SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED [M.S.]

Choice Based Credit System

(CBCS Pattern)

Faculty of Computer Science & Technology

Syllabus of B.Sc. Network Technology S.Y

Effective from Academic Year (2017-2018)

Under Graduate (UG) Program

Semester	Subject Code	Course Name	Credit		Total Credit
			Internal	External	
Semester III	S3.AEC.1	Logical Reasoning	1	3	4
	S3.CC.2	Basic of Computer Network	1	3	4
	S3.CC.3	Basic of Computer Hardware	1	3	4
	S3.CC.4	Fundamental of Linux	1	3	4
	S3.CC.5	Elective- Operating System Next Generation Networks Mobile Communication	1	3	4
	S3.Lab 1	Lab Course – 1 (CN)		2	2
	S3.Lab 2	Lab Course – 2 (Comp Hardware)		2	2
	S3.Lab 3	Lab Course – 3 (Linux)		2	2
	S3.SEC.1	1. Office Automation 2. PC Installation 3. Web Development	2		2
		TOTAL	**7**	**21**	**28**
Semester IV	S4. AEC.1	Numerical Aptitude	1	3	4
	S4.CC.2	Network Administration	1	3	4
	S4.CC.3	Network Infrastructure	1	3	4
	S5.CC.4	Linux Administration	1	3	4
	S5.CC.4	Elective- TCP/IP Computer System Security NOSA	1	3	4
	S4.Lab 1	Lab Course – 1 (NA)		2	2
	S4.Lab 2	Lab Course – 2 (NI)		2	2
	S4.Lab 3	Lab Course – 3 (Linux Administration)		2	2
	S4.SEC-1	1. Multimedia and Applications 2. Computer Tricks 3. DTP	2		2
		TOTAL	**7**	**21**	**28**

Name of Course	B.Sc. NT SY
Semester	III Semester
Name of Subject	Logical Reasoning
Subject Code	S3.AEC.1

Unit I

1		Series, Analogy and Classification	Lectures Required	Ref no
	A	**Series:** Types of series**,** Alphabet series, Alpha numeric series, Examples on continues pattern series.	03	1
	B	**Analogy:** Completing the Analogous Pair, Direct/Simple Analogy, Choosing the Analogous Pair, Double Analogy, Number analogy, Alphabet analogy, Correlation between letters/numbers.	02	1
	C	**Classification:** Choosing the odd word, Choosing the odd numeral, Choosing the odd letter group.	02	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit II

2		Coding-Decoding	Lecturers Required	Ref no
	A	**Coding-Decoding:** Letter coding, Direct Letter Coding, Number/Symbol Coding.	03	1
	B	**Substitution:** Concept of substitution, Problem solving by using substitution.	01	1
	C	**Deciphering**: Deciphering messages word codes, Deciphering numbers/symbol codes for messages.	02	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit III

3		Blood Relation	Lectures Required	Ref no
	A	Introduction to relations	01	1
	B	Concepts of deciphering relations based problems	02	1
	C	Problems on deciphering jumbled up descriptions	01	1
	D	Relation puzzle	02	1
	E	Coded relations.	01	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit IV

4		Seating or Placing Arrangement	Lectures Required	Ref no
	A	Problems based on linear and circular based arrangement.	06	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit V

5		Direction Sense Test	Lectures Required	Ref no
	A	Introduction	01	1
	B	Problems based on angular changes in direction	02	1
	C	Problems on Shadows	01	1
	D	General Problems based on Pythagoras Theorem	01	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publications

Unit VI

6		Syllogism and Data Sufficiency	Lectures Required	Ref no
	A	**Syllogism:** Introduction of logic, Rules of syllogism, Two statement problem, Three statement problem	07	1
	B	**Data Sufficiency**: Problems of Data sufficiency based on all Chapters.	03	1

References

Sr. No.	Name of the book	Author	Publication
1	A Modern Approach to Verbal & Non-Verbal Reasoning	Dr.R.S Aggarwal	S. Chand and Company Publicatio
2	Test of Reasoning	Edgar Thorpe	McGraw Hill Education

Name of Course	B.Sc. NT SY
Semester	III Semester
Name of Subject	Basic of Computer Network
Subject Code	S3.CC.2

Unit – I

1.		**Data Communication Concepts**	**Lecturers Required**	**Ref. No.**
	a)	A Communication model	02	1,2
	b)	Data Communication Task	01	1,2
	c)	Networks:- LAN, WAN	03	1,2
	d)	Wireless LAN Client Server model Peer to Peer Network Analog Signal Digital Signal	05	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Data and Computer Communications	William Stallings	
2.	Computer Networks	Andrew S. Tanenbaum	

Unit – II

2.		**Protocol Architecture / Multiplexing**	**Lecturers Required**	**Ref. No.**
	a)	The need for protocol architecture Network architecture OSI Model TCP/IP Reference Model	04	1,2
	b)	Multiplexing FDM	03	1,2
	c)	Connection Oriented & Connectionless	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Data and Computer Communications	William Stallings	
2.	Computer Networks	Andrew S. Tanenbaum	

Unit – III

3.	Transmission Media and Network Topology		Lecturers Required	Ref. No.
	a)	Transmission Media- Magnetic media. Twisted Pair Coaxial cable Fiber optics	04	1,2
	b)	Topologies with advantages & disadvantages:- Bus, Ring, Star, Tree, Mesh.	03	1,2
	c)	Infrared. Microwave.	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Local Area Networks	Peter Hudson	BPB
2.	Computer Networks	Andrew S. Tanenbaum	

Unit – IV

4.	Ethernet & Circuit Switching and Packet Switching:		Lecturers Required	Ref. No.
	a)	Switching Circuit Switching Packet Switching Message Switching	04	1,2
	b)	Ethernet Overview of Ethernet 10 Base, 100 Base T	03	1,2
	c)	CSMA/CD	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Local Area Networks	Peter Hudson	BPB
2.	Computer Networks	Andrew S. Tanenbaum	

Unit – V

5.	Network Devices & Protocol		Lecturers Required	Ref. No.
	a)	Network Devices Hub, Switch , Repeaters Router , Gateway ,Bridge	04	1,2
	b)	Protocol: FTP, HTTP, SMTP , DNS	03	1,2
	c)	IP address	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Local Area Networks	Peter Hodson	BPB
2.	Computer Networks	Andrew S. Tanenbaum	

Unit – VI

6.	Internet & Other Technologies	Lecturers Required	Ref. No.
	a) Internet Internet & Intranet Internet Service Providers E-Mail URL	04	1, 2
	b) ISDN, Token Ring FDDI	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Local Area Networks	Peter Hodson	BPB
2.	Computer Networks	Andrew S. Tanenbaum	

Name of Course	B.Sc. NT SY
Semester	III Semester
Name of Subject	Basics of Computer Hardware
Subject Code	S3.CC.3

Unit – I

1.	**Hardware Component on Motherboard**		**Lecturers Required**	**Ref. No.**
	a)	Mother Board and its types	02	1, 2
	b)	Types of HDD	01	1, 2
	c)	Types of RAM	02	1, 2
	d)	Types of Chipsets	01	1, 2
	e)	Microprocessor and its types	01	1,2
	f)	IDE and SATA cables	01	
	g)	Other parts on motherboard	01	

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Install & Servicing ISBN 1259082406, 9781259082467	Balsubramanian D	Tata McGraw Hill
2	Basics of Computer Hardware and LAN Set-up	J. C. Shaikh	J S Publication

