॥ सा विद्या या विमुक्तये ॥

स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड

'ज्ञानतीर्थ', विष्णुपुरी, नांदेड – ४३१ ६०६ (महाराष्ट्र राज्य) भारत

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

'Dnyanteerth', Vishnupuri, Nanded - 431 606 (Maharashtra State) INDIA

Established on 17th September, 1994, Recognized By the UGC U/s 2(f) and 12(B), NAAC Re-accredited with'B++' grade

Fax : (02462) 215572

Phone: (02462)215542

Academic-1 (BOS) Section

website: srtmun.ac.in

E-mail: bos@srtmun.ac.in

विज्ञान व तंत्रज्ञान विद्याशाखे अंतर्गत राष्ट्रीय शैक्षणिक धोरण २०२० नुसार पदवी द्वितीय वर्षाचे अभ्यासक्रम (Syllabus) शैक्षणिक वर्ष २०२५–२६ पासून लागू करण्याबाबत.

प रि प त्र क

या परिपत्रकान्वये सर्व संबंधितांना कळविण्यात येते की, दिनांक २७ मे २०२५ रोजी संपन्न झालेल्या मा. विद्यापरिषद बैठकीतील विषय क्रमांक १६/६१–२०२५ च्या ठरावानुसार विज्ञान व तंत्रज्ञान विद्याशाखेतील राष्ट्रीय शैक्षणिक धोरण–२०२० नुसारचे पदवी द्वितीय वर्षाचे अभ्यासक्रम (Syllabus) शैक्षणिक वर्ष २०२५–२६ पासून लागू करण्यास मा. विद्यापरिषदेने मान्यता प्रदान केली आहे. त्यानुसार विज्ञान व तंत्रज्ञान विद्याशाखेतील बी. एस्सी द्वितीय वर्षाचे खालील विषयाचे अभ्यासक्रम (Syllabus) शैक्षणिक वर्ष २०२५–२६ पासून लागू करण्यात येत आहेत.

01	B.Sc. Computer Management (Single Major)
02	B.Sc. Information Technology (Single Major)
03	B.Sc. Software Engineering (Single Major)
04	B.Sc. Computer Network Technology (Single Major)
05	B.Sc. Computer Science (Single Major)
06	B.Sc. Artificial Intelligence & Machine Learning (Single Major)
07	B.Sc. BCA (Single Major)
08	B.Sc. Computer Maintenance
09	B.Sc. Computer Science
10	B.Sc. Information Technology
11	B. Sc. Computer Application
12	B. Sc. Software Development
13	B. Sc. Data Science
14	B. Sc. Computer Science (with data Science specialization)

सदरील परिपत्रक व अभ्यासक्रम प्रस्तुत विद्यापीठाच्या **www.srtmun.ac.in** या संकेतस्थळावर उपलब्ध आहेत. तरी सदरील बाब ही सर्व संबंधितांच्या निदर्शनास आणून द्यावी, ही विनंती.

'ज्ञानतीर्थ' परिसर,
विष्णुपुरी, नांदेड – ४३१ ६०६.
जा.क्र.:शै–१/एनइपी/विवत्रंविपदवी/२०२५–२६/126
दिनांक १२.०६.२०२५

सहाय्यक कुलसचिव
शैक्षणिक (१–अभ्यासमंडळ) विभाग

प्रत : माहितीस्तव तथा कार्यवाहीस्तव.

१) मा. कुलगुरू महोदयांचे कार्यलय, प्रस्तुत विद्यापीठ.
२) मा. प्र. कुलगुरू महोदयांचे कार्यलय, प्रस्तुत विद्यापीठ.
३) मा. आधिष्ठाता, विज्ञान व तंत्रज्ञान विद्याशाखा, प्रस्तुत विद्यापीठ.
४) मा. संचालक, परीक्षा व मुंल्यमापन मंडळ, प्रस्तुत विद्यापीठ.
५) मा. प्राचार्य, सर्व संबधित संलग्नित महाविद्यालये, प्रस्तुत विद्यापीठ.
६) सिस्टीम एक्सपर्ट, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ. याना देवून कळविण्यात येते की, परिपत्रक अभ्यासक्रम संकेतस्थळावर प्रसिध्द करण्यात यावेत.

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED - 431 606 (MS)

(Credit Framework and Structure of

B. Sc. Network Technology (Single Major)

Second Year

with Multiple Entry and Exit Options as per NEP-2020)

UNDERGRADUATE PROGRAMME OF

SCIENCE & TECHNOLOGY

Major in **NTT** and Minor in **DSM** (Subject)

Under the Faculty of Science & Technology

Swami Ramanand Teerth Marathwada University, Nanded

Faculty of Science and Technology (Three Optional in the First Year)

Credit Framework for Second Year with Multiple Entry and Exit

Subject: NTT (Major) /DSM (Minor 1)

