॥ 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

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विज्ञान व तंत्रज्ञान विद्याशाखे अंतर्गत राष्ट्रीय शैक्षणिक धोरण २०२० नुसार पदवी प्रथम वर्षाचे अभ्यासक्रम (Syllabus) शैक्षणिक वर्ष २०२४–२५ पासून लागू करण्याबाबत.

प रि प त्र क

या परिपत्रकान्वये सर्व संबंधितांना कळविण्यात येते की, या विद्यापीठा अंतर्गत येणा—या सर्व संलग्नित महाविद्यालयामध्ये शैक्षणिक वर्ष २०२४–२५ पासून पदवीस्तरावर राष्ट्रीय शैक्षणिक धोरण –२०२० लागू करण्याच्या दृष्टीकोनातून विज्ञान व तंत्रज्ञान विद्याशाखे अंतर्गत येणा—या अभ्यासमंडळांनी तयार केलेल्या पदवी प्रथम वर्षाचे अभ्यासक्रमांना मा. विद्यापरिषदेने दिनांक १५ मे २०२४ रोजी संपन्न झालेल्या बैठकीतील विषय क्रमांक १५/५९–२०२४ च्या ठरावाअन्वये मान्यता प्रदान केली आहे. त्यानुसार विज्ञान व तंत्रज्ञान विद्याशाखेतील खालील बी. एस्सी प्रथम वर्षाचे अभ्यासक्रम (Syllabus) लागू करण्यात येत आहेत.

1) B. Sc. I year – Computer Science
2) B. Sc. I year – Computer Application
3) B. Sc. I year – Information Technology
4) B. Sc. I year – Computer Maintainance
5) B. Sc. I year – Computer Science (Single Major)
6) B. Sc. I year - Computer Network Technology (Single Major)
7) B. Sc. I year - Software Engineering (Single Major)
8) B. Sc. I year - Information Technology (Single Major)
9) B. Sc. I year - Computer Management (Single Major

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/२०२४–२५/१५४
दिनांक १६.०७.२०२४

डॉ. सरिता लोसरवार
सहा.कुलसचिव
शैक्षणिक (१–अभ्यासमंडळ) विभाग

प्रत : १) मा. आधिष्ठाता, विज्ञान व तंत्रज्ञान विद्याशाखा, प्रस्तुत विद्यापीठ.
२) मा. संचालक, परीक्षा व मुल्यमापन मंडळ, प्रस्तुत विद्यापीठ.
३) मा. प्राचार्य, सर्व संबंधित संलग्नित महाविद्यालये, प्रस्तुत विद्यापीठ.
४) मा. संचालक, सर्व संकुले परिसर व उपपरिसर, प्रस्तुत विद्यापीठ
५) मा. प्राचार्य, न्यू मॉडेल डिग्री कॉलेज हिंगोली.
६) सिस्टीम एक्सपर्ट, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ. याना देवून कळविण्यात येते की, सदर परिपत्रक संकेतस्थळावर प्रसिध्द करण्यात यावे.

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

स्वामी रामानंद तीर्थ
मराठवाडा विद्यापीठ, नांदेड

(Credit Framework and Structure of

B.Sc. Network Technology (Single Major)

First Year

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

UNDERGRADUATE PROGRAMME OF SCIENCE & TECHNOLOGY

Major in **DSC** and Minor in **DSM** (Network Technology)

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 Four Year Multidisciplinary Degree Program
with Multiple Entry and Exit
Subject: NTT (Major) /DSM (Minor 1 and Minor 2)
B.Sc. Network Technology (Single Major) First Year
Eligibility: 12th Arts/ Commerce/ Science/ MCVC

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
1 (4.5)	I	SNTTCT1101 (T 2Cr) SNTTCP1101 (P 2Cr) 4 Credits	SNTTMT1101 (T 2Cr) SNTTMP1101 (P 2Cr) 4 Credits	SINTMT1102 (T 2Cr) SINTMP1102 (P 2Cr) 4 Credits	SNTTGE1101 2 Credits	SNTTSC1101 2 Credits	AECENG1101 (2Cr) ACEMIL1101 (2Cr) IKSXXX1101 (2Cr) 6 Credits		22	44
	II	SNTTCT1151 (T 2Cr) SNTTCP1151 (P 2Cr) 4 Credits	SNTTMT1151 (T 2Cr) SNTTMP1151 (P 2Cr) 4 Credits	SINTMT1152 (T 2Cr) SINTMP1152 (P 2Cr) 4 Credits	SNTTGE1151 2 Credits	SNTTSC1151 2 Credits	AECENG1151 (2Cr) ACEMIL1151 (2Cr) VECCOI1151 (2Cr) *Constitution of India* 6 Credits		22	
	Cum. Cr.	08	08	08	04	04	08	04	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
18. **NTT:** Network Technology