Unit – II

2		**Installation**	**Lecture Required**	**Ref.No**
	a)	Introduction to BIOS	03	1
	b)	Requirement of installing Windows 7 OS	02	
	c)	Installation Steps for Windows 7	01	
	d)	Requirement of installing Windows 8 OS	01	
	e)	Installation Steps for Windows 8	01	

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Install & Servicing ISBN 1259082406, 9781259082467	Balsubramanian D	Tata McGraw Hill
2	Basics of Computer Hardware and LAN Set-up	J. C. Shaikh	J S Publication

Unit- III

3.	Installation of Packages / Software's	Lecturers Required	Ref. No.
a)	Installation of Microsoft Word	04	1, 2
b)	Installation of PDF reader	03	1, 2
c)	Installation of Browsing Software's	02	1, 2
d)	Installation of LAN drivers	02	1, 2
e)	Maintenance & documentation	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Install & Servicing ISBN 1259082406, 9781259082467	Balsubramanian D	Tata McGraw Hill
2	Basics of Computer Hardware and LAN Set-up	J. C. Shaikh	J S Publication

Unit- IV

4.	Crimping CAT-5 Cable	Lecturers Required	Ref. No.
a)	Color codes and its mechanisms	02	1, 2
b)	Types of Cat-5 cable	02	1, 2
c)	Crimping Cat-5 Straight Cable	01	1, 2
d)	Crimping Cat-5 Cross-over Cable	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Install & Servicing ISBN 1259082406, 9781259082467	Balsubramanian D	Tata McGraw Hill
2	Basics of Computer Hardware and LAN Set-up	J. C. Shaikh	J S Publication

Unit V

5.	Assigning IP addresses	Lecturers Required	Ref. No.
a)	Introduction to IPV4 addresses and its classes	02	1, 2
b)	Assigning IPV4 and IPV6 addresses	01	1, 2

	c)	Troubleshooting of connections by using- 1) Ping 2) Pathping 3) Tracert 4) Arp	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Install & Servicing ISBN 1259082406, 9781259082467	Balsubramanian D	Tata McGraw Hill
2	Basics of Computer Hardware and LAN Set-up	J. C. Shaikh	J S Publication

Unit VI

6.	Printer Installation and Drive Map		Lecturers Required	Ref. No.
	a)	Types of Printers	02	1, 2
	b)	Installing Local Printer	01	1, 2
	c)	Installing Remote/Network Printer	02	1, 2
	d)	Connect a Network printer on Client side	02	1, 2
	e)	Folder Share and map a Drive	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Install & Servicing ISBN 1259082406, 9781259082467	Balsubramanian D	Tata McGraw Hill
2	Basics of Computer Hardware and LAN Set-up	J. C. Shaikh	J S Publication

Name of Course	B.Sc. NT SY
Semester	III Semester
Name of Subject	Fundamental Of Linux
Subject Code	S3.CC.4

Unit – I

1.		Introduction	Lecturers Required	Ref. No.
	a)	History of Linux	01	1, 2
	b)	Advantages of Linux, Flavors of Linux	02	1, 2
	c)	Installation steps of Linux	03	1, 2
	d)	Linux loader, Linux kernel	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Red Hat Linux 7 Unleashed	Bill Ball, David pitts	Techmedia SAMS Publication
2.	Red Hat Linux & fedora unleashed	Bill Ball ,Hoyt Dust	

Unit – II

2.	Working with Linux		Lecturers	Ref. No.
	a)	Working with the Linux File system, logging in to and working with linux	02	1, 2
	b)	Working with shell, using text editors, changing user information	03	1, 2
	c)	Working with File permission	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Red Hat Linux & fedora unleashed	Bill Ball ,Hoyt Dust	
2.	Red Hat Linux 7 Unleashed	Bill Ball,David pitts	Techmedia SAMS Publication

Unit – III

3	Linux Commands and Utilities		Lecturers Required	Ref. No.
	a)	Simple commands(files related, directory related, File system related commands)	02	1, 2
	b)	Administrative commands(user and group administration ,backup and restore, compression commands, process and resources commands	03	1, 2

	c)	Communication commands(write, wall , mail ,mesg ,motd ,prelogin mesg	01	1, 2
	d)	File system commands(dd,dc,df,du),Networking commands(ifconfig,ping, route,netstat) ,printer related commands	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Red Hat Linux 7 Unleashed	Bill Ball,David pitts	Techmedia SAMS Publication
2.	Fedora Unleashed	Ball and Pitts	

Unit – IV

4.		**System Administration**	Lecturers	Ref. No.
	a)	Performing System maintenance,system services and runlevels.	03	1, 2
	b)	Managing software with RPM :-Installing ,Uninstalling, Upgrading software	03	1, 2
	c)	Managing users and managing Groups and managing passwords.	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Red Hat Linux -7	Bill Ball	S.C.Jain for Techmedia
2.	Fedora Unleashed	Ball and Pitts	

Unit – V

5.		**Backup strategies**	Lecturers Required	Ref. No.
	a)	Choosing Backup Strategies and Operations.	02	1, 2
	b)	Choosing Backup hardware and media.	02	1, 2
	c)	Using backup software and commands.	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	The Complete Reference	Richard Peterson	BPB
2.	Fedora Unleashed	Ball and Pitts	

Unit – VI

5.		Printing With Linux	Lecturers Required	Ref. No.
	a)	Configuring and Managing print services	02	1, 2
	b)	Local printer installation	01	1, 2
	c)	Network printer installation	03	1, 2
	d)	CUPS	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Red Hat Linux -7	Bill Ball	
2.	Fedora Unleashed	Ball and Pitts	

Name of Course	B.Sc. NT SY
Semester	III Semester
Name of Subject	Elective- I Operating System
Subject Code	S3.CC.5

Unit – I

1.	Introduction		Lecturers Required	Ref. No.
	a)	What Operating System Do – 1) User View 2) System View 3) Defining OS	1	1
	b)	Computer System Organization	2	1
	c)	Computer System Architecture – 1) Single Processor System 2) Multiprocessor System	2	1
	d)	Extended Machine Concept	1	2
	e)	Operating System Structure	1	1
	f)	An Operating System Resource Manager	2	2

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8th Edition
2	Operating Systems	Stuart E. Madnick, John J. Donovan	Tata McGraw-Hill Publishing Limited

Unit – II

2.	System Structure		Lecturers Required	Ref. No.
	a)	Operating System Services	1	1
	b)	User Operating System Interface – 1) Command Interpreter 2) GUI	1	1, 2
	c)	System Boot	1	1, 2
	d)	System Calls	1	1, 2
	e)	Types of System Calls – 1) Process Control 2) File Management 3) Device Management 4) Information Maintenance 5) Communication 6) Protection	3	1

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8th Edition
2	Operating Systems	Achyut Godbole, Atul Kahate	McGraw Hill Education Third Edition

Unit – III

3.	Process Management		Lecturers Required	Ref. No.
	a)	Process Concept – 1) The Process 2) Process States 3) Process Control Block	3	1, 2
	b)	Process Scheduling – 1) Scheduling Queues 2) Schedulers 3) Context Switching	3	1, 2
	c)	Scheduling Criteria	1	1
	d)	Scheduling Algorithms – 1) FCFS 2) SJF 3) Priority Scheduling 4) Round-Robin Scheduling	4	1

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8th Edition
2	Operating Systems	Achyut Godbole, Atul Kahate	McGraw Hill Education Third Edition

