VERBS FOR STATING INSTRUCTIONAL OBJECTIVES

2013-14

Regulation: R11

*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
<b>Knowledge</b>	<b>Comprehension Understanding</b>	<b>Application</b> of knowledge & comprehension	<b>Analysis</b> of whole w.r.t. its constituents	<b>Synthesis</b> combination of ideas/constituents	<b>Evaluation</b> judgement

Define	Convert	Change	Breakdown	Categorize	Appraise
Identify	Defend	Compute	Differentiate	Combine	Compare
Label	Describe (a procedure)	Demonstrate	Discriminate	Compile	Conclude
List	Distinguish	Deduce	Distinguish	Compose	Contrast
Match	Estimate	Manipulate	Separate	Create	Criticize
Reproduce	Explain why/how	Modify	Subdivide	Devise	Justify
Select	Extend	Predict		Design	Interpret
State	Generalize	Prepare		Generate	Support
	Give examples	Relate		Organize	
	Illustrate	Show		Plan	
	Infer	Solve		Rearrange	
	Summarize			Reconstruct	
				Reorganize	
				Revise	

#### **B. Affective Domain**

Adhere  
Assist  
Attend  
Change  
Develop  
Help  
Influence  
Initiate

Resolve  
Select  
Serve  
Share

#### **C. Psychomotor Domain (skill development)**


Bend  
Calibrate  
Compress  
Conduct  
Connect  
Convert  
Decrease  
Demonstrate

Dissect  
Draw  
Extend  
Feed  
File  
Grow  
Handle  
Increase

Insert  
Keep  
Elongate  
Limit  
Manipulate  
Move precisely  
Operate  
Paint

Perform  
Prepare  
Remove  
Replace  
Report  
Reset  
Run  
Set

Straighten  
Strengthen  
Time  
Transfer  
Type  
Weigh

	<b>LESSON PLAN</b> <b>Unit-1</b>	2013-14
		Regulation: R11

Name of the Faculty: ROSHAN KAVURI

Subject OPERATING SYSTEM

Subject Code

**Unit I**


INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time hrs	Ref	Teaching Method
1	Operating Systems over view, OS Functions.	1		
2	protection and security	1		
3	Distributed Systems, Special purpose systems.	1		
4	OS structure	1		
5	OS services And System calls	1		
6	System programs	1		
7	OS generations.	1		

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

1. Know what is an Operating System.
2. Different functions and services of OS
3. How to protect and provide Security to the OS
4. Different types and of OS
5. Different structures of OS
6. Understanding of a system calls and system programmes
7. Different generations of OS



	<b>ASSIGNMENT</b> <b>Unit-I</b>	2013-14
		Regulation: R11

### Assignment / Questions

1. What is an Operating System?
2. Different functions and services of OS?
3. How to protect and provide Security to the OS?
4. Different types and of OS?
5. Different structures of OS?
6. What is a system call? Differentiate the application programmes and system programmes
7. Explain the Different generations of OS?

**Signature of Faculty**

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

1. Know what is an Operating System. with an example
2. Know the Different functions and services of OS
3. How to protect and provide Security to the OS
4. Different types of Operating Systems.
5. Different structures of OS
6. Understanding of a system calls and system programmes
7. Know the Different generations of OS



**LESSON PLAN  
Unit-II**

2013-14

Regulation: R11

Name of the Faculty:

Subject

Subject Code

**Unit**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time hrs	Ref	Teaching Method
1	Process management	1		
2	Process concepts	1		
3	threads,	1		
4	scheduling –criteria,	1		
5	algorithms	1		
6	and their evaluation,	1		
7	Threads scheduling,	1		
8	case studies UNIX, Linux	1		
9	case studies Windows	1		

After completion of this lesson the student shall be able to

1. Visualize the need to study memory management in operating systems.
2. List the memory management requirements
3. Illustrate about loading programs into main memory
4. Define what virtual memory is and describe it
5. Discuss about different memory management techniques
6. Examine the application of virtual memory
7. Define the hardware and control structures
8. Explain about OS software
9. Page replacement algorithms with examples
10. Memory management in UNIX , LINUX and WINDOWS environment