B.Sc. Network Technology First Year Semester I *(Level 4.5)*
Teaching Scheme

	Course Code	Course Name	Credits Assigned			Teaching Scheme (Hrs/ week)	
			Theory	Practical	Total	Theory	Practical
Optional 1	SNTTCT1101	Logic Building with C	02	--	**04**	02	--
	SNTTCP1101	Logic Building with C (practical)	-	02			04
Optional 2	SNTTMT1101	Computer Network	02	--	**04**	02	--
	SNTTMP1101	Computer Network (P)	-	02			04
Optional 3	SNTTMT1102	Office Automation	02	--	**04**	02	--
	SNTTMP1102	Office Automation (P)	-	02			04
Generic Electives *(from other Faculty)*	SNTTGE1101	Basics of Info. Tech / Intellectual Property Rights **(Basket 3 of respective Faculty)**	02	--	**02**	02	--
Skill Based Course (related to Major)	SNTTSC1101	Computer Hardware & Networking	--	02	**02**	--	04
Ability Enhancement Course	AECENG1101	L1 – Compulsory English	02	--	**02**	02	--
Indian Knowledge System (IKS)	IKSXXX1101	Select from **Basket 5**	02	--	**02**	02	--
Ability Enhancement Course (MIL)	ACEMIL1101		02	--	**02**	02	--
Total Credits			**14**	**08**	**22**	**14**	**16**

B. Sc. Network Technology First Year Semester I *(Level 4.5)*

Examination Scheme

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

(For illustration we have considered a paper of 02 credits, 50 marks, need to be modified depending on credits assigned to individual paper)

Subject (1)	Course Code (2)	Course Name (3)	Theory				Practical		Total Col (6+7) / Col (8+9) (10)
			Continuous Assessment (CA)			ESA	CA (8)	ESA (9)	
			Test I (4)	Test II (5)	Average of T1 & T2 (6)	Total (7)			
Optional 1	SNTTCT1101	Logic Building with C	10	10	10	40	--	--	50
	SNTTCP1101	Logic Building with C (practical)	--	-	--	--	20	30	50
Optional 2	SNTTMT1101	Computer Network	10	10	10	40	--	--	50
	SNTTMP1101	Computer Network (practical)	--	-	--	--	20	30	50
Optional 3	SNTTMT1102	Office Automation	10	10	10	40	--	--	50
	SNTTMP1102	Office Automation (practical)	--	-	--	--	20	30	50
Generic Elective	SNTTGE1101	Basics of Info. Tech / Intellectual Property Rights **(Basket 3)**	10	10	10	40	--	--	50
Skill Based Course	SNTTSC1101	Computer Hardware & Networking	--	-	--	--	20	30	50
Ability Enhancement Course	AECENG1101	**L1 – Compulsory English**	10	10	10	40	--	--	50
Indian Knowledge System	IKSXXX1101	Title **(Basket 5)**	10	10	10	40	--	--	50
Ability Enhancement Course (MIL)	ACEMIL1101		10	10	10	40	--	--	50

B. Sc. Network Technology First Year Semester II (*Level 4.5*)

Teaching Scheme

	Course Code	Course Name	Credits Assigned			Teaching Scheme (Hrs/ week)	
			Theory	Practical	Total	Theory	Practical
Optional 1	SNTTCT1151	Web Technology	02	--	**04**	02	--
	SNTTCP1151	Web Technology (practical)	-	02			04
Optional 2	SNTTMT1151	Introduction to RDBMS	02	--	**04**	02	--
	SNTTMP1151	Introduction to RDBMS (practical)	-	02			04
Optional 3	SNTTMT1152	Data Structure	02	--	**04**	02	--
	SNTTMP1152	Data Structure (practical)	-	02			04
Generic Electives *(from other Faculty)*	SNTTGE1151	Digital Electronic / Digital Marketing. **(Basket 3 of respective Faculty)**	02	--	**02**	02	--
Skill Based Course *(related to Major)*	SNTTSC1151	DTP	--	02	**02**	--	04
Ability Enhancement Course	AECENG1151	L1 – Compulsory English	02	--	**02**	02	--
Indian Knowledge System (IKS)	IKSXXX1151	Constitution of India **Basket 5**	02	--	**02**	02	--
Ability Enhancement Course (MIL)	ACEMIL1151		02	--	**02**	02	--
Total Credits			**14**	**08**	**14**	**08**	**22**