B.Sc. Network Technology (Single Major) Second Year

Year & Level	Semester	Optional 1 (Major) *(From the same Faculty)*	Optional 2 (Minor 1) *(From the same Faculty)*	Optional 3 (Minor 2) *(From the same Faculty)*	Generic Elective (GE) (select from Basket 3 of *Faculties other than Science and Technology*)	Vocational & Skill Enhancement Course	Ability Enhancement Course (AEC) (Basket 4) Value Education Courses (VEC) / Indian Knowledge System (IKS) (Basket 5) *(Common across all faculties)*	Field Work / Project/Internship/ OJT/ Apprenticeship / Case Study Or Co-curricular Courses (CCC) (Basket 6 for CCC) *(Common across all faculties)*	Credits	Total Credits
1	2	3	4	5	6	7	8	9	10	11
2 (5.0)	III	SNTTCT1201 (T 2Cr) SNTTCT1202 (T 2Cr) SNTTCP1203 (P 2Cr) SNTTCP1204 (P 2Cr) 8 Credits	SNTTMT1201 (T 2 Cr) SNTTMP1201 (P 2 Cr) 4 Credits	--	SNTTGE1201 2 Credits	SNTTSC1201 2 Credits	AECENG1201 (2cr) AECMIL1201 (2Cr) (MAR/HIN/URD /KAN/PAL) 4 Credits	CCCXXX1201 (2Cr) *(NCC/NSS/SPT(sports)/ CLS(Cultural Studies)/HWS(Health Wellness)/ YGE(Yoga Education) / FIT(Fitness)* 2 Credits	22	44
	IV	SNTTCT1251 (T 2Cr) SNTTCT1252 (T 2Cr) SNTTCP1253 (P 2Cr) SNTTCP1254 (P 2Cr) 8 Credits	SNTTMT1251 (T 2 Cr) SNTTMP1251 (P 2 Cr) 4 Credits	--	SNTTGE1251 2 Credits	SNTTVC1251 2 Credits	AECENG1251 (2cr) AECMIL1251 (2Cr) (MAR/HIN/URD /KAN/PAL) VECEVS1251 (2Cr) 6 Credits		22	
	Cum. Cr.	16	08	00	04	04	10	02	44	

Abbreviations:

1. **DSC:** Department/Discipline Specific Core (Major)
2. **DSE:** Department/Discipline Specific Elective (Major)
3. **DSM:** Discipline Specific Minor
4. **GE/OE:** Generic/Open Elective
5. **VSEC:** Vocational Skill and Skill Enhancement Course
6. **VSC:** Vocational Skill Courses
7. **SEC:** Skill Enhancement Courses
8. **AEC:** Ability Enhancement courses
9. **MIL:** Modern Indian languages
10. **IKS:** Indian Knowledge System
11. **VEC:** Value Education Courses
12. **OJT:** On Job Training: (Internship/Apprenticeship)
13. **FP:** Field Projects
14. **CEP:** Community Engagement and Service
15. **CC:** Co-Curricular Courses
16. **RM:** Research Methodology
17. **RP:** Research Project/Dissertation

B. Sc. NT Second Year Semester III *(Level 5.0)*

Teaching Scheme

	Course Code	Course Name	Credits Assigned			Teaching Scheme (Hrs./ week)	
			Theory	Practical	Total	Theory	Practical
Optional 1	SNTTCT1201	Linux Operating System	02	--	**08**	03	--
	SNTTCT1202	Network Administration Part I	02	--		03	--
	SNTTCP1203	Linux Operating System (P)	--	02		--	04
	SNTTCP1204	Network Administration Part I (P)	--	02		--	04
Optional 2	SNTTMT1201	Cisco Certified Entry Networking technician (CCENT)	02	--	**04**	03	--
	SNTTMP1201	Cisco Certified Entry Networking technician (CCENT) (P)	-	02		--	04
Generic Electives *(from other Faculty)*	SNTTGE1201	Cyber Security	02	--	**02**	02	--
Skill Based Course (related to Major)	SNTTSC1201	Multimedia (P)	--	02	**02**	--	04
Ability Enhancement Course	AECENG1201	Select from **(Basket 4)**	02	--	**02**	02	--
Ability Enhancement Course	AECMIL1201	Select from **(Basket 4)**	02	--	**02**	02	--
Field Work / Project/Internship	--	--	--	--	**--**	--	--
Community Engagement Services (CES)	CCCXXX1201	Select from **(Basket 6)**	--	02	**02**	--	02
Total Credits			**12**	**10**	**22**	**15**	**18**

B. Sc. NT Second Year Semester III *(Level 5.0)*

Examination Scheme

[20% Continuous Assessment (CA) and 80% End Semester Assessment (ESA)]

Subject (1)	Course Code (2)	Course Name (3)	Theory				Practical		Total Col (6+7) / Col (8+9) (10)
			Continuous Assessment (CA)			ESA			
			Test I (4)	Test II (5)	Average of T1 & T2 (6)	Total (7)	CA (8)	ESA (9)	
Optional 1	SNTTCT1201	Linux Operating System	10	10	10	40	--	--	50
	SNTTCT1202	Network Administration Part I	10	10	10	40	--	--	50
	SNTTCP1203	Linux Operating System (P)	--	--	--	--	20	30	50
	SNTTCP1204	Network Administration Part I (P)	--	--	--	--	20	30	50
Optional 2	SNTTMT1201	Cisco Certified Entry Networking technician (CCENT)	10	10	10	40	--	--	50
	SNTTMP1201	Cisco Certified Entry Networking technician (CCENT) (P)	--	--	--	--	20	30	50
Generic Elective	SNTTGE1201	Cyber Security	10	10	10	40	--	--	50
Skill Based Course	SNTTSC1201	Multimedia (P)	--	--	--	--	20	30	50
Ability Enhancement Course	AECENG1201	Select from **(Basket 4)**	10	10	10	40	--	--	50
Ability Enhancement Course	ACEMIL1201	Select from **(Basket 4)**	10	10	10	40	--	--	50
Field Work / Project/Internship	--	--	--	--	--	--	--	--	--
Community Engagement Services (CES)	CCCXXX1201	Select from **(Basket 6)**	--	--	--	--	20	30	50