Unit – IV

4.	Multithreaded Programming		Lecturers Required	Ref. No.
	a)	Overview	1	1, 2
	b)	Multithreading Models	2	1, 2
	c)	Thread Libraries – pthreads	1	1

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8th Edition
2	Operating Systems	Achyut Godbole, Atul Kahate	McGraw Hill Education Third Edition

Unit – V

5.	Memory Management		Lecturers Required	Ref. No.
	a)	Introduction	1	2
	b)	Contiguous Memory Allocation 1) Memory Allocation 2) Fragmentation	2	1
	c)	Paging 1) Basic Method 2) Hardware Support	2	1
	d)	Segmentation 1) Basic Method 2) Hardware Support	3	1

References:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8th Edition
2	Operating Systems	Achyut Godbole, Atul Kahate	McGraw Hill Education Third Edition

Unit – VI

6.	File System		Lecturers Required	Ref. No.
	a)	File concept	1	1
	b)	Access Methods 1) Sequential 2) Direct	2	1
	c)	Directory and Disk Structure 1) Directory Overview 2) Single Level Directory 3) Two Level Directory 4) Tree Structure Directory	3	1
	d)	Allocation Methods 1) Contiguous Allocation 2) Linked Allocation 3) Indexed allocation	3	1
	e)	Free Space Management 1) Bit Vector 2) Linked List 3) Grouping 4) Counting	2	1

Reference:

Sr. No.	Name of the Book	Author	Publication
1	Operating System Concepts	Abraham Silberschatz, Peter Galvin, Greg Gagne	WILEY India Edition 8th Edition

Elective- II   Next Generation Networks

Unit – I

1.	Converged Services for Next Generation Networks		Lecturers Required	Ref. No.
	a)	GSM/UMTS Network protocols:	02	1, 2
	b)	SS7 and 14tandardi basics	01	1, 2
	c)	Supplementary Services UMTS Intelligent Network CAMEL	05	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Next Generation Networks: Perspectives and Potentials	Jingming Li Salina, Pascal Salina	John Wiley & Sons
2.	Next-Generation Network	Robert Wood	Cisco Press

Unit – II

2.	Introduction to Next Generation Networks		Lecturers Required	Ref. No.
	a)	NGN architecture NGN control architectures and protocols	03	1, 2
	b)	Multi-access to the services: 3G WiFi DSL	03	1, 2
	c)	Social Networks:	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Next Generation Networks: Perspectives and Potentials	Jingming Li Salina, Pascal Salina	John Wiley & Sons
2.	Next-Generation Network Services:	Robert Wood	Cisco Press

Unit- III

3.	Wireless Access and Transport Technologies		Lecturers Required	Ref. No.
	a)	RAN architecture network devices, interfaces and protocols	04	1, 2
	b)	Radio Access Network Architecture for GSM, GPRS and UMTS,	03	1, 2
	c)	TDMA systems	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Next Generation Networks: Perspectives and Potentials	Jingming Li Salina, Pascal Salina	John Wiley & Sons
2.	Next-Generation Network Services:	Robert Wood	Cisco Press

Unit- IV

4.	**CDMA systems and OFDMA systems.**		Lecturers Required	Ref. No.
	a)	Scheduling issues for GPRS, UMTS and WiMAX	04	1, 2
	b)	UMTS Procedure and protocol used for resource allocation	03	1, 2
	c)	PDP Context and TBF allocation.	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Next Generation Networks: Perspectives and Potentials	Jingming Li Salina, Pascal Salina	John Wiley & Sons
2.	Next-Generation Network Services:	Robert Wood	Cisco Press

Unit V

5.	**WPAN, WLAN, WMAN and Broadcast technologies**		Lecturers Required	Ref. No.
	a)	WLAN WPAN WMAN Zigbee	04	1, 2
	b)	WiFi: Standards, performance, usage and applications, new evolutions ,WiMAX Security in Wireless Networks	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Next Generation Networks: Perspectives and Potentials	Jingming Li Salina, Pascal Salina	John Wiley & Sons
2.	Next-Generation Network Services:	Robert Wood	Cisco Press

Unit VI

6.	Network applications		Lecturers Required	Ref. No.
	a)	Wireless LAN Microwave Infrared	04	1, 2
	b)	Network topology calculus Bluetooth cellular Wireless Networks	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Next Generation Networks: Perspectives and Potentials	Jingming Li Salina, Pascal Salina	John Wiley & Sons
2.	Next-Generation Network Services:	Robert Wood	Cisco Press

Elective- III   Mobile Communication

Unit – I

1.	Introduction		Lecturers Required	Ref. No.
	a)	Application	02	1, 2
	b)	A Short History Of wireless Communication	01	1, 2
	c)	Some Open Research Topic	02	1, 2
	d)	A Simplified reference Model	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Mobile Communications Second Edition	Jochen Schiller	Pearson Education
2.	Mobile Cellular Telecommunications Second Edition	William C.Y.Lee	Mc-Graw-Hill

Unit – II

2		Introduction to Cellular Mobile Systems	Lecture Required	Ref.No
	a)	Introduction	02	1,2
	b)	Basic Cellular System	01	1,2
	c)	Performance Criteria	02	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Mobile Communications Second Edition	Jochen Schiller	Pearson Education
2.	Mobile Cellular Telecommunications Second Edition	William C.Y.Lee	Mc-Graw-Hill

Unit- III

3.	Medium access control		Lecturers Required	Ref. No.
	a)	Motivation for specialized MAC	04	1, 2
	b)	SDMA	03	1, 2
	c)	FDMA	02	1, 2
	d)	TDMA	02	1, 2
	e)	CDMA	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Mobile Communications Second Edition	Jochen Schiller	Pearson Education
2.	Mobile Cellular Telecommunications Second Edition	William C.Y.Lee	Mc-Graw-Hill

Unit- IV

4.	Telecommunication System		Lecturers Required	Ref. No.
	a)	GSM	03	1, 2
	b)	DECT	02	1, 2
	c)	TETRA	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Mobile Communications Second Edition	Jochen Schiller	Pearson Education
2.	Mobile Cellular Telecommunications Second Edition	William C.Y.Lee	Mc-Graw-Hill

Unit V

5.	Wireless LAN		Lecturers Required	Ref. No.
	a)	Infrared V/s radio transmission	02	1, 2
	b)	Infrastructure and along Network	01	1, 2
	c)	IEEE 802.11	02	1, 2
	d)	HIPERLAN	01	1, 2
	e)	Bluetooth	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Mobile Communications Second Edition	Jochen Schiller	Pearson Education
2.	Mobile Cellular Telecommunications Second Edition	William C.Y.Lee	Mc-Graw-Hill

Unit VI

6.	Mobile Network Layer		Lecturers Required	Ref. No.
	a)	Mobile IP	01	1, 2
	b)	Dynamic Configuration Protocol	03	1, 2
	c)	Mobile ad-hoc Networks	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Mobile Communications Second Edition	Jochen Schiller	Pearson Education
2.	Mobile Cellular Telecommunications Second Edition	William C.Y.Lee	Mc-Graw-Hill

Lab Course-3 (S3.Lab1)
(Computer Network)

Sr.No	Title of program	Require Hours
1	Lab: Design LAN for workgroup	2
2	Cable Coding (Straight Over, Crossover)	2
3	Study of Network Devices.	2
4	Study of Resource Sharing	2
5	Study of IP addressing	2
6	Study of Assigning IP address	2
7	Study of group policy	2
8	Creating an share Folder	2
9	Study Remote desktop configuration	2
10	Study of Network related command	2