B. Sc. Network Technology First Year Semester II (*Level 4.5*)
Examination Scheme
[20% Continuous Assessment (*CA*) and 80% End Semester Assessment (*ESA*)]
(For illustration we have considered a paper of 02 credits, 50 marks, need to be modified depending on credits assigned to individual paper)

| Subject (1) | Course Code (2) | Course Name (3) | Theory | | | | Practical | | Total Col (6+7) / Col (8+9) |
| | | | Continuous Assessment (CA) | | | ESA | | | |
			Test I (4)	Test II (5)	Average of T1 & T2 (6)	Total (7)	CA (8)	ESA (9)	(10)
Optional 1	SNTTCT1151	Web Technology	10	10	10	40	--	--	50
	SNTTCP1151	Web Technology (practical)	--	-	--	--	20	30	50
Optional 2	SNTTMT1151	Introduction to RDBMS	10	10	10	40	--	--	50
	SNTTMP1151	Introduction to RDBMS (practical)	--	-	--	--	20	30	50
Optional 3	SNTTMT1152	Data Structure	10	10	10	40	--	--	50
	SNTTMP1152	Data Structure (practical)	--	-	--	--	20	30	50
Generic Elective	SNTTGE1151	Digital Electronic / Digital Marketing. **(Basket 3 of respective Faculty)**	10	10	10	40	--	--	50
Skill Based Course	SNTTSC1151	DTP	--	-	--	--	20	30	50
Ability Enhancement Course	AECENG1151	**L1 – Compulsory English**	10	10	10	40	--	--	50
Indian Knowledge System	IKSXXX1151	Title **(Basket 5)**	10	10	10	40	--	--	50
Ability Enhancement Course (MIL)	**ACEMIL1151**		10	10	10	40	--	--	50

Course Structure: *Major -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCT1101	Logic Building with C	02	--	02	--	02

Major -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTCT1101	Logic Building with C	10	10	10	40	--	--	50

SNTTCT1101: *Logic Building with C (Major) Curriculum Details*

Course pre-requisite:

- Basic knowledge of computers.
- Basic understanding of Computer Application Software

Course Objectives:

- Programming basics and the fundamentals of C
- Data types in C
- Mathematical and logical operations in C
- Using if statement and loops
- Arranging data in arrays
- Implementing pointers

Course Outcomes:

- Develop a C program
- Control the sequence of the program and give logical outputs
- Implement strings in your C program
- Store different data types in the same memory

Curriculum Details: *(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		Basics of C Programming	
	1.1	Application areas of C Language.	
	1.2	Algorithm	
	1.3	Structure of a 'C' program.	**7**
	1.4	Variables, Data Types	
	1.5	Operators	
	1.6	Formatted input and output	
2.0		Control Structures & Functions	
	2.1	Decision making statement: - if, if-else, switch.	
	2.2	Loops: - while, do while, for.	**8**
	2.3	Use of break, continue and goto.	
	2.4	Function and Types of function, Recursion.	
3.0		Arrays & String	
	3.1	Arrays Operations - declaration, initialization, accessing array elements.	
	3.2	Types of Arrays	**8**
	3.3	Standard library functions	
	3.4	Storage Classes	
4.0		Pointer And Structure	
	4.1	What is Pointer, declaration and initialization	
	4.2	Creating structure	**7**
	4.3	Accessing Structure member using (dot operator)	
	4.4	Pointer and array, function, structure	
		Total	**30**

Text Books:

1. Complete C Reference – Herbert Schildt
2. Pointer in C – Yeshwant Kanetkar.

Reference Books:

1. Structured Programming approach using C – Forouzan and Gilberg, Thomson learning publications
2. The C Programming language – Kernighan and Ritchie

Course Structure: *Major -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCP1101	Logic Building with C (Practical)	--	02	--	02	02

Major -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTCP1101	Logic Building with C (Practical)					20	30	50

SNTTCT1101: *Logic Building with C (Practical) (Major) Curriculum Details*

Note :- Conduct at least 15 practical on given contents.