B. Sc. Second Year Semester IV *(Level 5.0)*

Teaching Scheme

	Course Code	Course Name	Credits Assigned			Teaching Scheme (Hrs./ week)	
			Theory	Practical	Total	Theory	Practical
Optional 1	SNTTCT1251	Linux Administration Part I	02	--	**08**	03	--
	SNTTCT1252	Network Administration Part II	02	--		03	--
	SNTTCP1253	Linux Administration Part I (P)	--	02		--	04
	SNTTCP1254	Network Administration Part II (P)	--	02		--	04
Optional 2	SNTTMT1251	Software Testing	02	--	**04**	03	--
	SNTTMP1251	Software Testing (P)	-	02		--	04
Generic Electives *(from other Faculty)*	SNTTGE1251	Content Management System	02	--	**02**	02	--
Vocational Course *(related to Major)*	SNTTVC1251	Data Analysis with Excel (P)	--	02	**02**	--	04
Ability Enhancement Course	AECENG1251	Select from **(Basket 4)**	02	--	**02**	02	--
Ability Enhancement Course	AECMIL1251	Select from **(Basket 4)**	02	--	**02**	02	--
Value Education Courses	VECEVS1251	Select from **(Basket 5)**	02	--	**02**	02	--
Community Engagement Services (CES)	--	--	--	--	--	--	--
Total Credits			**14**	**08**	**22**	**17**	**16**

B. Sc. NT Second Year Semester IV *(Level 5.0)*

Examination Scheme

[20% Continuous Assessment (CA) and 80% End Semester Assessment (ESA)]

Subject (1)	Course Code (2)	Course Name (3)	Theory				Practical		Total Col (6+7) / Col (8+9) (10)
			Continuous Assessment (CA)			ESA			
			Test I (4)	Test II (5)	Average of T1 & T2 (6)	Total (7)	CA (8)	ESA (9)	
Optional 1	SNTTCT1251	Linux Administration Part I	10	10	10	40	--	--	50
	SNTTCT1252	Network Administration Part II	10	10	10	40	--	--	50
	SNTTCP1253	Linux Administration Part I (P)	--	--	--	--	20	30	50
	SNTTCP1254	Network Administration Part II (P)	--	--	--	--	20	30	50
Optional 2	SNTTMT1251	Software Testing	10	10	10	40	--	--	50
	SNTTMP1251	Software Testing (P)	--	--	--	--	20	30	50
Generic Elective	SNTTGE1251	Content Management System	10	10	10	40	--	--	50
Vocational Course	SNTTVC1251	Data Analysis with Excel (P)	--	--	--	--	20	30	50
Ability Enhancement Course	AECENG1251	Select from **(Basket 4)**	10	10	10	40	--	--	50
Ability Enhancement Course	AECMIL1251	Select from **(Basket 4)**	10	10	10	40	--	--	50
Value Education Courses	VECEVS1251	Select from **(Basket 5)**	10	10	10	40	--	--	50
Community Engagement Services (CES)	--	--	--	--	--	--	--	--	--

Detailed Curriculum

Course Structure: *Major 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCT1201	Linux Operating System	02	--	02	--	02

Major 1 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTCT1201	Linux Operating System	10	10	10	40	--	--	50

SNTTCT1201: ***Linux Operating System (Major 1) Curriculum Details***

Course pre-requisite:

1. Basic knowledge of Operating System and Familiarity with computer hardware.

Course Objectives:

- This course shall build a platform for students to start their own enterprise
- For Making Student Job Ready
- To become familiar with open source software and user interface.
- To securely handle OS without any viruses and malwares.

Course Outcomes:

- Awareness of existing demanding trends in IT industry in order to get placement & research in open source market.
- Understand the Linux OS architecture.
- Install and use different types of distributions available in market.
- Understand the different Linux basic commands.

Students will be able to:

- Understand operating System.
- Getting the knowledge of working of OS.

Curriculum Details:

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction to Linux**	**5**
	1.1	Operating system,What is Linux, Advantages of Linux, Disadvantages of Linux,	
	1.2	Distributions of Linux	
	1.3	Functions of Operating system ,History and development of of Linux, Features of Linux	
	1.4	Installation steps of Linux	
	1.5	Difference between Linux and Windows, Difference between Linux and Unix	
2.0		**Handling Linux Environment**	**10**
	2.1	Basic Commands, Linux standard directories,Hardware requirement for linux	
	2.2	Commands for files and directories,File processing commands,Mathematical Commands	
	2.3	Login,Logout and Remote Login,different GPU (cal,date,wc,who)	
	2.4	Basic filters –head,tail,sort,grep,different options and expressions for grep	
3.0		**Linux boot process**	**10**
	3.1	Boot Loaders (LILO and GRUB),System Initiazation	
	3.2	inittab	
	3.3	rc.sysinit,rc	
	3.4	Printing files: Print Spool directory,sending files to Printer	
4.0		**Sharing Files with Other users**	**5**
	4.1	Maintaining User accounts,changing password,creating group Accounts,Granting access to files,Changing file ownership	
	4.2	Protecting files,making a file readonly,	
	4.3	Free command and top utility	
	4.4	working with processes: types of process,ps Command,Creating process,killing process	
		Total	**30**

Reference book:-

1. LINUX complete reference by Richard Peterson
2. RedHalt Linux 718 by billball,David Pitts
3. Unix concept and applications by Sumitabha Das
4. Fedora 7 Unleashed by Andrew Hudson and Paul Hudson (SAMS publication)

Course Structure: *Major 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCP1203	Linux Operating System (Practical)	--	02	--	02	02

Major 1 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTCP1203	Linux Operating System (Practical)	--	--	--	--	30	20	50

SNTTCP1203**: Linux Operating System** ***(practical) (Major 1)***

1	Navigating the Filesystem
2	Managing Files
3	Permissions
4	Processes and System Information
5	Package Management (Debian / Ubuntu-based)
6	Networking
7	Archiving and Compression
8	System Monitoring and Log Files
9	Text Processing
10	User and Group Management
11	Scheduling Tasks
12	Searching and Finding Files
13	Disk Usage and File System Management
14	Shell Scripting Basics

