	System Monitoring	L	T	P	C
Version 1.0		2	0	0	2
Pre-requisites/ Exposure					
Co-requisites					

Course Objectives

The student shall be able to monitor systems on which applications are running for the purpose of monitoring system load, error reports and error logs.

Course Outcomes

At the end of the course student should be able to

CO1. Explain the need of system monitoring w.r.t. predicting failures.
CO2.Design false alarms to replicate error situations
CO3. Demonstrate visualization of error logs and generate graphs.
CO4. Design the process for monitoring system activities.

Catalog Description

One of the most important responsibilities a system administrator has, is monitoring their systems. As a system administrator you'll need the ability to find out what is happening on your system at any given time. Whether it's the percentage of system's resources currently used, what commands are being run, or who is logged on. This chapter will cover how to monitor your system, and in some cases, how to resolve problems that may arise. The Computer Officers run a system monitoring server which tracks things such as disk and memory use on monitored systems. It also carries out regular tests of services that are meant to be running and sends alerts automatically about problems. We can therefore catch problems on systems very quickly. The

systems we monitor include our servers and all of our managed workstations.Enterprise Manager comes with a comprehensive set of performance and health metrics that allows monitoring of key components in your environment, such as applications, application servers, databases, as well as the back-end components on which they rely (hosts, operating systems, storage, and so on).

Course Content

UNIT I **8 Lecture Hours**

Need of System Monitoring

Predicting system load, Failure prevention, Anomalies

UNIT II **7 Lecture Hours**

Tenets Of System Monitoring

Identifying as many problems as possible, Identifying problems as early as possible, Generating as few false alarms as possible, Automation

UNIT III **7 Lecture Hours**

Core Components of Monitoring Tools

Alerts, Graphs, Logs

UNIT IV **7 Lecture Hours**

Intelligently Monitoring the Right Metrics In Each Layer

Layer 0: The Application, Layer 1: The Process, Layer 2: The Server, Layer 3: The Hosting Provider, Layer 4: External Dependencies, Layer 5: The User

UNIT V **7 Lecture Hours**

Monitoring Strategies

Monitor potential faulty entities, Monitor existing faulty entities, Tuning and Continuous ImprovementSystem monitoring

Text Books:

1. Instant Nagios Starter - by Michael Guthrie

2. Building a Monitoring Infrastructure with Nagios - by David Josephsen
3. Continuous Delivery: Reliable Software Releases through Build, Test, and Deployment Automation - by Jez Humble (Author), David Farley (Author), Martin Fowler (Foreword)

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Examination Scheme:

Components	MSE	Presentation/Assignment/ etc	ESE
Weightage (%)	**20**	**30**	**50**

Relationship between the Course Outcomes (COs), Program Outcomes (POs) and Program Specific Objectives (PSOs)

Course Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 13	PSO 14	PSO 15
CO1		3	1			2					1		2	1	3
CO2		3	1			2					1		2	1	3
CO3		3	1			2					1		2	1	3
CO4		3	3			2					1		2	1	3
Average		3	1.25			2					1		2	1	3