Course Structure: *Minor 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMT1101	Computer Network	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)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg of T1 & T2 (6)				
SNTTMT1101	Computer Network	10	10	10	40	--	--	50

SNTTMT1101: *Computer Network (Minor 1) Curriculum Details*

Course pre-requisite:

1. Basic handling knowledge about Computers.
2. Basics about Computer Applications.

Course Objectives:

- Introduction fundamental concepts of computer networking.
- Introduce students with various concepts used in network
- Introduce various technologies and standards
- Allow the student to gain expertise in areas of networking

Course Outcomes:

- After completing this course the student get the knowledge and ability to:
- Understand basic computer network technology.
- Students can identify the different types of network topologies and protocols.
- Students can Identify the different types of network standards

Curriculum Details: *(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Basics of Computer Network**	8
	1.1	Computer Networking	
	1.2	Signals — Analog and Digital Signals	
	1.3	Parallel and Serial Transmission Mode	
	1.4	Data Transmission Media	
	1.5	Network topologies- BUS, STAR, RING, MESH	
	1.6	Network Types: LAN, MAN, WAN	
2.0		**Network Architecture and IP Address**	7
	2.1	Network Standards, Ethernet, Types of Ethernet	
	2.2	Client and Server Architecture	
	2.3	Internet verses Intranet	
	2.4	Connection Oriented & Connectionless Services	
	2.5	IP-address Classes	
	2.6	IPV4 vs IPV6	
3.0		**Protocols and Network Models**	8
	3.1	Network protocol: TCP/IP, SMTP	
	3.2	DHCP and DNS	
	3.3	OSI/ISO Reference Model	
	3.4	TCP/IP Reference Model	
	3.5	Switching - Circuit Switching, Packet Switching, Message Switching	
4.0		**Networking Devices and Advanced Networking**	7
	4.1	Network Devices - NIC Cards, Switch, Repeaters, Bridges, Gateways, Router.	
	4.2	WiFi vs WiMax	
	4.3	Cloud Computing	
	4.4	Internet Of Things (IOT)	
		Total	**30**

Reference Books:

1) Andrew S. Tannenbaum,"Computer Networks", (Third Edition), Prentice-Hall of India Pvt. Ltd, New Delhi.

2) Data Communication and Networking by Behrouz Forouzan, TATA McGraw Hill.

3) Gerd E. Keiser", Local Area Networks", Tata McGraw Hill Edition, New Delhi.

Course Structure: *Minor 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMP1101	Computer Network (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)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg of T1 & T2 (6)				
SNTTMP1101	Computer Network (Practical)	--	-	--	--	20	30	50

SNTTMT1101: *Computer Network (Practical) (Minor 1) Curriculum Details*

Note :- Conduct at least 15 practical on given contents.

Course Structure: *Minor 2 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMT1102	Office Automation	02	--	02	--	02

Minor 2 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg of T1 & T2 (6)				
SNTTMT1102	Office Automation	10	10	10	40	--	--	50

SNTTMT1102: *Office Automation (Minor 2) Curriculum Details*

Course pre-requisite:

1. Basic handling knowledge about Computers.
2. Basics about Computer Applications.

Course Objectives:

- MS. Office course trains students how to use MS Office applications
- Used in office work such as creating professional-quality documents; store, organize and analyze information;
- Can perform arithmetic operations and functions; and create dynamic slide presentations with animation, narration, images, and much more, digitally and effectively.

Course Outcomes:

- After completing this course the student get the knowledge and ability to:
- Understand basic computer applications and MS Office Application.
- Students can identify the Efficient Data Management with Microsoft Excel:
- Can Create Effective Presentations with PowerPoint

Curriculum Details: *(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction to MS- Word**	**08**
	1.1	Opening Screen of MS-word	
	1.2	Home menu	
	1.3	Insert menu in MS - Word	
	1.4	Layout with all option	
	1.5	Reference menu	
	1.6	Mail-merge	
2.0		**Working with MS Excel**	**08**
	2.1	Creating charts , Conditional Formatting.	
	2.2	Working with Formulas and Functions	
	2.3	Goal seek	
	2.4	Data validation	
3.0		**Introduction to MS- Power point**	**8**
	3.1	Creating a new presentation based on template	
	3.2	Slide Transition	
	3.3	Custom Animation effects	
	3.4	Adding audio and video on slides.	
4.0		**Working with MS -Access**	**6**
	4.1	Creating the database in Access	
	4.2	Creating forms and adding new records in MS-Access.	
	4.3	Generating the report	
	4.4	Performing Queries	
		Total	**30**

ReferenceBooks:

1. MS Office 2000 Complete ,Paperback

2. Windows 98 Complete Microsoft 4. BPB Publication

3. Working in MS-Office Ron Mansfield 3. Tata McGraw Hill Edition

Course Structure: *Minor 2 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMP1102	Office Automation (Practical)	--	02	--	02	02

Minor 2 -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg of T1 & T2 (6)				
SNTTMP1102	Office Automation (Practical)	--	--	--	--	20	30	50

SNTTMP1102: *Office Automation (Practical) (Minor 2) Curriculum Details*

Note :- Conduct at least 15 practical on given contents.