Course Structure: *Major 2 -Teaching Scheme*

Course Code	Course Name	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCT1252	Network Administration Part-I	02	--	02	--	02

Major 2 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTCT1252	Network Administration Part-I	10	10	10	40	--	--	50

SCSCCT1101: ***Analyzing Data with SQL (Major 2) Curriculum Details***

Course pre-requisite:

2. Basic knowledge of Network and Familiarity with Network administration.

Course Objectives:

- Describe the role of dynamic routing protocols and place these protocols in the context of modern network design
- Understand N/W protocols like RIP, OSPF & EIGRP according to industry requirement
- Study of reference models

Course Outcomes:

- Practical hands-on will help to interconnect the N/W components & design industrial N/w
- Best Practices for configuring dynamic routing protocols
- Best Practices for network troubleshooting

Students will be able to:

- Understand network protocols.
- Getting the knowledge of DHCP.

Curriculum Details:

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Network Fundamentals**	**5**
	1.1	OSI Model, TCP/IP Model	
	1.2	Compare and contrast OSI and TCP/IP models, Data Encapsulation	
	1.3	Compare and contrast network topologies, cabling types	
	1.4	Configure, verify, and troubleshoot IPv4 addressing,	
	1.5	Need for private IPv4 addressing.	
2.0		**Routing Protocol Concepts**	**10**
	2.1	Interior and Exterior Routing Protocols,.	
	2.2	Connected Routes, Static Routes, Extended ping Command,	
	2.3	Default Routes, RIP Protocol, RIP-2 Basic Concepts,	
	2.4	Comparing and Contrasting IP Routing Protocols	
3.0		**WAN Technologies**	**10**
	3.1	PPP Concepts,	
	3.2	PPP Protocol Field,	
	3.3	PPP Link Control Protocol,	
	3.4	PPP Configuration	
4.0		**Troubleshooting IP Routing**	**5**
	4.1	The Ping and trace route Commands,	
	4.2	Internet Control Message Protocol,	
	4.3	Troubleshooting the Packet Forwarding Process.	
	4.4	Host Troubleshooting Tips Interface Status, Extended Ping	
		Total	**30**

Reference Books: CCENT/CCNA ICND1 (Second Edition) - Wendell Odom

Course Structure: *Major 2 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCP1204	Network Administration Part-I (Practical)	--	02	--	02	02

Major 2 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTCP1204	Network Administration Part-I (Practical)	--	--	--	--	30	20	50

SNTTCP1204**: Network Administration Part-I** ***(practical) (Major 2)***

1	Study of connected route.
2	Study of static route
3	Study of default route.
4	Study of rip protocol configuration.
5	Study of ripv2 protocol configuration
6	Study of OSPF protocol configuration.
7	Study of EIGRP protocol configuration
8	Study of PPP protocol configuration.
9	Study of telnet password.
10	Study of router basic show commands.
11	Study of Troubleshooting of packet forwarding
12	Study of ICMP Protocol
13	Study of Host Troubleshooting

Course Structure: *Minor 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMT1201	Cisco Certified Entry Networking Technician (CCENT)	03	--	02	--	02

Minor 1 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTMT1201	Cisco Certified Entry Networking Technician (CCENT)	10	10	10	40	--	--	50

SNTTMT1201: ***Analyzing Data with SQL (Minor 1) Curriculum Details***

Course pre-requisite:

1. Basic knowledge of Network and Familiarity with Network Protocols.

Course Objectives:

- Understand different types of networks, various topologies and application of networks.
- Understand types of addresses, data communication
- Understand the concept of networking models, protocols, functionality of each layer.

Course Outcomes:

Students will able to

- Learn basic networking hardware and tools.
- Practice to design peer to peer network
- Practice to design Client Server Network
- Understand types of networks.
- Getting the knowledge of data communication

Curriculum Details:

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction**	**5**
	1.1	Network Essentials , Network Definitions	
	1.2	Network Topologies, Network Categories, The OSI Reference Model	
	1.3	Functions and Advantages	
	1.4	The Layers, Network Components	
	1.5	Protocol Data Units	
2.0		**Ethernet Fundamentals**	**10**
	2.1	Ethernet History, Ethernet Characteristics,	
	2.2	Frame Types and Addressing, Media Access,	
	2.3	Data Flow, Ethernet Standards,	
	2.4	Peer to Peer Network, Client Server Model.	
3.0		**Switching**	**10**
	3.1	Switch Fundamentals, Physical Features, Switch Initialization Functions,	
	3.2	Duplex and Speed,	
	3.3	Switch Modes, Switch Design Considerations,	
	3.4	Switch Installation and Connections, Looping and STP, VLANs	
4.0		**Routing Essentials and IP Addressing**	**5**
	4.1	Routing Fundamentals , Routing Logic and Data Flow	
	4.2	Routed and Routing Protocols , An Introduction to IP Addressing	
	4.3	IP Address Construction, IP Address Classes	
	4.4	IP Address Technologies	
		Total	**30**

Reference Books: Cisco CCENT CCNA icnd1 100-101 Wendell Odam

Course Structure: *Minor 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMP1201	Cisco Certified Entry Networking Technician (CCENT) (Practical)	--	02	--	02	02

Minor 1 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTMP1201	Cisco Certified Entry Networking Technician (CCENT) (Practical)	--	--	--	--	20	30	50

SNTTMP1201**: Cisco Certified Entry Networking Technician (CCENT)** ***(practical) (Minor 1)***

Sr No	Name Of practical list
1	Study of Hardware Component on Motherboard
2	Study of Assemble a Computer System.
3	Study of Installing Windows 7 OS
4	Study of Transmission Medias – Twisted Pair Cable, Co-axial, Fiber-optic Cable.
5	Cable Coding (Straight Over, Crossover)
6	Study of Network Devices.
7	Study of IP address
8	Study of drive map
9	Study of Remote connections
10	Study of Team viewer software

