VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information & Communication Technology)

Effective from July 2005

Semester I
Teaching and Evaluation Scheme

Paper Sr. No.	Paper Title	Teaching Schedule (Hours/Week)		University Exam Theory / Practical Duration |		Internal Exam Theory / Practical Duration |		Total Theory / Practical
		Lect	Prac	Hrs.	Marks	Hrs.	Marks	
ICT101	WADT – I	4	-	3	70	2	30	100
ICT102	WADT – II	4	-	3	70	2	30	100
ICT103	Software Engineering	4	-	3	70	2	30	100
ICT104	Advance Computer Networks - I	4	-	3	70	2	30	100
ICT105	Seminar	-	2	-	35	-	15	50
ICT106	Project	-	12	-	140	-	60	200
Total		**30**			**455**		**195**	**650**

WADT: Web Application Development Techniques

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Semester I

Paper No : ICT101 **L: 4, T:0, P:0 Hrs**
Paper Title : WADT -I
(Web Application Development Techniques – I)

PART – I (Java Server Pages)

1. **Introduction**
2. **JSP Architecture**
3. **JSP Access Models**
4. **JSP Syntax Basics**
   Directives :Page Directive, Include Directive
   Declarations, Expressions, Script lets, Comments
5. **Object Scopes**
6. **JSP Implicit Objects**
7. **Synchronization Issues**
8. **Exception Handling**
9. **Session Management**
10. **Standard Actions**
    Using JavaBean Components
    Forwarding Requests
    Request Chaining Including Requests
11. **JSP Tag Library**
12. **MVC architecture**

PART – II (Java Servlets)

13. **Introduction To Servlets.**
    Servlets Basics., Servlets API Basics.
14. **Advanced Servlet Concepts.**
    Writing Thread-Safe Servlets., HTTP Redirects.,servlets chaining Cookies.,session,Request Forwarding, Database Access with JDBC and connection pooling , Security, JavaServer, Packaging and Deployment, Servelets Troubleshooting.

Main Readings:

1. JavaServer Pages – Hans Bergsten – O'Reilly
2. JavaServer Pages – Larne Pekowsky – Addison-Wesley

Supplementary Readings:

1. Programming Java Server Pages & Servlests – Er V K Jain
2. Instant Java Server Pages – Paul Tremblett
3. Core Java server pages – Marty Hall , pearson education,2 nd edition
4. Developing Java Servlets – James Goodwill – Techmedia
5. Java Servlets – Karl Moss – TMH

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Semester I

Paper No : ICT102 **L: 4, T:0, P:0 Hrs**
Paper Title : WADT - II
(Web Application Development Techniques – II)

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1. Overview

2. Enterprise JavaBeans Technology

The EJB Container
Enterprise Beans
Remote and Home Interfaces , Business Methods , Entity Beans , Session Beans , Life Cycle Methods , Back to the Remote and Home Interfaces
Enterprise Beans as Distributed Objects

3. Entity Type Enterprise Beans

Container-Managed Persistence
Bean Class, Home Interface , Remote Interface , Callback Methods
Bean-Managed Persistence
Message driven beans
Session Type Enterprise Beans
Stateless Session Beans, Statefull Session Beans

4. Deploying Enterprise JavaBeans Technology Solutions

5. Enterprise JavaBeans Clients

6. Introduction to struts

Main Readings :

1. Mastering Enterprise JavaBeans by Ed Roman
2. Enterprise Java Beans – Richard Monson.

Supplementary Readings :

1. Enterprise JavaBeans, Tom Valesky, Pearless Eduction
2. Applying Enterprise JavaBeans, 2nd Edition, Valada Matena, Pearson Education
3. Java Beans Developers Reference. – Dan Brookshier.

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Semester I

Paper No : ICT103 **L: 4, T:0, P:0 Hrs**
Paper Title : Software Engineering

Software Matrix & Project Planning

Software Measurements., Metrics for Software Quality., Project Planning Objectives., Software Scope, Resources., Decomposition Techniques., Empirical Estimation Model., Make-Buy Decision.