Course Structure: *Generic Elective -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTGE1101	Basics of Info. Tech	02	--	02	--	02

Generic Elective -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTGE1101	Basics of Info. Tech	10	10	10	40	--	--	50

SNTTGE1101: *Basics of Info. Tech. (Generic Elective) Curriculum Details*

Course pre-requisite:

1. Basic things related to computer

Course Objectives:

- Learn basic principles of computer.
- Learn input output devices.

Course Outcomes:

- To learn Basic Function of Devices like I/O, HDD etc.
- To Understand the Fundamental of Software and Hardware.
- To understand the Concept of Operating System and Network.

Curriculum Details:*(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction to Computer and History**	
	1.1	Definition of Computer	
	1.2	Characteristics of Computer	8
	1.3	Basic Computer Organization	
	1.4	Generations of Computer	
2.0		**Computer Peripherals & Memory**	
	2.1	Input Devices :- Keyboard, Mouse, Trackball, Joystick	
	2.2	Output Devices :- Monitor, Printer, Projector, Biometric Devices	7
	2.3	Computer Memory :- RAM, ROM, Cache Memory	
	2.4	Storage Devices	
3.0		**Compact Disk, Digital Versatile Disk**	
	3.1	Hard Disk Drive	
	3.2	USB Flash Drive	8
	3.3	Memory Card	
	3.4	Introduction to Computer Network & Internet	
4.0		**Definition of Network**	
	4.1	Types of Network :- LAN, MAN, WAN	
	4.2	E-Mail	7
	4.3	Web Browser	
	4.4	Types of Web Browser	
		Total	**30**

Reference Books:

1 Fundamental of Computer –5th& 6th Edition, P.K. Sinha, BPB Publication

2 Fundamental of Computer - V. Raja Raman, PHI Publication

Course Structure: *Generic Electives -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTGE1101	Intellectual Property Rights	02	--	02	--	02

Generic Electives -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTGE1101	Intellectual Property Rights	10	10	10	40	--	--	50

SNTTGE1101: *Intellectual Property Rights (Generic Electives) Curriculum Details*

Course pre-requisite:

1. Basic understanding of Intellectual Properties, Patents, Trademarks, Copyrights and designs

Course Objectives:

- To make the students aware of their rights for the protection of their invention done in their project work.
- To get registration in our country and foreign countries of their invention, designs and thesis or theory
- to identify the different types of IPR's.

Course Outcomes:

- Get awareness of acquiring the patent
- Learn to have copyright for their innovative works.
- Get the knowledge of plagiarism in their innovations which can be questioned legally

Curriculum Details: *(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction to IPR**	**8**
	1.1	Meaning of property	
	1.2	Origin, Nature, Meaning of Intellectual Property Rights	
	1.3	Kinds of Intellectual property rights	
2.0		**Patent Rights and Copy Rights**	**7**
	2.1	Origin, Meaning of Patent	
	2.2	Types, Inventions which are not patentable	
	2.3	Registration Procedure	
	2.4	Rights and Duties of Patentee	
3.0		**Copy Rights and Trade Mark**	**8**
	3.1	Definition &Types of Copy Right	
	3.2	Registration procedure	
	3.3	Meaning & Nature of Trade Marks	
	3.4	Types, Registration of Trade Marks	
4.0		**Design**	**7**
	4.1	Definition, Object, Registration of Design	
	4.2	Cancellation of Registration	
	4.3	International convention on design	
	4.4	Functions of Design	
		Total	**30**

Reference Books:

1. Intellectual Property Rights and the Law, Gogia Law Agency, by Dr. G.B. Reddy
2. Law relating to Intellectual Property, Universal Law Publishing Co, by Dr. B.L.Wadehra
3. IPR by P. Narayanan
4. Law of Intellectual Property, Asian Law House, Dr.S.R. Myneni.

Course Structure: *Skill Based Course-Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTSC1101	Computer Hardware & Networking	--	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)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTSC1101	Computer Hardware & Networking	--	--	--	--	20	30	50

SNTTSC1101: *Computer Hardware & Networking (Skill Based Course) Curriculum Details*

Course pre-requisite:

1. Basic knowledge of computer.
2. Basic knowledge of Hardware & Networking

Course Objectives:

- To understand the basic Concepts of Computer Hardware and peripheral parts
- To understanding different tools of Computer Networking.
- To understanding different Computer Networking devices.

Course Outcomes:

- Get knowledge of computer hardware components.
- Get knowledge of different Computer Networking devices.
- Get knowledge Computer Networking commands and cables.