**ASSIGNMENT  
Unit-II**

2013-14

Regulation: R11

**Assignment / Questions**

**Signature of Faculty**

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



**LESSON PLAN**  
**Unit-III**

2013-14

Regulation: R11

Name of the Faculty:

Subject

Subject Code

**Unit**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time in hrs	Ref	Teaching Method
1	Concurrency-Process synchronization	1		
2	the critical section problem	1		
3	semaphores, Paterson's solution	1		
4	Synchronization Hardware,	1		
5	classic problems of Synchronization	1		
6	monitors,	1		
7	synchronization examples,	1		
8	atomic transactions	1		
9	case studies LINUX,UNIX,WINDOWS.	1		

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

- 1.
- 2.
- 3.
- 4.



**ASSIGNMENT  
Unit-III**

2013-14

Regulation: R11

**Assignment / Questions**

**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:

Subject

Subject Code

**Unit**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time in hrs	Ref	Teaching Method
1	Principles of deadlocks- system model,	1		
2	deadlock characterization,	1		
3	deadlock prevention	1		
4	detection and avoidance,	1		
5	Recovery from deadlock.	1		

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

1. Know what is Dead lock and the principles of dead lock
2. Characteristics of dead lock.
3. How to prevent the Dead lock
4. How to detect the occurrence of dead lock.
5. How to avoid the deadlock
6. How to recover from the deadlock.



**ASSIGNMENT**  
**Unit-IV**


2013-14

Regulation: R11

**Assignment / Questions**

**Signature of Faculty**

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

	<b>LESSON PLAN</b> <b>Unit-V</b>	2013-14
		Regulation: R11

Name of the Faculty:

Subject

Subject Code

**Unit**


INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time in hrs	Ref	Teaching Method
1	Principles of deadlocks- system model,	1		
2	deadlock characterization,	1		
3	deadlock prevention	1		
4	detection and avoidance,	1		
5	recovery from deadlock.	1		

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

- 1.
- 2.
- 3.
- 4.



	<b>ASSIGNMENT</b> <b>Unit-V</b>	2013-14
		Regulation: R11

**Assignment / Questions**

**Signature of Faculty**

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



**LESSON PLAN**  
**Unit-VI**

2013-14

Regulation: R11

Name of the Faculty:

Subject

Subject Code


**Unit**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method

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

- 1.
- 2.
- 3.
- 4.

	<b>ASSIGNMENT</b> <b>Unit-VI</b>	2013-14
		Regulation: R11

**Assignment / Questions**

**Signature of Faculty**

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



**LESSON PLAN**  
**Unit-VII**

2013-14

Regulation: R11

Name of the Faculty:

Subject

Subject Code

**Unit**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time in hrs	Ref	Teaching Method
1	Mass storage structure – over view of mass storage structure	1		
2	disk structure ,disk attachment,	1		
3	disk scheduling	1		
4	swap-space management	1		
5	RAID structure, stable- storage implementation,	1		
6	Tertiary storage structure.	1		
7	I/O systems-Hardware, application I/O subsystem,	1		
8	Transforming I/O requests to Hardware operations, STREAMS, performance.	1		

On completion of this lesson the student shall be able to

- 1.
- 2.
- 3.
- 4.



**ASSIGNMENT**  
**Unit-VII**

2013-14

Regulation: R11

**Assignment / Questions**

**Signature of Faculty**

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



**LESSON PLAN**  
**Unit-VIII**

2013-14

Regulation: R11

Name of the Faculty: G Sreenivasulu

Subject Web Technologies

Subject Code

**Unit VIII**

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method

On completion of this lesson the student shall be able to

- 1.
- 2.
- 3.
- 4.



**ASSIGNMENT**  
**Unit-VIII**

2013-14

Regulation: R11

**Assignment / Questions**

**Signature of Faculty**

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