1. **Risk Management**

   Software Risk & Risk Identification
   Risk Identification, Projection, Migration, Monitoring, Management.

2. **Project Scheduling & Tracking**

   Relationship between People & Effort., Defining a Task set for the Software Project., Selecting & Refining Software Engineering Tasks., Scheduling.

3. **Software Quality Assurance**

   Software Quality & Assurance., Software Review., Formal Technical Review., Software Quality Metrics., Formal Approaches to SQA., Software Reliability.
   ISO 9000 Quality Standards
   ISO Approach to Quality Assurance systems
   The ISO 9001 Standards.

4. **Object Oriented Concepts & Principles**

   Object Oriented Paradigm & Concepts, Identifying the elements of an Object Model, Management of Object Oriented Software Projects

5. **Object Oriented Analysis & Design**

   Domain Analysis, Generic Components of the OO Analysis & OOA Process.
   Object Relationship Model, Object Behavior Model.
   Generic Components of the OO Design & System Design Process.
   Object Design Process & Design Pattern.

Main Readings :

1. Software Engineering A practitioner's approach - Roger S Pressman - McGraw Hill
2. Object Oriented Modeling Design – James Rumbaugh, Michael Blaha – PHI
3. UML2 Bible - Pender Tom - Wiely

Supplementary Readings :

1. Software Engineering Concepts - Fairley R E - Mc-Graw Hill
2. Software Engineering - Lewis T G - Mc-Graw Hill
3. Fundamentals of Software Engineering – Carlo Ghezzi
4. IEEE standard for software user documentation, std 1063-1987
5. Software Engineering- A programming approach, D. Bell, I. Morrey, PHI
6. An Integrated Approach to Software Engineering - Pankaj Jalote - Narosa Pub.
7. UML in an Instant, Pende, Thomas - Wiely

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Semester I

Paper No : ICT104 **L: 4, T:0, P:0 Hrs**
Paper Title :Advance Computer Networks - I

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1. Physical and Data link Layers

Review of Physical Layer, Data link layer, IEEE802 Encapsulation, PPP, LAN Technologies, ISDN, Frame-relay & ATM, Data link Protocol,

2. Network Layer

Network Layer: ARP, RARP, ICMP, Routing Algorithms and Protocols, Router Operation, Router Configuration, Internetworking, IPv4 Protocol, IPv6 (an overview).

3. Transport Layer

User Datagram Protocol: Header, Checksum and Port Numbers.
Transmission Control Protocol: Services and Headers, Connection establishment and Termination, Timeout of Connection Establishment and TCP timeout and retransmission, Maximum Segment Size, Reset Segments, TCP Options.

4. Application Layer

Application Layer: DNS, SNMP, RMON, Electronic Mail, WWW, SMTP, FTP, TFTP, TELNET, HTTP, Network Security: Firewalls (Application and packet filtering), Virtual Private Network, Cryptography

Main Readings:

1. Behrouz A. Forouzan, "TCP/IP Protocol Suit", TMH, 2000.
2. TCP/IP Illustrated Volume I, W. Richard Stevens, Pearson Education

Supplementary Readings:

1. Tananbaum A. S., "Computer Networks", 3rd Ed., PHI, 1999.
2. Black U, "Computer Networks-Protocols, Standards and Interfaces", PHI, 1996.
3. Stallings W., "Data and Computer Communications", 6th Ed., PHI, 2002.
4. Stallings W., "SNMP, SNMPv2, SNMPv3, RMON 1 & 2", 3rd Ed., Addison Wesley, 1999.
5. Laurra Chappell (Ed), "Introduction to Cisco Router Configuration", Techmedia.

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Semester I

Paper No : ICT105 **L: 0, T:0, P:2 Hrs**
Paper Title : Seminar

The students will be required to prepare a seminar paper and give presentation.

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Semester I

Paper No : ICT106 **L: 4, T:0, P:12 Hrs**
Paper Title : Project

The students are required to carry out project work for part time during the semester based upon the Theory subjects.