Curriculum Details:*(There shall be FOUR Modules in each course)*

SR No.	Practical List
1.	Study of different types of DOS Commands
2.	Study of Administrative tools in Windows OS
3.	Study of assigning IP addresses.
4.	Connect the computers in Local Area Network.
5.	Study of basic network command and Network configuration Commands
6.	Implementing Shared folder and assigning its permissions
7.	Configuring a Default Route
8.	Sharing the Printer on network
9.	Troubles shoot Networks.
10.	Recognition and use of various types of connectors RJ-45, RJ-11, BNC and SCST.

Course Structure: *Major -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCT1151	Web Technology	02	--	02	--	02

Major -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTCT1151	Web Technology	10	10	10	40	--	--	50

SNTTCT1151: *Web Technology (Major) Curriculum Details*

Course pre-requisite:

1. Should have knowledge about basics of computer.
2. Should have knowledge about the internet.

Course Objectives:

- To improve the skill to create the static web page.
- To develop the ability to create the dynamic web pages.
- To enhance the ability of Insert a graphic within a web page.
- To improve the skills to Create, validate and publish a web page

Course Outcomes:

- Able to design and implement dynamic websites
- Able to implement new html 5 tags.

Curriculum Details:*(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction of Web**	
	1.1	History of WWW.	
	1.2	Role of Web browser and web Server.	
	1.3	Client side Programming	7
	1.4	IDE applications of HTML.	
	1.5	Web Protocols HTTP, FTP	
2.0		**Introduction of HTML**	
	2.1	Structure of HTML	
	2.2	What is Tags & attributes of HTML	
	2.3	Create web page using Headings ,Paragraph, BR & HR	8
	2.4	Image Tag	
	2.5	Marquee Tag	
3.0		**Core Concepts of HTML**	
	3.1	Creating Ordered & Unordered List	
	3.2	Creating Anchor Tag	
	3.3	Using frame in HTML	8
	3.4	Creating Table in HTML	
	3.5	Creating Form Input and validation	
4.0		**HTML 5**	
	4.1	Introduction to HTML 5	
	4.2	Advantage and Disadvantages	7
	4.3	Elements in HTML 5	
		Total	**30**

Reference Books:

1. HTML The complete Reference -2nd Edition Thomas A. Powel Tata McGraw Hill publication

2. The complete Reference (HTML & XHTML)- 5th Edition Thomas A. Powel Tata McGraw Hill publication

Course Structure: *Major -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTCP1151	Web Technology (Practical)	--	02	--	02	02

Major -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTCP1151	Web Technology (Practical)	--	--	--	--	20	30	50

SNTTCT1151: *Web Technology (Practical) (Major) Curriculum Details*

Note :- Conduct at least 15 practical on given contents.

Course Structure: Minor 1 -Teaching Scheme

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMT1151	Introduction to RDBMS	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)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTMT1151	Introduction to RDBMS	10	10	10	40	--	--	50

SNTTMT1151: Introduction to RDBMS (Minor 1) Curriculum Details

Course pre-requisite:

1. Basic knowledge about DBMS

Course Objectives:

- To understand the features of Relational database.
- To use SQL- the standard language of relational databases for database operations.
- To understand the functional dependencies and design of the databases.

Course Outcomes:

- To study the basic concepts of relational databases
- Understand the use of Structured Query Language (SQL) and learn SQL syntax for writing queries.
- Apply normalization techniques to normalize the databases.

Curriculum Details: *(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction to DBMS**	
	1.1	Introduction to DBMS and Purpose of Database Systems,	
	1.2	Database-System Applications, Data Abstraction and Database System Structure	
	1.3	Structure of relational databases, Domains, Relations	
	1.4	Keys – Super key, Candidate key, Primary key, Foreign key	7
	1.5	Relational algebra	
	1.6	Basic Concepts of ER model	
	1.7	Entity Set, Relationship Sets and Weak Entity Sets	
	1.8	Mapping Cardinalities, E-R diagrams, Extended E-R Features	
2.0		**Relational Database Design**	
	2.1	CODD's Rules	
	2.2	Relational Integrity: Domain, Referential Integrities, Enterprise Constraints	
	2.3	Features of Good Relational Designs	8
	2.4	Normalization, Atomic Domains and First Normal Form	
	2.5	Decomposition using Functional Dependencies	
	2.6	2NF, 3NF, and BCNF	
3.0		**Basics of SQL**	
	3.1	DDL, DML, DCL, Structure: Creation, Alteration	
	3.2	Defining constraints – Primary key, Foreign key, Unique key, Not null, Check	
	3.3	IN operator,	
	3.4	Functions - Aggregate Functions, Built-in Functions – Numeric, Date, String Functions	10
	3.5	Set operations, sub-queries, correlated sub queries	
	3.6	Use of group by, having, order by	
	3.7	Join and its types	
	3.8	Exist, Any, All	
	3.9	View and its types	
4.0		**Transaction control commands and PL/SQL Concepts**	
	4.1	Commit, Rollback, Save-point	
	4.2	Cursors	
	4.3	Stored Procedures	5
	4.4	Stored Function	
	4.5	Database Triggers	
		Total	30

