॥ 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

स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड

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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/२०२४–२५/९५४
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 संबधित संलग्नित महाविद्यालये, प्रस्तुत विद्यापीठ.
४) मा. संचालक, सर्व संकुले परिसर व उपपरिसर, प्रस्तुत विद्यापीठ
५) मा. प्राचार्य, न्यू मॉडल 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)

(Credit Framework and Structure of Four Year UG Program with Multiple Entry and Exit Option as per NEP-2020)

UNDERGRADUATE PROGRAMME OF

SCIENCE & TECHNOLOGY

Major in **Computer Science** and Minor in Multidisciplinary
(Subject)

Under the Faculty of Science & Technology

(Revised as per the Govt. Of Maharashtra circular Dt. 13th March 2024)

From the Desk of the Dean, Faculty of Science and Technology

Swami Ramanand Teerth Marathwada University, Nanded, enduring to its vision statement "***Enlightened Student: A Source of Immense Power***", is trying hard consistently to enrich the quality of science education in its jurisdiction by implementing several quality initiatives. Revision and updating curriculum to meet the standard of the courses at national and international level, implementing innovative methods of teaching-learning, improvisation in the examination and evaluation processes are some of the important measures that enabled the University to achieve ***the 3Es, the equity, the efficiency*** and ***the excellence*** in higher education of this region. To overcome the difficulty of comparing the performances of the graduating students and also to provide mobility to them to join other institutions the University has adopted the cumulative grade point average (CGPA) system in the year 2014-2015. Further, following the suggestions by the UGC and looking at the better employ ability, entrepreneurship possibilities and to enhance the latent skills of the stakeholders the University has adopted the Choice Based Credit System (CBCS) in the year 2018-2019 at graduate and post-graduate level. This provided flexibility to the students to choose courses of their own interests. To encourage the students to opt the world-class courses offered on the online platforms like, NPTEL, SWAYM, and other MOOCS platforms the University has implemented the credit transfer policy approved by its Academic Council and also has made a provision of reimbursing registration fees of the successful students completing such courses.

SRTM University has been producing a good number of high calibre graduates; however, it is necessary to ensure that our aspiring students are able to pursue the right education. Like the engineering students, the youngsters pursuing science education need to be equipped and trained as per the requirements of the R&D institutes and industries. This would become possible only when the students undergo studies with an updated and evolving curriculum to match global scenario.

Higher education is a dynamic process and in the present era the stakeholders need to be educated and trained in view of the self-employment and self-sustaining skills like start-ups. Revision of the curriculum alone is not the measure for bringing reforms in the higher education, but invite several other initiatives. Establishing industry-institute linkages and initiating internship, on job training for the graduates in reputed industries are some of the important steps that the University would like to take in the coming time. As a result, revision of the curriculum was the need of the hour and such an opportunity was provided by the New Education Policy 2020. National Education Policy 2020 (NEP 2020) aims at equipping students with knowledge, skills, values, leadership qualities and initiates them for lifelong learning. As a result the

students will acquire expertise in specialized areas of interest, kindle their intellectual curiosity and scientific temper, and create imaginative individuals.

The curriculum given in this document has been developed following the guidelines of NEP-2020 and is crucial as well as challenging due to the reason that it is a transition from general science based to the discipline-specific-based curriculum. All the recommendations of the ***Sukanu Samiti*** given in the **NEP Curriculum Framework-2023** have been followed, keeping the disciplinary approach with rigor and depth, appropriate to the comprehension level of learners. All the Board of Studies (BoS) under the Faculty of Science and Technology of this university have put in their tremendous efforts in making this curriculum of international standard. They have taken care of maintaining logical sequencing of the subject matter with proper placement of concepts with their linkages for better understanding of the students. We take this opportunity to congratulate the Chairman(s) and all the members of various Boards of Studies for their immense contributions in preparing the revised curriculum for the benefits of the stakeholders in line with the guidelines of the **Government of Maharashtra regarding NEP-2020**. We also acknowledge the suggestions and contributions of the academic and industry experts of various disciplines.