References:

Sr.No	Book	Author	Publication
1	Data and Computer Communications	William Stallings	Pearson Education India
2	Local Area Network	Gerd Keiser	Tata McGraw-Hill
3	Computer Networks	Andrew S. Tanenbaum	Prentice Hall of India

Lab Course-3 (S3.Lab2)
(Fundamental of Computer Hardware)

Sr.No	Title of program	Require Hours
1	Study of Hardware Component on Motherboard	2
2	Study of identifying RAM type and Installation of RAM SD, DDR, DDR1, DDR2, DDR3	2
3	Study of HDD Drive and installation of HDD	2
4	Study of Assemble a Computer System.	2
5	Study of Installing Windows 7 OS	2
6	Study of BIOS options	2
7	Study of Installing Windows 8 OS	2
8	Study of Installing Application Packages/Software – Microsoft Word, PDF reader, Browsing Software's	2
9	Study of Transmission Medias – Twisted Pair Cable, Co-ax Cable, Fiber-optic Cable.	2
10	Installing any Local Printer	2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Install & Servicing ISBN 1259082406, 9781259082467	Balsubramanian D	Tata McGraw Hill
2	Basics of Computer Hardware and LAN Set-up	J. C. Shaikh	J S Publication

Lab Course-3 (S3.Lab3)
(Fundamental of Linux)

Sr.No	Title of program	Require Hours
1	Lab: installation of linux	2
2	Study of files and directory related commands	2
3	Study of process and resources related commands	2
4	Study of backup and recovery commands	2
5	Study of file system commands	2
6	Study of compression and decompression commands	2
7	Study of networking commands	2
8	Study of communication commands	2
9	Study of printer related commands	2
10	Study of shell scripting	2

References:

Sr.No	Book	Author	Publication
1	The Complete Reference	Richard Peterson	BPB
2	Fedora Unleashed	Ball and Pitts	
3	Red Hat Linux & Fedora Unleashed	Gill Ball & Hoy Dust	

Name of Course	B.Sc. NT SY
Semester	III Semester
Name of Subject	Office Automation
Subject Code	S3.SEC1 (1)

S3.SEC.1 (1) Office Automation
1. MS-Word
Opening screen of MS-Word 10, Formatting using different tools (font, paragraph, borders and shading, page setup, find and replace), working with tables, custom dictionary, mail-merge
2) MS-Excel
Opening screen of MS – Excel, working with formulas and functions, creating and formatting charts.
3) MS-PowerPoint
Opening screen of MS-PowerPoint, designing and applying animation effects.
4) MS-Access.
 Creating tables in MS-Access, applying query, database connectivity
LIST FOR PRACTICALS
1. Study opening screen of MS-Word (title bar, menu-bar, tool box, status bar, standard tool bar, task bar)
2. Study of Font tool box.
3. Study of paragraph dialog box.
4. Study of basic Editing tools (cut, copy, paste, undo, redo).
5. Study of page setup (how to take the printouts).
6. Study of find and replace dialog box.
7. Study of creating custom dictionary.
8. Study of border and shading dialog box.
9. Study of Working with different styles in MS-Word.
10. Study of Working with tables.
11. Study of creating time table by the help of tables.
12. Study of Opening screen of MS-Excel.
13. Study of Data validation in MS-Excel.
14. Study of data sorting and data filtering in MS-Excel.
15. Study of goal seek and scenario manager in MS-Excel.
16. Working with formulas in MS-Excel (how to build formula, difference between function and formulas).
17. Study of different basic functions MS-Excel.
18. Study of string Functions.
19. Study of logical functions.
20. Creating mark sheet by using different functions.
21. Study of mathematical functions.
22. Study with financial functions
23. Study with date and time functions.
24. Creating charts in MS-Excel.
25. Study of exploring charts in MS-Excel.
26. Study of opening screen of MS-PowerPoint.
27. Study of design and animation effects in MS-PowerPoint

28. Study of making PowerPoint presentation (with different effects).
29. Study of opening screen of MS-Access.
30. Study of creating tables in MS-Access.
31. Study of applying query in MS-Access.
32. Study of database connectivity in MS-Access.

References:-

Sr. No.	Name of the Book	Author	Publication
1.	Microsoft office 2000	Complete	BPB Publication
2.	Mastering Word 2000	Mansfield	BPB Publication
3.	Essential MS-Word 2000	M-Marmel	BPB Publication
4.	MS-Access	Varsha Varma Shekhar	-
5.	Teach Yourself MS-Excel 2000 In 24 Hours	-	BPB Publication.

Name of Course	B.Sc. NT SY
Semester	III Semester
Name of Subject	PC Installation
Subject Code	S3.SEC1 (2)

Sr.No	Title of program	Require Hours
1	Study of Hardware Component on Motherboard	1
2	Study of RAM	1
3	Study of HDD	1
4	Study of Assemble a Computer System.	1
5	Study of Installing Windows 7 OS	1
6	Study of BIOS options	1
7	Study of Installing Windows 8 OS	1
8	Study of Installing Application Packages/Software – Microsoft Word, PDF reader, Browsing Software's	1
9	Study of Transmission Medias – Twisted Pair Cable, Co-ax Cable, Fiber-optic Cable.	1
10	Study of Crimping CAT-5 Straight Cable	1
11	Study of Crimping CAT-5 Cross over Cable	1
12	Study of Networking Devices – Hub, Switch, Router	1
13	Study of assigning IPV4 and IPV6 addresses to computer system	2
14	Study of Windows Firewall and Windows Defender	1
15	Troubleshoot to find connectivity problem	1
16	Performing another computer using Remote Desktop	2
17	Performing another computer using Team Viewer/Ammy Admin	1
18	Installing any Local Printer	1
19	To share a printer	1
20	Study of assigning IPV4 and IPV6 addresses to computer system	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Computer Install & Servicing ISBN 1259082406, 9781259082467	Balsubramanian D	Tata McGraw Hill
2	Basics of Computer Hardware and LAN Set-up	J. C. Shaikh	J S Publication

Name of Course	B.Sc. NT SY
Semester	III Semester
Name of Subject	Web Development
Subject Code	S3.SEC1 (3)

1. Introduction to PHP
    1.1   Basic Syntax
    1.2   Sending Data to the Web Browser
    1.3   Understanding PHP, HTML, and White Space
    1.4   Writing Comments
    1.5   What Are Variables?
    1.6   About Strings
    1.7   About Numbers
    1.8   About Constants

2. Programming with PHP
    2.1   Creating an HTML Form
    2.2   Handling an HTML Form
    2.3   Managing Magic Quotes
    2.4   Conditionals and Operators
    2.5   Validating Form Data
    2.6   What Are Arrays?
    2.7   For and While Loops

3. String Manipulation and Regular Expression
    3.1   Creating and accessing String, Searching & Replacing String
    3.2   Formatting, joining and splitting String, String Related Library functions
    3.3   Use and advantage of regular expression over inbuilt function

4. Creating Dynamic Web Sites
    4.1   Including Multiple Files
    4.2   Handling HTML Forms with PHP Redux
    4.3   Making Sticky Forms
    4.4   Creating and Calling Your Own Functions
    4.5   Variable Scope
    4.6   Date and Time Functions
    4.7   Sending Email

5. Using PHP with MySQL
    5.1   Connecting to MySQL and Selecting the Database
    5.2   Executing Simple Queries
    5.3   Retrieving Query Results
    5.4   Ensuring Secure SQL
    5.5   Counting Returned Records
    5.6   Updating Records with PHP

6. Cookies and Sessions
    6.1   Using Cookies
    6.2   Using Sessions
    6.3   Sessions and Cookies
    6.4   Improving Session Security

References

1. PHP and MySQL for Dynamic Web Sites: Visual Quickpro Guide, Second Edition by Larry Ullman
2. Programming PHP By Rasmus Lerdorf, Kevin Tatroe, Peter MacIntyre

Practical Assignments
1. Creating HTML FORM
2. Validating Form Data
3. Date and Time Functions
4. Sending Email.
5. Program based on arrays.
6. Program based on loops.
7. Making Sticky Forms
8. Creating and Calling Your Own Functions
9. Including multiple files.
10. Using the MySQL Client
11. Creating Databases and Tables
12. Connecting to MySQL and Selecting the Database , Executing Simple Queries , Retrieving Query Results , Ensuring Secure SQL , Counting Returned Records , Updating Records with PHP
13. Using Cookies
14. Using Sessions.