Reference Books:

1. A. Silberschatz, H.F. Korth and S. Sudarshan , ―Database System Concepts‖, McGraw Hill, 6th Edition.

2. C.J. Date, A. Kannan, S. Swamynathan ―An introduction to Database Systems‖, Pearson, 8th Edition

3. "Oracle Database 10g PL/SQL Programming" by Scott Urman , Ron Hardman, MichaleMc Laughlin, Oracle Press, TMH, ISBN-0-07-059779-0.

4. "Oracle Database 10g The Complete Reference" By Kevin Loney, Bob Bryla

5. Oracle SQL, PL/SQL the programming language of ORACLE 4th Edition by Ivan Bayross.

Course Structure: *Minor 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMP1151	Introduction to RDBMS (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)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTMP1151	Introduction to RDBMS (Practical)	--	--	--	--	20	30	50

SNTTMP1151: *Introduction to RDBMS (Practical) (Minor 1) Curriculum Details*

Note :- Conduct at least 15 practical on given contents.

Course Structure: *Minor 2-Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMT1152	Data Structure	02	--	02	--	02

Minor 2-Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTMT1152	Data Structure	10	10	10	40	--	--	50

SNTTMT1152: *Data Structure (Minor 2) Curriculum Details*

Course pre-requisite:

3. Basic knowledge of computer system.
4. Basic knowledge of data types in programming language.
5. Basic knowledge of algorithms.

Course Objectives:

1. To teach the basic concepts of data structures and algorithms
2. To understand concepts about searching and sorting techniques
3. To understand basic concepts about stacks, queues, linked lists and trees.
4. To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures

Course Outcomes:

1. Ability to analyse algorithms.
2. Ability to summarize searching and sorting techniques.
3. Ability to describe stack, queue and linked list operation.

Curriculum Details:*(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction**	
	1.1	Basic technology; elementary data organization	
	1.2	Data structure	
	1.3	Data structure operations	
	1.4	Complexity, time space tradeoff	**8**
	1.5	Linear array	
	1.6	Representation of linear array in memory	
	1.7	Traversing linear array	
	1.8	Searching methods (Binary and linear search)	
2.0		**Sorting and Linked list**	
	2.1	Selection sort	
	2.2	Bubble sort	
	2.3	Insertion sort	
	2.4	Introduction to Linked list	**8**
	2.5	Representation of Linked list in memory	
	2.6	Searching a linked list	
	2.7	Memory allocation, Garbage collection	
	2.8	Insertion and deletion in linked list	
3.0		**Stacks, Queues, Recursion**	
	3.1	Stacks	
	3.2	Array representation of stacks	
	3.3	Operations on Stacks.	
	3.4	Arithmetic expression	**7**
	3.5	Queues	
	3.6	Queues operations	
	3.7	Priority queue	
4.0		**Tree**	
	4.1	Binary tree	
	4.2	Terminology of Binary tree	
	4.3	Types of Binary tree	**7**
	4.4	Traversing of binary tree	
	4.5	General tree	
		Total	**30**

Reference Books:

1. Data Structure by Seymour Lipschutz MC GRAWHILL
2. Data Structures And Algorithms Concepts, Techniques And Applications G.A.V. Pai
   MC GRAWHILL

Course Structure: *Minor 2-Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTMP1152	Data Structure (Practical)	--	02	--	02	02

Minor 2-Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTMP1152	Data Structure (Practical)	--	--	--	--	20	30	50

SNTTMP1152: *Data Structure (Practical) (Minor 2) Curriculum Details*

Note :- Conduct at least 15 practical on given contents.

Course Structure: *Major 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTGE1151	Digital Electronics	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)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTGE1151	Digital Electronics	10	10	10	40	--	--	50

SNTTGE1151: *Digital Electronics (Major 1) Curriculum Details*

Course pre-requisite:

- Basic about Digital Electronics

Course Objectives:

- To acquire the basic knowledge of digital logic levels and application of knowledge to understand digital electronic circuits.
- To prepare students to perform the analysis and design of various digital electronic circuits.

Course Outcomes:

- Can have a thorough understanding of the fundamental concepts and techniques used in digital electronics.

- To understand and examine the structure of various number systems and its applications in digital design.

- The ability to understand, analyze and design various combinational and sequential circuits.