We are sure that the adoption of the revised curriculum will be advantageous for the students to enhance their skills and employ ability. Introduction of the mandatory ***On Job Training, Internship program*** for science background students is praise worthy and certainly help the students to imbibe firsthand work experience, team work management. These initiatives will also help the students to inculcate the workmanship spirit and explore the possibilities of setting up of their own enterprises.

Dr. M. K. Patil

Dean

Faculty of Science and Technology

Details of the Board of Studies Members in the subject Computer Science(Optional) under the faculty of Science & Technology of S.R.T.M. University, Nanded

Sr No	*Name of the Member*	*Designation*	*Address*	*Contact No.*
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Swami Ramanand Teerth Marathwada University, Nanded

Faculty of Science and Technology

General Guidelines for Selection of Courses

i. The **Major subject** is the discipline or course of main focus, bachelors' degree shall be awarded in that Discipline / subject.

ii. **Minor Subject(s)** is/are the subjects from the same discipline / faculty and shall act as supporting subjects to the Major.

iii. At the entry level of the 3/4-year UG program students shall be required to choose any THREE of the available subjects in a college/institute as **Major (Optional 1), Minor 1 (Optional 2) and Minor 2 (Optional 3) subjects, respectively**

iv. No. of credits assigned to the **Major (Optional 1), Minor 1 (Optional 2) and Minor 2 (Optional 3) shall be same in Semesters I and II.**

v. **In the second year of the degree program students shall Computer Science (Optional) one of the three subjects (Optional 1, 2 and 3) as a Major Subject and one as Minor Subject, while third optional shall be discontinued.**

vi. Students shall have an option to switch over from **Major to Minor or vice-versa after first year**.

vii. Once they finalize their **Major subject** in the beginning of the second year of the programme, they shall pursue their further education in that particular subject as the **Major** subject. Therefore, from second year onwards curriculum of the **Major** and **Minor** subjects shall be different.

viii. Students are required to Computer Science **(Optional) Generic /Open Computer Science Electives** (**vertical 3 in the credit framework**) compulsorily from the **faculties different than that of their Major / Minor subjects** (Computer Science from **Basket 3**).

ix. Content and other details of the GE are available in the document prepared by the respective BOS from which the candidate has chosen his/her GE.

x. Students shall be required to complete the Skill based courses of 06 credits in the first two years.

xi. Vocational Courses (VSEC or VSC) shall be related to the **Major** course

xii. Ability Enhancement Courses (AEC):

a) English Communication Course (Language) of 2 credits shall be offered in Semester I and III

b) Modern Indian Languages shall be of 2 credits and shall be offered in Semester II and IV

xiii. Courses marked as VEC, CI, IKS and CCC in Column Nos. 7and 8 shall be common for all the students irrespective of their faculties of studies.

xiv. Curriculum of VEC, CI, IKS and CCC shall be provided by the University separately.

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED - 431 606

Summary of the Credits Assigned to various courses to be proposed by the Board of Studies under the Faculty of Science and Technology

A. No. Of Credits assigned to various courses:

Sr No.	Heads	Credits assigned in each Semester								Total Credits
		I	II	III	IV	V	VI	VII	VIII	
1	Major Subject	4	4	8	8	16	16	18/14	18/14	92/84
2	Minor 1 Subject	4	4	2	2	--	--	--	--	12
3	Minor 2 Subject	4	4	--	--	--	--	--	--	08
3	Generic CSC Electives / Research Methodology	2	2	4	2	--	--	4	--	10 + 4 (14)
4	Vocational and Skill Enhancement Course / Indian Knowledge System	2	2	2	2	4	2	--	--	8+6 (14)
5	Ability Enhancement Course L1 (English)	2	--	2	--	--	--	--	--	4
6	Ability Enhancement Course L2 (SL)	--	2	--	2	--	--	--	--	4
7	Value Added Course /IKS (Constitution of India / EVS)	2	2	--	2	--	--	--	--	6
8	Community Engagement Services NCC/NSS/Sports/Culture	2	2	2	2	--	--	--	--	8
9	Project/ Field Work/ OJT /Internship	--	--	2	2	2	4	--/4	4/8	14/22
10	Total Credits	22	22	22	22	22	22	22	22	176