Name of Course	B.Sc. NT SY
Semester	IV Semester
Name of Subject	Numerical Aptitude
Subject Code	S4. AEC.1

Unit- I

1.	**Introduction of Number system**		Lectures Required	Ref. No.
	a)	**Numbers**: Types of numbers	02	1,2
	b)	Divisibility tests of numbers	02	1,2
	c)	arithmetic progression	01	1,2
	d)	Geometric progression	02	1,2
	e)	Relationship between Arithmetic progression and Geometric progression	01	1,2
	f)	**HCF and LCM** : Methods of calculating highest common factor and greatest common divisor	01	1,2
	g)	factorization method, Division method, Finding HCF and LCM more than two numbers	01	1,2
	h)	LCM and HCF of fractions and decimal numbers, Applications of LCM and HCF.	01	1,2

References:

Sr.No	Name of Book	Author	Publication
1.	1) Quantitative Aptitude by Dr.R.S Aggrawal , S. Chand and Company Publications	Dr.R.S Aggrawal , S. Chand	Company Publication
2.	Quantitative Aptitude	Abijit Guha	Tata McGraw Hill Publications
3.	Objective Arithmetic	S.L Gulati	Cosmos book hive Pvt,5th edition2015

Unit-II

2.	**Average, Problem on ages, Percentage, and Profit and Loss**		Lectures Required	Ref. No.
	a)	**Average**: Definition of average, Formulae and theoretical problem on average.	02	1,2
	b)	**Problem on ages**: simultaneous equations and their applications	02	1,2
	c)	Theoretical problems on ages, Theoretical problems on numbers.	01	1,2
	d)	**Percentage**: Concept of percentage, Application of percentage, Results on populations, Result on depreciations, Theoretical problem on percentage.	02	1,2
	e)	**Profit and Loss:** Definition of cost price, selling price and profit, Formulae of profit and loss, Theoretical problems on profit and loss.	01	1,2

Sr.No	Name of Book	Author	Publication
1.	1) Quantitative Aptitude by Dr.R.S Aggrawal , S. Chand and Company Publications	Dr.R.S Aggrawal , S. Chand	Company Publication
2.	Quantitative Aptitude	Abijit Guha	Tata McGraw Hill Publications
3.	Objective Arithmetic	S.L Gulati	Cosmos book hive Pvt,5th edition2015

Unit-III

3.	**Percentage,**		Lectures Required	Ref. No.
	a)	**Percentage**: Concept of percentage, Application of percentage, Results on populations,	02	1,2
	b)	Result on depreciations, Theoretical problem on percentage.	02	1,2

Sr.No	Name of Book	Author	Publication
1.	1) Quantitative Aptitude by Dr.R.S Aggrawal , S. Chand and Company Publications	Dr.R.S Aggrawal , S. Chand	Company Publication
2.	Quantitative Aptitude	Abijit Guha	Tata McGraw Hill Publications
3.	Objective Arithmetic	S.L Gulati	Cosmos book hive Pvt,5th edition2015

Unit-IV

4.	**Time and Work, Time and Distance and Problems on Train**		Lectures Required	Ref. No.
	a)	**Time and Work:** Concept of time and work, Relationship between time and work, Theoretical problems on time and work	02	1,2
	b)	**Time and Distance:** Concept of time and distance, Formulae of time and distance, Theoretical problems on time and distance.	02	1,2
	c)	**Problems on Train:** Formulae of problems on train, Theoretical problems on train.	01	1,2

Sr.No	Name of Book	Author	Publication
1.	1) Quantitative Aptitude by Dr.R.S Aggrawal , S. Chand and Company Publications	Dr.R.S Aggrawal , S. Chand	Company Publication
2.	Quantitative Aptitude	Abijit Guha	Tata McGraw Hill Publications
3.	Objective Arithmetic	S.L Gulati	Cosmos book hive Pvt,5th edition2015

Unit-V

5.	Boat and streams, Allegations and Mixtures, and Calendar		Lectures Required	Ref. No.
	a)	**Boat and streams:** Concept of boat and streams, Formulae of boat and streams, Theoretical problems on boat and streams.	02	1,2
	b)	**Allegations and Mixtures:** Definition of allegation and mixtures, Rules of allegation's, Theoretical problems on mixture and allegation.	02	1,2
	c)	**Calendar:** Concept of odd days, Leap years and ordinary years, Problems on Calendar.	01	1,2

Sr.No	Name of Book	Author	Publication
1.	1) Quantitative Aptitude by Dr.R.S Aggrawal , S. Chand and Company Publications	Dr.R.S Aggrawal , S. Chand	Company Publication
2.	Quantitative Aptitude	Abijit Guha	Tata McGraw Hill Publications
3.	Objective Arithmetic	S.L Gulati	Cosmos book hive Pvt,5th edition2015

Unit-VI

6.	Simple and Compound Interest, Probability, and Permutations and combinations		Lectures Required	Ref. No.
	a)	**Simple and Compound Interest:** Definition of simple and Compound interest, Formulae of simple and compound interest, Relationship between simple and compound interest, Theoretical problems on simple and compound interest.	02	1,2
	b)	**Probability:** Definition of probability, Examples of performing a random experiment, Probability of occurrence of an event, Results on probability, Theoretical problems on probability.	02	1,2
	c)	**Permutations and combinations:** Definition of permutations and combinations, Formulae of permutation and combinations, Relationship between permutation and combinations, Problems on permutations and combinations.	01	1,2

Sr.No	Name of Book	Author	Publication
1.	1) Quantitative Aptitude by Dr.R.S Aggrawal , S. Chand and Company Publications	Dr.R.S Aggrawal , S. Chand	Company Publication
2.	Quantitative Aptitude	Abijit Guha	Tata McGraw Hill Publications
3.	Objective Arithmetic	S.L Gulati	Cosmos book hive Pvt,5th edition2015

Name of Course	B.Sc. NT SY
Semester	IV Semester
Name of Subject	Network Administration
Subject Code	S4.CC.2

Unit – I

1.	**Routing Protocol Concepts**		**Lecturers Required**	**Ref. No.**
	a)	Interior and Exterior Routing Protocols	02	1, 2
	b)	Comparing and Contrasting IP Routing	03	1, 2
	c)	Connected Routes Static Routes Default Routes	05	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	CCENT/CCNA ICND1 Second Edition)	Wendell Odom	Cisco Press
2.	CCNA ICND2 (Third Edition)	Wendell Odom	Cisco Press