- To develop skill to build and troubleshoot digital circuits.

Curriculum Details:*(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Number System and Codes**	7
	1.1	Decimal	
	1.2	Octal	
	1.3	Binary	
	1.4	Hexadecimal	
	1.5	Conversions from one number system to other number system	
2.0		**Logic Gates and Logic equation Simplification with K-MAP**	8
	2.1	Basic gates: AND gate, OR gate and NOT gate	
	2.2	Universal gates: NAND gate and NOR gate	
	2.3	Special purpose gates: EX-OR gate and EX-NOR gate	
	2.4	Standard representation of logical functions in SOP and POS form	
3.0		**Combinational Circuits and Converters**	7
	3.1	Half Adder and Full Adder	
	3.2	Multiplexer and its types	
	3.3	De-Multiplexers and its types	
	3.4	Encoder and Decoder (only one example)	
4.0		**Sequential Circuits**	8
	4.1	SR-FF	
	4.2	JK-FF	
	4.3	D-Type FF	
	4.4	T-Type FF	
	4.5	Asynchronous Counter	
	4.6	Synchronous Counter	
		Total	**30**

Reference Books:

1. "Modern Digital Electronics": -by R. P. Jain Tata McGraw -Hill Publication 3rfd Edition ISBN: 978-0-07-049492-3
2. MICROPROCESSOR -by B. Ram publication 5th Edition
3. Fundamentals of Computer by P.K. Sinha BPB publication 6th Edition ISBN:81-7656- 752-3.

Course Structure: *Generic Electives -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTGE1151	Digital Marketing	02	--	02	--	02

Generic Electives -Assessment Scheme

Course Code (2)	Course Name (3)	Theory				Practical		Total [Col (6+7) or Col (8+9)] (10)
		CA			ESA (7)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTGE1151	Digital Marketing	10	10	10	40	--	--	50

SNTTGE1151: *Digital Marketing (Generic Electives) Curriculum Details*

Course pre-requisite:

3. Basic knowledge of computer.
4. Basic knowledge of internet

Course Objectives:

- To understand the basic Concepts of Digital marketing
- To understanding different tools of Digital marketing.

Course Outcomes:

- Get knowledge of local and global market.

- Get knowledge of POEM Framework.

- Get knowledge different ad formats

Curriculum Details: *(There shall be FOUR Modules in each course)*

Module No.	Unit No.	Topic	Hrs. Required to cover the contents
1.0		**Introduction to Digital Marketing**	
	1.1	Fundamentals of Digital marketing & Its Significance	
	1.2	Traditional marketing Vs Digital Marketing	**6**
	1.3	Evolution of Digital Marketing	
	1.4	Key Drivers, Netizen's expectation	
2.0		**Digital marketing Strategy**	
	2.1	The Digital users in India	
	2.2	Consumer Decision journey	**8**
	2.3	POEM Framework	
	2.4	Segmenting & Customizing messages	
3.0		**Digital Marketing Terminology**	
	3.1	PPC and online marketing through social media	
	3.2	SEO techniques	
	3.3	Social Media Marketing	**8**
	3.4	Email Marketing,	
	3.5	Mobile Marketing	
4.0		**Study of Tools**	
	4.1	Display adverting	
	4.2	Different type of ad tools	**8**
	4.3	Types of display ads	
	4.4	Different ad formats	
		Total	**30**

Reference Books:
1. Digital Marketing, S.Gupta, McGraw-Hill
2. Quick win Digital Marketing, H. Annmarie , A. Joanna, Paperback edition
3. Digital Marketing –Kamat and Kamat-Himalaya
4. Marketing Strategies for Engaging the Digital Generation, D. Ryan,
5. Digital Marketing, V. Ahuja, Oxford University Press

Course Structure: *Skill based course -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SNTTSC1151	DTP	--	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)	CA (8)	ESA (9)	
		Test I (4)	Test II (5)	Avg. of T1 & T2 (6)				
SNTTSC1151	DTP	--	--	--	--	20	30	50

SNTTSC1151: *DTP (Skill based course) Curriculum Details*

SR No	Practical List
1.	Creating templates/master page for the given layout (setting grid, margin and columns)
2.	Importing, linking and saving files for text and graphics
3.	Print, proof and correct the saved page
4.	Creating Title page
5.	Creating style sheets and Table of Content
6.	Designing Letter head
7.	Designing Leaflet/Pamphlet
8.	Designing Envelop
9.	Designing Invitation card / greeting card
10.	Designing Bills / Vouchers
11.	Designing an Advertisement
12.	Designing Labels in multiple steps

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 internal 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 course 45 lectures.**

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