1. Major Courses *(92 / 84 credits, Basket-1)*: Each BOS shall suggest **Major Courses** of 04 credits **(02 credit Theory and 02 credit practical papers)** for semesters I and II
   As the University has adopted Three Optional credit framework, therefore, every student have a freedom to chose three courses of his choice from among the options made available by a particular college / institute. As number of credits assigned to all the three optional are same, therefore, he / she have a freedom to sCSCct any one of them as Major and one as Minor course from second year onward.

2. Minor Courses *(20 + 04 credits, Basket-2)*: **Total numbers of credits assigned to the Minor Courses are 20** and a course on Research Methodology of 4 credits in VIIth semester.

[Note: ***i.*** Each Board of studies is required to develop curriculum of **two theory papers and a practical course each of 02 credits**. This would be **common for major and minor courses** during semesters I and II. **No need of preparing Minor courses separately for First Year**.
ii. Students have option to select any of the three optional as **Major** and one **Minor** at the beginning of the **Third Semester (Second Year)** of their degree programme.]

3. **Generic CSCctives** ***(10 credits; for students from faculties other than Science and Technology, Basket-3)*****:** One paper each of **02/04 credits to be offered in semester I to VI** as Generic CSCctives. As these papers shall be opted by the students from other faculties; therefore, difficulty level of these courses shall at beginners' level (4.0). Each BOS shall **suggest a minimum of one and a maximum of four Generic CSCctive papers** to be offered during semesters I to VI. Students have freedom to choose one **Generic CSCctive** paper from **Basket-3** (common for all faculties) in each semester, provided these GE courses are from other faculty.

4. **Ability Enhancement Course (AEC)** ***(08 credits; common for all faculty students, Basket-4)*****:** One Language course each of 02 credits in the first four semesters.
L1 – First Language English ***(Compulsory for all disciplines)*** *(02 credits each in semesters I and III)*
L2 – Second Language (Students have option to choose second language from the **Language Basket-IV**) *(02 credits each in semesters II and IV)*

5. **Vocational and Skill Enhancement Courses (VC/SC)** ***(08 +06 credits, shall be related to the Major Course)*****:** Each BOS shall suggest four Vocational and three Skill Enhancement Courses each of 02 credits to be offered in semesters I to VI. These courses shall be related to the **Major subject**.

6. **Indian Knowledge System (IKS) (Generic)** ***(02 credits, common for all faculties, Basket-5)*****:** Students have a freedom to choose a course on **Indian Knowledge System** of 02 credits from ***Basket-5*** and shall be common for the students from all faculties of study.

7. **Value Education Courses (VEC)** ***(04 credits, common and compulsory for all faculty students)*****:** Students have to complete two Value Added courses each of 02 credits during semester V and VI and are compulsory for students of all faculties.
a. **Constitution of India** ***(02 credits)*** – in Semester V
b. **Environmental Studies** ***(02 credits)*** – in Semester VI

8. **Community Engagement Services (CES / CCC)*****(08 credits, common for all faculty students)*****:** Students need to complete four **Community Engagement Services** courses like **NCC, NSS, Sports, Cultural Studies** each of 02 credits in first four semesters I, II, III and IV and are common across the faculty.
Grades of NCC/NSS/Sports/Cultural courses shall be awarded to the students on the basis of their participation in University, Regional, National, International, Inter-University and Intra-University level activities. Guidelines for the award of grades for NCC/NSS/Sports/Cultural studies shall be prepared by a Committee constituted by the University.
9. **Field Work / Projects/ OJT/ Internship/Apprenticeship related to DSC major subjects** ***(14 credits for Honours and 22 credits for Honours with Research credits)****:* The students shall have to complete Field Work, Project, Case Study, Internship or Apprenticeship, etc. as per the credit framework.