Unit – II

2.	**Routing & LAN Switching**		**Lecturers Required**	**Ref. No.**
	a)	Distance Vector Routing Protocol Features RIP RIPv2 Compare RIP & RIPv2	03	1, 2
	b)	Historical Progression. Hubs, Bridges, and Switches Switching Logic	03	1, 2
	c)	DNS, DHCP, ARP, and ICMP,	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	CCENT/CCNA ICND1 (Second Edition)	Wendell Odom	Cisco Press
2.	CCNA ICND2 (Third Edition)	Wendell Odom	Cisco Press

Unit- III

3.	**OSPF & PPP**		**Lecturers Required**	**Ref. No.**
	a)	OSPF Protocols and Operation OSPF Neighbors OSPF Topology Database Exchange	04	1, 2

			03	1, 2
b)	PPP Concepts The PPP Protocol Field PPP Link Control Protocol			
c)	OSPF Configuration & PPP Configuration		02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	CCENT/CCNA ICND1 (Second Edition)	Wendell Odom	Cisco Press
2.	CCNA ICND2 (Third Edition)	Wendell Odom	Cisco Press

Unit- IV

4.	**EIGRP**		Lecturers Required	Ref. No.
	a)	EIGRP Concepts and Operation Exchanging EIGRP Topology Information EIGRP Convergence,	04	1, 2
	b)	EIGRP Neighbors	03	1, 2
	c)	EIGRP Configuring and Verification	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	CCENT/CCNA ICND1 (Second Edition)	Wendell Odom	Cisco Press
2.	CCNA ICND2 (Third Edition)	Wendell Odom	Cisco Press

Unit V

V	**Virtual LANs**		Lecturers Required	Ref. No.
	a)	Virtual LAN Concepts Trunking with ISL and 802.1Q VLAN Trunking Protocol (VTP)	04	1, 2
	b)	VLAN Configuration VLAN Trunking Configuration VTP Protocol Configuration	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	CCENT/CCNA ICND1 (Second Edition)	Wendell Odom	Cisco Press
2.	CCNA ICND2 (Third Edition)	Wendell Odom	Cisco Press

Unit VI

6.	**TROUBLESHOOTING IP ROUTING**		**Lecturers Required**	**Ref. No.**
	a)	The Ping and trace route Commands Internet Control Message Protocol Troubleshooting the Packet Forwarding Process	04	1, 2
	b)	Host Troubleshooting Tips Interface Status Extended ping Command	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	CCENT/CCNA ICND1 (Second Edition)	Wendell Odom	Cisco Press
2.	CCNA ICND2 (Third Edition)	Wendell Odom	Cisco Press

Name of Course	B.Sc. NT SY
Semester	IV Semester
Name of Subject	Network Infrastructure
Subject Code	S4.CC.3

Unit – I

1.		Understanding and configuring IP and Name resolution	Lecturers Required	Ref. No.
	a)	Understanding and configuring network connections	02	1, 2
	b)	Understanding IP version 4 Addressing Protocols	03	1, 2
	c)	Understanding IP version 6 (IPv6) Addressing	02	1, 2
	d)	Understanding name resolution in windows server 2008 networks	02	1, 2
	e)	Deploying a DNS server	02	1, 2
	f)	Configuring DNS client settings	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Configuring Windows Server 2008 Network Infrastructure	J.C.Macklin and Tony Nortrup	MCTS (70-642)

Unit – II

2.	Creating a DHCP Infrastructure		Lecturers Required	Ref. No.
	a)	Installing a DHCP server,	03	1
	b)	Configuring a DHCP server	03	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Configuring Windows Server 2008 Network Infrastructure	J.C.Macklin and Tony Nortrup	MCTS (70-642)

Unit- III

3.	Configuring Routing and IPSec		Lecturers Required	Ref. No.
	a)	Routing	04	1
	b)	Configuring IPSec.	03	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Configuring Windows Server 2008 Network Infrastructure	J.C.Macklin and Tony Nortrup	MCTS (70-642)

Unit- IV

4.	Connecting Network and Configuring Firewall		Lecturers Required	Ref. No.
	a)	Configuring network address translation	04	1
	b)	Configuring Wireless Networks	03	1
	c)	Connecting to remote networks	01	1
	D)	Configuring Windows Firewall	02	1
	e)	Configuring Network access protection	02	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Configuring Windows Server 2008 Network Infrastructure	J.C.Macklin and Tony Nortrup	MCTS (70-642)

Unit V

V	Monitoring Computers and system updates		Lecturers Required	Ref. No.
	a)	Understanding windows server update services	02	1
	b)	Using windows server update services	01	1
	c)	Monitoring Event Logs	01	1
	d)	Monitoring Performance and reliability	02	1
	e)	Using Network Monitor	02	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	CCENT/CCNA ICND1 (Second Edition)	Wendell Odom	Cisco Press
2.	CCNA ICND2 (Third Edition)	Wendell Odom	Cisco Press

Unit VI

6.	Managing Files and Printers		Lecturers Required	Ref. No.
	a)	Managing File security	04	1

b)	Sharing Folders	03	1
c)	Shadow Copies	01	1
d)	Managing Printers	02	1

References:

Sr. No.	Name of the Book	Author	Publication
1.	Configuring Windows Server 2008 Network Infrastructure	J.C.Macklin and Tony Nortrup	MCTS (70-642)

Name of Course	B.Sc. NT SY
Semester	IV Semester
Name of Subject	Linux Administration
Subject Code	S4.CC.4

Unit – I

1.		**Managing Usres**	**Lecturers Required**	**Ref. No.**
	a)	User Accounts	01	1, 2
	b)	Managing users ,Managing passwords	02	1, 2
	c)	Getting System Administrator privileges to Regular users ,the user login process	03	1, 2
	d)	Disk Quotas	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Red Hat Linux 7 Unleashed	Bill Ball,David pitts	Techmedia SAMS Publication
2.	Red Hat Linux & fedora unleashed	Bill Ball ,Hoyt Duff	

Unit – II

2.	**Administrating Database Services**		**Lecturers**	**Ref. No.**
	a)	A brief Review of database Basics	02	1, 2
	b)	Installing and Configuring MYSQL	03	1, 2
	c)	Database Clients	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Red Hat Linux & fedora unleashed	Bill Ball ,Hoyt Dust	
2.	Enterprise Linux and Fedora Edition-The Complete Reference	Bill Ball,David pitts	Techmedia SAMS Publication

Unit – III

3	**Secure File Transfer Protocol**		**Lecturers Required**	**Ref. No.**
	a)	Installing FTP Software	03	1, 2
	b)	Configuring Very Secure FTP Server	03	1, 2
	c)	Configuring WU-FTPD Server	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Linux Administration Handbook	Evi Nemeth Prentice Hall	
2.	Fedora Unleashed	Ball and Pitts	

Unit – IV

4.	Kernel and Module Management		Lecturers	Ref. No.
	a)	The Linux Kernel,Managing Modules	03	1, 2
	b)	When to Recompile Kernel, kernel versions	03	1, 2
	c)	Patching the Kernel, Compiling the Kernel	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Red Hat Linux -7	Bill Ball	S.C.Jain for Techmedia
2.	Fedora Unleashed	Ball and Pitts	

Unit – V

5.	Printing With Linux		Lecturers Required	Ref. No.
	a)	Configuring and Managing Print Services.	02	1, 2
	b)	Creating and Configuring Local and Network printer	02	1, 2
	c)	Using the CUPS	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	The Complete Reference	Richard Peterson	BPB
2.	Fedora Unleashed	Ball and Pitts	