Course Structure: Generic Elective -Teaching Scheme

Course Code	Course Name	Teaching Scheme (Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTGE1201	Cyber Security	03	--	02	--	02

Generic Elective -Assessment Scheme

Course Code (1)	Course Name (2)	Theory				Practical		Total [col (5+6) Or Col(7+8)]
		CA			ESA (6)			
		Test I (3)	Test II (4)	Avg. (T1&t2) (5)		CA (7)	ESA (8)	
SNTTGE1201	Cyber Security	10	10	10	40	--	--	**50**

SNTTGE1201: Cyber Security (*Generic Elective*) Curriculum Details

Course pre-requisite:

1. Basic Computer Skills
   Know how to use operating systems (Windows/Linux/macOS), install software, and navigate file systems.

2. Familiarity with Networking Concepts
   Understand basics like IP addresses, DNS, firewalls, and ports.

3. Interest in Technology & Problem Solving
   A curious mindset helps a lot.

Course Objectives:

1. Understand key terms and concepts in Cryptography, Governance and Compliance.
2. Develop cyber security strategies and policies.
3. Practice with an expertise in academics to design and implement security solutions.

Course Outcomes:

Students will be able to:

1. Measure the performance and troubleshoot cyber security systems.
2. Analyze and evaluate the cyber security needs of an organization.
3. Implement cyber security solutions and use of cyber security, information and cyber/computer forensics software/tools.

Curriculum Details:

Module No.	Unit No.	Topic	Hrs. Required
1.0		**IT Act and Encryption**	
	1.1	Object and Scope of the Act	**5**
	1.2	Symmetric Cryptography	
	1.3	Asymmetric Cryptography	
	1.4	RSA Algorithm	
	1.5	Public Key Encryption	
2.0		**Authentication of Electronic records & E-Governance**	
	2.1	Authentication of Electronic records	**10**
	2.2	Digital Signature	
	2.3	RSA Digital Signature	
	2.4	Hash Function	
	2.5	Working of Digital Signature	
3.0		**Certifying Authorities**	
	3.1	Need of Certifying Authorities	**5**
	3.2	Functioning of Certifying Authorities	
	3.3	Types of Certificates ,	
	3.4	Identification, Authorizing, Transactional certificate	
	3.5	Appointment and Functions of Controller	
4.0		**Domain Name Disputes and Cyber Crimes**	
	4.1	Background of Domain	**10**
	4.2	Insertion of Internet Domain Names and the trademark Law	
	4.3	Classification of Cyber Crime	
	4.4	Damage to computer System: Unauthorized Access, Packet Sniffing, Tempest attack, Password Cracking, Butter overflow	
	4.5	Computer virus: Viruses, Logic Bomb, Worms	

Reference Books:

1. Cyber Law in India by Farooq Ahmad – Pioneer Books
2. Hand book of Cyber & E-commerce Laws by P.M. Bakshi & R.K.Suri – Bharat Law house New Delhi
3. The Indian Cyber Law by Suresh T Vishwanathan – Bharat Law house New Delhi.

Course Structure: *Skill Based Course -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTSC1201	Multimedia (Practical)	--	02	--	02	02

Skill Based Course -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTSC1201	Multimedia (Practical)	--	--	--	--	30	20	50

SNTTSC1201: **Multimedia** *(practical) (Skill Based Course)*

Sr No	Practical Name
1	Bouncing ball animation using frame by frame.
2	Add sound in a video file.
3	Animate moving car in different layers.
4	Create a smiley as 2D demonstration.
5	Create a traffic light with different timeline.
6	Create a powerpoint Text Effects and animation.
7	Create a Responsive animated PowerPoint slides.
8	Split a video and save as two different names.
9	Merge two different videos and save it as a single name.
10	Create any two animations of real world example

Course Structure:

Major 1 – Teaching Scheme

Course Code	Course Name	Teaching Scheme (Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCT1251	Linux Administration Part - I	03	--	02	--	02

Major 1 – Assessment Scheme

Course Code (1)	Course Name (2)	Theory				Practical		Total [col (5+6) Or Col(7+8)]
		CA			ESA (6)			
		Test I (3)	Test II (4)	Avg. (T1&t2) (5)		CA (7)	ESA (8)	
SNTTCT1251	Linux Administration Part - I	10	10	10	40	--	--	**50**

SNTTCT1251: Linux Administration Part - I (Major 1) Curriculum Details

Course pre-requisite:

1. Basic Computer Skills

Know how to use operating systems (Windows/Linux/macOS), install software, and navigate file systems.

Course Objectives:

- The main objective of Linux Operating system is to introduce students with basic concepts of Open source code operating system.
- To family's students with file and directory structure of Linux with commands and utilities, their processes and resources with graphical and command line interface
- To brief the student about software management and network interface in Linux OS

Course Outcomes:

- Appreciate the role of open source operating system as System software.
- Learner will handle Linux OS for software development, web server and database administration for their carrier.

Curriculum Details:

Module No.	Unit No.	Topic	Hrs. Required
1.0		**Managing the File system**	
	1.1	The Fedora Core Linux File system,	**5**
	1.2	Basics working with ext3 File system,	
	1.3	Other File system Available to Fedora Core Linux,	
	1.4	Creating a File system,	
	1.5	Mounting File systems, relocating a File system	
2.0		**Managing Users**	
	2.1	User Accounts, Managing Groups ,	**10**
	2.2	Managing Users , Managing Passwords	
	2.3	Getting System Administrator Privileges to Regular Users ,	
	2.4	The User Login Process	
	2.5	Disk Quotas	
3.0		**Backing Up, Restoring, and Recovery**	
	3.1	Choosing a Backup Strategy,	**5**
	3.2	Choosing a Backup Hardware and Media,	
	3.3	Using Backup Software Copying Files,	
	3.4	Undeleting Files,	
	3.5	System Rescue	
4.0		**Printing with Fedora**	
	4.1	Overview of Fedora Printing,	**10**
	4.2	Configuring and Managing Print Services, Creating and Configuring Local Printers,	
	4.3	Creating Network Printers	
	4.4	Console Print Control,	
	4.5	Using the Common UNIX Printing System (CUPS) GUI	

Reference Books: Red Hat Linux and Fedora Unleashed – By Bill Ball and Hoyt Duff

Course Structure: *Major 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCP1253	Linux Administration Part - I (Practical)	--	02	--	02	02

Major 1 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTCP1253	Linux Administration Part - I (Practical)	--	--	--	--	30	20	50

SNTTCP1253**:** Linux Administration Part - I *(practical) (Major 1)*

Sr No	Practical Name
1	Study of Mounting File systems
2	Study of network connectivity in Linux
3	Study of Creating and Configuring Local Printers.
4	Study of samba server.
5	Study of Backup Hardware and Media
6	Study of DHCP Server.
7	Study of TCP/IP network Configuration
8	Study of Creating and Configuring Network Printers
9	Study of samba server.
10	Study of DNS server.

Course Structure:

Major 2 – Teaching Scheme

Course Code	Course Name	Teaching Scheme (Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCT1252	Network Administration Part - II	03	--	02	--	02

Major 2 – Assessment Scheme

Course Code (1)	Course Name (2)	Theory				Practical		Total [col (5+6) Or Col(7+8)]
		CA			ESA (6)			
		Test I (3)	Test II (4)	Avg. (T1&t2) (5)		CA (7)	ESA (8)	
SNTTCT1252	Network Administration Part - II	10	10	10	40	--	--	**50**

SNTTCT1252: Network Administration Part - II (Major 2) Curriculum Details

Course pre-requisite:

1. Basic Computer Skills
   Know how to use operating systems (Windows/Linux/macOS), install software, and navigate file systems.

Course Objectives:

- Describe the role of Virtual Trucking Protocol and place these protocols in the context of modern network design
- Understand trucking protocols like IEEE 802.1Q and ISL according to industry requirement
- Brief understanding of VLANs & Trunks & CISCO Switches.

Course Outcomes:

- Inter VLAN routine will help to establish End to End communication between devices. ⁻ Best Practices for configuring IP Subnet & VLAN protocols
- Best Practices for configuring NAT & ACL

Curriculum Details:

Module No.	Unit No.	Topic	Hrs. Required
1.0		**LAN Switching**	
	1.1	LAN Switching Concepts, Historical Progression. Hubs, Bridges, and Switches ,	**5**
	1.2	Switching Logic, Accessing the Cisco Catalyst 2960 Switch CLI ,	
	1.3	Cisco Catalyst Switches and the 2960 Switch , Switch Status from LEDs ,	
	1.4	Accessing the Cisco IOS CLI , CLI Access from the Console ,	
	1.5	Accessing the CLI with Telnet and SSH , Password Security for CLI Access	
2.0		**Virtual LANs**	
	2.1	virtual LAN Concepts, Trucking with ISL and 802.1Q, IP Subnets and VLANs,	**10**
	2.2	VLAN Trucking Protocol (VTP),	
	2.3	VLAN and VLAN Trucking Configuration and Verification,.	
	2.4	VTP Configuration and Verification	
3.0		**Infrastructure Services**	
	3.1	Configure and verify DHCP on a router, Configure, verify, and troubleshoot inside source NAT,	**5**
	3.2	Static NAT Configuring and Verification,	
	3.3	Dynamic NAT Configuring and Verification,	
	3.4	PAT Configuring and Verification,	
	3.5	BGP protocol configuration & verification.	
4.0		**IP Version 6**	
	4.1	Global Unicast Addressing,	**10**
	4.2	Routing, and Subnetting,	
	4.3	IPv6 Protocols and Addressing,	
	4.4	IPv6 Transition Options	
	4.5	Configuring IPv6 Routing and Routing Protocols	

Reference Books: CCENT/CCNA ICND1 (Second Edition) - Wendell Odom

Course Structure: *Major 2 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCP1254	Network Administration Part - II (Practical)	--	02	--	02	02

Major 2 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTCP1254	Network Administration Part - II(Practical)	--	--	--	--	30	20	50

SNTTCP1254**:** Network Administration Part - II *(practical) (Major 2)*

Sr No	Practical List
1	Study of virtual LAN.
2	Study of VLAN Trucking.
3	Study of IP subnet & VLAN.
4	Study of VTP protocol configuration.
5	Study of Static NAT.
6	Study of Dynamic NAT.
7	Study of PAT NAT.
8	Study of Standard ACL.
9	Study of telnet password.
10	Study of Extended ACL.

Course Structure:

Minor 1 – Teaching Scheme

Course Code	Course Name	Teaching Scheme (Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMT1251	Software Testing	03	--	02	--	02

Minor 1 – Assessment Scheme

Course Code (1)	Course Name (2)	Theory				Practical		Total [col (5+6) Or Col(7+8)]
		CA			ESA (6)			
		Test I (3)	Test II (4)	Avg. (T1&t2) (5)		CA (7)	ESA (8)	
SNTTMT1251	Software Testing	10	10	10	40	--	--	**50**

Code: Software Testing (***Minor*** 1) Curriculum Details

Course pre-requisite:

1. Basic knowledge of computers

Course Objectives:

1. To learn detection of bugs and performance issues in software.
2. To understand the development and testing plans.
3. To learn various testing tools for quick detection of bugs and errors.
4. To work with various software testing methods.