Unit – VI

5.	Network Connectivity		Lecturers Required	Ref. No.
	a)	Using Network Configuration Tools	02	1, 2
	b)	DHCP Protocol	01	1, 2
	c)	Using Network File System	03	1, 2
	d)	Putting Samba to Work	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Linux Network Administrators Guide	Bill Ball	
2.	Fedora Unleashed	Olaf Kirch and Terry Dawson	

Name of Course	B.Sc. NT SY
Semester	IV Semester
Name of Subject	Elective- I TCP/IP
Subject Code	S4.CC.5

Unit – I

1.		**Introduction**	**Lecturers Required**	**Ref. No.**
	a)	The motivation for Internetworking	02	1, 2
	b)	Internet Services	01	1, 2
	c)	History & scope of the internet	03	1, 2
	d)	The internet architecture board IETF IRTF	05	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	TCP/IP	Douglas Comer	Prentice Hall of India
2.	TCP/IP Protocol Suite	BEHROUZ FOROUZAN	

Unit – II

2.		Review of underlying network technologies	Lecturers Required	Ref. No.
	a)	To approaches to network communication Ethernet technology	03	1, 2
	b)	WAN & LAN- network hardware address	03	1, 2
	c)	FDDI	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	TCP/IP	Douglas Comer	Prentice Hall of India
2.	TCP/IP Protocol Suite	BEHROUZ FOROUZAN	

Unit- III

3.		Internet address	**Lecturers Required**	**Ref. No.**
	a)	The original class full addressing scheme Network and directed broadcast address Limited broadcast	04	1, 2
	b)	Connectionless delivery system Purpose of internet protocol	03	1, 2
	c)	The internet datagram	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	TCP/IP	Douglas Comer	Prentice Hall of India
2.	TCP/IP Protocol Suite	BEHROUZ FOROUZAN	

Unit- IV

4.		Reliable stream transport service (TCP)	Lecturers	Ref. No.
	a)	The need for stream delivery Properties of the reliable delivery service Providing reliability	04	1, 2
	b)	The idea behind sliding window TCP Frame Format	03	1, 2
	c)	Ports, connection, endpoints	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	TCP/IP	Douglas Comer	Prentice Hall of India
2.	TCP/IP Protocol Suite	BEHROUZ FOROUZAN	

Unit V

5.		ATM Networks & ARP	Lecturers	Ref. No.
	a)	ARP The address resolution problem Two types of Physical addresses Resolution through Direct mapping Resolution through Dynamic binding	04	1, 2
	b)	ATM ATM Hardware Large ATM Networks	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	TCP/IP	Douglas Comer	Prentice Hall of India
2.	TCP/IP Protocol Suite	BEHROUZ FOROUZAN	

Unit VI

6.	RARP & IEEE Ethernet 802.3	Lecturers	Ref. No.

			04	1, 2
a)	Introduction Reverse Address Resolution protocol Timing RARP			
b)	IEEE Ethernet 802.3 Standard		03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	TCP/IP	Douglas Comer	Prentice Hall of India
2.	TCP/IP Protocol Suite	BEHROUZ FOROUZAN	

Elective- II   Computer System Security

Unit – I

1.		**Attacks on Computers and Computer Security**	**Lecturers Required**	**Ref. No.**
	a)	Introduction, The Need for Security	02	1, 2
	b)	Principles of Security	01	1, 2
	c)	Types of Attacks	03	1, 2
	d)	OSI Security Architecture, A Model for network security	05	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Ethical Hacking	Ankit Fadia	
2.	Cryptography & Network Security Principles & Practice		

Unit – II

2.	**Cryptography: Concepts and Techniques**		**Lecturers Required**	**Ref. No.**
	a)	Plain text and Cipher Text Encryption and Decryption, Substitution Techniques, Transportation Techniques	04	1, 2
	b)	Symmetric and Asymmetric Key Cryptography	02	1, 2
	c)	Steganography	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Ethical Hacking	Ankit Fadia	
2.	Cryptography & Network Security Principles & Practice		

Unit- III

3.	**Intruders, Viruses & Worms**		**Lecturers Required**	**Ref. No.**
	a)	Intruders Viruses & Related Threats	03	1, 2
	b)	Types Of virus	02	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Ethical Hacking	Ankit Fadia	
2.	Cryptography & Network Security Principles & Practice		

Unit- IV

4.	**Study Of Firewall And Network Security Configuration**		**Lecturers**	**Ref. No.**
	a)	Introduction of Firewall, Types of Firewall, Configuring of Firewall, Open source Firewall	04	1, 2
	b)	Modem/Router Configuration V-LAN Configuration	03	1, 2
	c)	Proxy Server Configuration	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Ethical Hacking	Ankit Fadia	
2.	Cryptography & Network Security Principles & Practice		

Unit V

5.	**Introduction Of Ethical Hacking**		**Lecturers**	**Ref. No.**
	a)	Information gathering, Foot printing - Active / Passive, Scanning ,Sniffers, Hacking by stealth	04	1, 2
	b)	Virus, Trojans, Binders , Key loggers	03	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Ethical Hacking	Ankit Fadia	
2.	Cryptography & Network Security Principles & Practice		

Unit VI

6.	Domain Name Disputes and Trademark Law		Lecturers	Ref. No.
	a)	Concept of Domain Names	02	1, 2
	b)	New Concepts in Trademark Jurisprudence, Cyber squatting, Reverse, ijacking, Meta tags, Framing, Spamming,	04	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Ethical Hacking	Ankit Fadia	
2.	Cryptography & Network Security Principles & Practice		

Elective- III   NOSA

Unit – I

1.	Introduction		Lecturers Required	Ref. No.
	a)	Application	02	1, 2
	b)	Network Standards & documentation	01	1, 2
	c)	Packets & Encapsulation	02	1, 2
	d)	CIDR	01	1, 2
	e)	Private address & NAT	01	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	UNIX System Administration Hand book III rd	Evi Neimeth, Garth Snyder, Scott Seebags	Tata McGraw Hill

Unit – II

2		Routing	Lecture Required	Ref.No
	a)	Routing tables	02	1,2
	b)	ICMP Redirector	01	1,2
	c)	PPP Protocol	02	1,2
	d)	Packet forwarding	01	1,2
	e)	Routing daemons & routing protocols	02	1,2
	f)	Distance vector protocol	01	1,2
	g)	Link State protocol	02	1,2

References:

Sr. No.	Name of the Book	Author	Publication
1.	UNIX System Administration Hand book III rd	Evi Neimeth, Garth Snyder, Scott Seebags	Tata McGraw Hill

Unit- III

3.	Network design Issues		Lecturers Required	Ref. No.
	a)	Network architecture vs Building Architecture	04	1, 2
	b)	Existing protocols	03	1, 2
	c)	Expansion	02	1, 2
	d)	Congestion	02	1, 2
	e)	Maintenance & documentation	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	UNIX System Administration Hand book III rd	Evi Neimeth, Garth Snyder, Scott Seebags	Tata McGraw Hill

Unit- IV

4.	The Network File System		Lecturers Required	Ref. No.
	a)	Web NFS	03	1, 2
	b)	File Locking	02	1, 2
	c)	Disk quotes	01	1, 2
	d)	Dump NFS Station		

References:

Sr. No.	Name of the Book	Author	Publication
1.	UNIX System Administration Hand book III rd	Evi Neimeth, Garth Snyder, Scott Seebags	Tata McGraw Hill