Course Outcomes:

Students will be able to:

1. Determine the correctness, completeness and quality of software being developed.
2. Understand the technical documentation of software.

Curriculum Details:

Module No.	Unit No.	Topic	Hrs. Required
1.0		**Quality concepts**	**8**
	1.1	Software Quality	
	1.2	McCall‟s Quality Factors	
	1.3	ISO 9126 Quality Factors	
	1.4	Targeted Quality Factors	
	1.5	The Cost of Quality	
	1.6	Quality and Security	
	1.7	Quality Control	
	1.8	Quality Assurance	
2.0		**Software Quality Assurance**	**7**
	2.1	Software Quality Assurarance	
	2.2	Software Reviews	
	2.3	Formal Technical Reviews	
	2.4	Software Reliability	
	2.5	The SQA Plan	
3.0		**Software Testing Strategies**	**8**
	3.1	A Strategic Approach to Software Testing	
	3.2	Unit Testing	
	3.3	Integration Testing	
	3.4	Validation Testing	
	3.5	System Testing	
	3.6	The Art of Debugging	
4.0		**Testing Application**	**7**
	4.1	Software Testing Fundamentals	
	4.2	Internal and External Views of Testing	
	4.3	White-Box Testing	
	4.4	Basic Path Testing	
	4.5	Control Structural Testing	
	4.6	Black Box Testing	
		Total	**30**

Reference Books:

1. Software Engineering -A Practitioner's approach, Sixth Edition, Roger S. Pressman, McGraw-Hill Higher Education; (1 August 2007),ISBN-10: 0077227808
2. Software Engineering -A Practitioner's approach, Fifth Edition, Roger S. Pressman,McGraw-Hill Higher Education; (1 August 2005)
3. Software Testing Concepts and Tools NageswaraRoo Dreamtech Publication

Course Structure:

Minor 1 – Teaching Scheme

Course Code	Course Name	Teaching Scheme (Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMP1251	Software Testing (Practical)	--	02	--	02	02

Minor 1 – Assessment Scheme

Course Code (1)	Course Name (2)	Theory				Practical		Total [col (5+6) Or Col(7+8)]
		CA			ESA (6)			
		Test I (3)	Test II (4)	Avg. (T1&t2) (5)		CA (7)	ESA (8)	
SNTTMP1251	Software Testing (Practical)	--	--	--	--	20	30	**50**

SNTTMP1251: Software Testing (***Minor*** 1) Practical List

Practical No.	Title of Practical
1	Recording in context sensitive mode and analog mode
2	GUI checkpoint for single property
3	GUI checkpoint for single object/window
4	GUI checkpoint for multiple objects
5	a) Bitmap checkpoint for object/window b) Bitmap checkpoint for screen area
6	Database checkpoint for Default check
7	Database checkpoint for custom check
8	Database checkpoint for runtime record check
9	a) Data driven test for dynamic test data submission
	b) Data driven test through flat files
10	Batch testing without parameter passing
11	Data driven batch
12	Silent mode test execution without any interruption

Course Structure: Generic Elective -Teaching Scheme

Course Code	Course Name	Teaching Scheme (Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTGE1251	Content Management System	02	--	02	--	02

Generic Elective -Assessment Scheme

Course Code (1)	Course Name (2)	Theory				Practical		Total [col (5+6) Or Col(7+8)]
		CA			ESA (6)			
		Test I (3)	Test II (4)	Avg. (T1&t2) (5)		CA (7)	ESA (8)	
SNTTGE1251	Content Management System	10	10	10	40	--	--	**50**

SNTTGE1251**:** Content Management System (***Generic Elective***) Curriculum Details

Course pre-requisite:

1. Basic knowledge of computers

Course Objectives:

1. The primary goal of the course is for you to understand the breadth of content management from a systems perspective.
2. The secondary goal is for you to understand the scope of a content management implementation project and some of the variables and dynamics of an associated professional services relationship..

Course Outcomes:

Students will be able to:

1. A CMS content management system's outcomes include streamlined content creation, enhanced collaboration, improved organization, and cost-effectiveness.
2. It also enables businesses to create and manage websites and digital content more efficiently, even without coding knowledge, and allows for easy updates and maintenance.

Curriculum Details:

Module No.	Unit No.	Topic	Hrs. Required
1.0		WordPress	**8**
	1.1	Introduction to WordPress	
	1.2	Finding a Home for your WordPress Site	
	1.3	Installing WordPress on Your Site	
	1.4	Content Management using WordPress	
	1.5	Selecting the Right Tools	
	1.6	Image Formats	
	1.7	Fonts and Colors	
	1.8	Designing Your WordPress Site	
2.0		Joomla	**7**
	2.1	Understanding Basic Joomla Template Customizing Joomla Template	
	2.2	Building Custom Joomla Template Linking CSS	
	2.3	Linking Javascript Understanding include	
	2.4	Displaying content in XHTML, Creating a template installation package	
	2.5	Creating Custom Forms	
3.0		Drupal	**8**
	3.1	Introduction to Drupal,Finding a Home for your Drupal Site	
	3.2	Installing Drupal on Your Site	
	3.3	Content Management using Drupal	
	3.4	Selecting the Right Tools	
	3.5	Image Formats	
	3.6	Fonts and Colors, Designing Your Drupal Site	
4.0		Magento	**7**
	4.1	Magento Installation, Configure Magento Webstore	
	4.2	Magento Products	
	4.3	Magento Products Import	
	4.4	Magento Quantity, Magento Categories	
	4.5	Magento Special Prices, Magento Orders and Themes	
	4.6	Magento SSL	
		Total	**30**

Reference Books:

1. Content Critical, by Gerry McGovern

2. Content Management Bible, by Bob Boiko

3. Content Management for Dynamic Web Delivery, by JoAnn T. Hackos (2002) Content Management Handbook, by Martin White (2005).