Unit V

5.	Network management & debugging		Lecturers Required	Ref. No.
	a)	Troubleshooting	02	1, 2
	b)	Network Management Protocol	01	1, 2
	c)	RMON: Remote Monitor MIB	02	1, 2
	d)	Network Management Application	01	1, 2
	e)	Network Management Application	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	UNIX System Administration Hand book III rd	Evi Neimeth, Garth Snyder, Scott Seebags	Tata McGraw Hill

Unit VI

6.	Web Hosting & Internet Servers		Lecturers Required	Ref. No.
	a)	Web hosting	01	1, 2
	b)	Web hosting basics	03	1, 2
	c)	HTTP server installation	02	1, 2
	d)	Virtual Interfaces	02	1, 2

	e)	Caching Proxy Servers	01	1, 2

References:

Sr. No.	Name of the Book	Author	Publication
1.	UNIX System Administration Hand book III rd	Evi Neimeth, Garth Snyder, Scott Seebags	Tata McGraw Hill

Lab Course – 4 (S4.Lab1)
(Network Administration)

Sr.No	Title of program	Require Hours
1	Lab Connected route configuration	2
2	Lab static route configuration	2
3	Lab default route configuration	2
4	Lab RIP Protocol configuration	2
5	Lab RIP v2 Protocol configuration	2
6	Lab OSPF Protocol configuration	2
7	Lab EIGRP Protocol configuration	2
8	Lab VLAN configuration	2
9	Lab VLAN Trucking configuration	2
10	Lab VTP protocol configuration	2
11	Lab IP Subnet & VLAN configuration	2
12	Lab Network Troubleshooting	2

References:

Sr.No	Book	Author	Publication
1	CCENT/CCNA ICND1 (Second Edition)	Wendell Odom	Cisco Press
2	CCNA ICND2 (Third Edition)	Wendell Odom	Cisco Press

Lab Course – 4 (S4.Lab2)
(Network Infrastructure)

Sr.No	Title of program	Require Hours
1	Study of assigning IPV4 and iPV6 addresses	2
2	Study of troubleshooting connectivity problems	2
3	Study of Installing and Configuring DNS	2
4	Study of Installing and Configuring DHCP	2
5	Study of Installing Routing and remote access service and Configure RIP	2
6	Study of Configuring IPSec and Connection security rule	2
7	Study of Configuring Windows firewall Inbound rule	2
8	Study of Configuring Windows firewall Outbound rule	2
9	Study of Monitoring event log	2
10	Study of monitoring Performance and reliability of server	2
11	Study of Installing Local Printer	2
12	Study of Installing Network or Remote Printer	2

References:

Sr. No.	Name of the Book	Author	Publication
1.	Configuring Windows Server 2008 Network Infrastructure	J.C.Macklin and Tony Nortrup	MCTS (70-642)

Lab Course – 4 (S4.Lab3)
(Linux Administration)

Sr.No	Title of program	Require Hours
1	Lab: Review on Fundamental of Linux	2
2	Study of User and Group Administration commands	2
3	Study of creating File system in Linux	2
4	Study of backup and recovery commands	2
5	Study of configuring FTP Server	2
6	Study of configuring Vsftpd Server	2
7	Study of networking commands	2
8	Study of DHCP Server configuration	2
9	Study of printer related commands	2
10	Study of NFS configuration	2

References:

Sr.No	Book	Author	Publication
1	The Complete Reference	Richard Peterson	BPB
2	Fedora Unleashed	Ball and Pitts	
3	Red Hat Linux & Fedora Unleashed	Gill Ball & Hoy Dust	

Name of Course	B.Sc. NT SY
Semester	IV Semester
Name of Subject	Multimedia and Applications
Subject Code	S3.SEC1 (1)

Practical NO.	Name of Practical
1	Study of Multimedia Elements
2	Study of Opening Screen of Power Point
3	Study of Power Point Presentation of MM Elements
4	Study of Opening Screen of Adobe Photoshop
5	Study to change back ground color of image in Adobe Photoshop.
6	Study to Effect to back ground image in Adobe Photoshop.
7	Study to clear underexposed in Adobe Photoshop.
8	Study to apply canvas effect in Adobe Photoshop.
9	Study to enlarge your image with minimal visible Loss.
10	Study to create user defined brush in Adobe Photoshop.
11	Study to apply sketch effect in Adobe Photoshop.
12	Study to apply wind effect to text in Adobe Photoshop.
14	Study to create bouncing ball in Macromedia Flash.
15	Study to create Rolling ball in Macromedia Flash.

	B.Sc. NT SY
Semester	IV Semester
Name of Subject	Computer Tricks
Subject Code	S3.SEC1 (2)

1. Download Youtube Videos Without Any Software
2. Create A Undeletable And Unrenamable Folders In Windows
3. Password Protect Any Folder Without Any Software
4. Learn To Hide Files Behind The Images
5. Making Nameless Folder In Windows
6. Setting Video As Desktop Wallpaper
7. Keyboard Dancing Led Light Trick
8. Is you antivirus working perfect ?
9. Matrix Effect using notepad
10. How To Hack Saved Password In Firefox ?
11. More Simple Way To View Saved Password in Google Chrome
12. How to view saved password in google chrome ?
13. New Facebook Smiley Codes for Chat.
14. Simple Trick To Find Facebook Profile ID
15. Is Your Computer Male Or Female ?
16. Make your computer talk what you type !
17. List of Windows keyboard Shortcuts
18. Windows Explorer Shortcuts
19. Internet Explorer Shortcuts
20. Rename your Recycle bin
21. How to block unblock websites ?
22. How To Disable Right Click On Your Website Or Blog
23. How To Grab Someone IP Address ?
24. Learn To Make Dangerous Virus In A Minute
25. Hacking Facebook accounts using Cookie Stealing and Session Hi-jacking

Name of Course	B.Sc. NT SY
Semester	IV Semester
Name of Subject	DTP
Subject Code	S3.SEC1 (3)

1. Lab 1 –   Simple image editing
2. Lab 2 – Colour change, image extraction and merging of images
3. Lab 3 – Working with layers
4. Lab 4- This exercise can be solved using the following functions: Selection Tools, Copy, Cut, Paste
5. Lab 5 – This exercise can be solved using the following functions: Selection Tools, Copy, Paste, Paste
6. Lab6-   This exercise can be solved using the following functions: Lasso- and Polygonal Lasso Selection
7. Lab 7- This exercise can be solved using the following functions: Selection Tools, Copy, Paste, Paste
8. Lab8- This exercise can be solved using the following functions: Paint Bucket Tool, Color Picker, Brush Tool
9. Lab 9- This exercise can be solved using the following functions: Transform, Move Tool, Opacity, Eraser Tool
10. Lab- 10 This exercise can be solved using the following functions: Selection Tools, Selection Types, Color Balance
11. Lab - 11This exercise can be solved using the following functions: Crop
12. Lab 12- This exercise can be solved using the following functions: Brush Tool, Smudge Tool, Dodge Tool, Burn Tool
13. Lab 13 - This exercise can be solved using the following functions: The Brush Tool, the Shape Tool
14. Lab 14 This exercise can be solved using the following functions: The Shape Tools, the Styles palette
15. Lab 15 -This exercise can be solved using the following functions: The Brush Tool, Modes
16. Lab 16- This exercise can be solved using the following functions: Anything and everything you want. The Text Tool Feel free to use the Warp functions on your text!