Course Structure: *Vocational Course -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTVC1251	Data Analysis with Excel (practical)	--	02	--	02	02

Vocational Course -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)			
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)		CA (8)	ESA (9)	
SNTTVC1251	Data Analysis with Excel (practical)	--	--	--	--	30	20	50

SNTTVC1251**: Data Analysis with Excel** ***(practical) (Vocational Course)***

1	Navigate and Customize Excel Workbook
2	To create a dataset, format headers, apply number/date formatting, align text, and wrap text.
3	Insert/delete rows and columns, hide/unhide them, move data between sheets, and duplicate a sheet.
4	Perform Basic Calculations like SUM(), AVERAGE(), COUNT(), MIN(), and MAX() to analyze the data.
5	Sort data alphabetically or numerically, filter by specific.
6	Clean and Prepare Data TRIM(), PROPER(), and CLEAN() to tidy up names and addresses. Remove unnecessary spaces and symbols.
7	Logical Functions for Evaluation IF(), AND(), and OR() to create pass/fail results or highlight specific conditions in your dataset.
8	Extract parts of a name or ID using LEFT(), RIGHT(), MID(), UPPER(), LOWER(), and CONCAT().
9	Handle Errors and Empty Cells IFERROR() to catch errors like divide-by-zero. Use ISBLANK() to detect and mark missing data.
10	Use Data Cleaning Tools to Apply Remove Duplicates, Text to Columns to split names, and Find & Replace to clean data entries.
11	Flash Fill to auto-generate emails or initials. Use Data Validation to create dropdown lists for departments.
12	Create Charts for Visualization to Create bar, pie, and line charts for sales or score data. Customize titles, colors, and data labels.
13	Create a PivotTable to summarize sales by category and month. Apply sorting, number formatting, and custom labels.
14	Add a PivotChart to your PivotTable and include slicers for region or product for interactive filtering.
15	Use Goal Seek to calculate required sales to reach a profit target.

Guidelines for the Course Assessment:

A. Continuous Assessment (CA) (20% of the Maximum Marks) of theory and practical courses:

i. **For Theory Course:** CA shall form 20% of the Maximum Marks and shall be carried out over the entire semester. It shall be done by conducting **Two Tests** (Test I on 40% curriculum) and **Test II** (on remaining 40% syllabus) and average of the marks scored by a student in these two tests of a particular paper shall be taken as the **CA** score.

ii. **For Practical Course:** CA score of the practical course shall be marks scored by a student in the NTTernal practical examination conducted by the concerned teacher.

B. End Semester Assessment (80% of the Maximum Marks) of theory and practical courses:

(For illustration a paper of 02 credits, 50 marks has been considered and shall be modified appropriately depending upon credits of the individual paper)

Question Paper Pattern of the ESA:

i. ESA Question paper shall consist 6 questions, each of 10 marks

ii. Question No.1 shall be compulsory and shall be based on the entire syllabus

iii. Students shall have to solve ***ANY THREE*** of the remaining Five Questions (i.e. from question 2 to 6)

iv. Students shall have to solve a TOTAL of 4 Questions.

C. Assessment of On Job Training (OJT) Course (for 04 credits):

a. Continuous assessment part (**40%, 40 marks out of 100**) of this course shall be done by the mentor of the student, where he /she is supposed to complete his On Job Training. This shall be based on the regularity, participation and performance of the students at the place of OJT.

b. Semester End Assessment (ESA) (**60% of the total marks, 60 marks out of 100**) of this course shall be done by a panel of examiners in two parts

i. based on the work report submitted by the student (**50% i.e. 30 marks)** and

ii. **Remaining 50%** (30 marks) shall be based on his presentation and viva-voce on the work carried to be assessed by the panel of examiners. This assessment shall be done along with practical examinations of respective courses / subjects.

D. Assessment of Field Project (FP) and Research Project (RP) (e.g. for 02 credits)

a. Continuous assessment part (**40%, 20 marks out of 50**) of this course shall be done by the mentor of the student and shall be based on regularity, experimental work and performance of the student.

b. Semester End Assessment (ESA) (**60% of the total marks, 30 marks out of 50**) of this course shall be done shall be done by a panel of examiners in two parts

i. based on the work report submitted by the student (**50% i.e. 30 marks)** and

ii. **Remaining 50%** (30 marks) shall be based on his presentation and viva-voce on the work carried out by the student. This assessment shall be done along with practical examinations of the respective courses / subjects.

E. Assessment of Co-Curricular courses (CCC):

a. Assessment of the CCC course shall be done by the respective course coordinator as a part of CA and be based on the regularity, performance of a student and his participation in various activities as prescribed in the regulations prepared in this regard.

b. The End Semester Assessment (ESA) of the CCC courses shall be done as per the regulations prepared in this regard and shall be done on the basis of the write-up, presentation by the student on the activities that he has carried out in a semester.

c. Students shall have freedom to opt for more than one CCC courses. However, score of the best performing CC shall be considered for preparing his result.

F. Syllabi, Teaching and Examination Scheme for the courses in Column 7 and Column 8 (AEC, VEC, IKS, CI, EVS, CCCs, etc.) shall be common for all the students from different faculties.

Note: Number of lectures required to cover syllabus of a course depends on the number of credits assigned to a particular course. One credit of theory corresponds to 15 Hours lecturing and for practical course one credit corresponds to 30 Hours. For example, for a course of two credits 30 lectures of one-hour duration are assigned, while that for a three credit course45 lectures.

%%%%%%%%