10. **Bachelor of Science in Computer Science (Optional)Honors and Minor in DSM.**

For the award of **Bachelor of Science in Computer Science(Optional) Honors and Minor in DSM** students have to complete **92 credits** from Major, **20** credits of Minor and the required number of credits of Field Work / Projects/ Internship/Apprenticeship/Case study **related to Major subject**.

11. Bachelor of Science in Computer Science (Optional)Honors with Research and Minor in DSM.

For the award of **Bachelor of Science in Computer Science(Optional) Honors with Research and Minor in DSM** students have to complete **84 credits** theory courses of Major subject, **20 credits** of Minor and required number of credits of Field Work / Projects/ Internship/Apprenticeship/Case study **related to Major subject**.

12. These guidelines are as per the present instructions from Government of Maharashtra and are subject to change time-to-time as per the guidelines from Govt. of Maharashtra.

MULTIPLE EXIT Options for Students:

1. **Exit Option after First year**

   Students may take exit after completion of first year with **Certificate in Major (DSC) and Minor (DSM) subject** on completion of minimum 44 credits and additional 4 credits of NSQF skill / vocational in major/minor subject or internship during summer vacation.

2. **Exit Option after Two years**

   Students may take exit after completion of second year of the programme with **Diploma in Major (DSC) and Minor (DSM)** subject on completion of minimum 88 credits and additional 04 credits on NSQF skill / vocational or Internship on major/minor courses during summer vacation.

3. **Exit Option after Three years**

   Students may take exit with a Degree as **Bachelors of Science in Major (DSC) and Minor (DSM)** after earning minimum of 132 credits.

4. **Exit Option after Four Years** after completing 176 credits

   (a) Bachelor of Science in Computer Science(Optional) Honours and Minor in DSM.

   (b) Bachelor of Science in Computer Science(Optional) with Research and Minor in DSM.

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: DSC (Major) /DSM (Minor 1 and Minor 2)

(For illustration PHY, CHE and CSC combinations are considered, which may change for different combinations)

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 CSCctive (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	SCSCCT1101 (T 2Cr) Fundamentals of Computer Science SCSCCP1101 (P 2Cr) Lab I 4 Credits	SDSMCT1101 (T 2Cr) SDSMCP1101 (P 2Cr) 4 Credits	SDSMCT1101 (T 2Cr) SDSMCP1101 (P 2Cr) 4 Credits	SCSCGE1101 Digital Literacy 2 Credits	SCSCSC1101 PC Installation & Networking 2 Credits	AECENG1101 (2Cr) ACEMIL1101 (2Cr) IKSXXX1101 (2Cr) 6 Credits		22	44
	II	SCSCCT1151 (T 2Cr) Programming in C SCSCCP1151 (P 2Cr) Lab II 4 Credits	SDSMCT1151 (T 2Cr) SDSMCP1151 (P 2Cr) 4 Credits	SDSMCT1151 (T 2Cr) SDSMCP1151 (P 2Cr) 4 Credits	SCSCGE1151 ICT 2 Credits	SCSCSC1151 MS-Office 2 Credits	AECENG1151 (2Cr) ACEMIL1151 (2Cr) VECCOI1151 (2Cr) *Constitution of India* 6 Credits		22	
	Cum. Cr.	08	08	08	04	04	12		44	

***Exit option*: UG Certificate in Opt 1, Opt 2 and Opt 3 on completion of 44 credits** and additional **4 credits from NSQF / Internship**										
2 (5.0)	**III**	**SCSCCT1201 (2cr)** Programming in C++ **SCSCCT1202 (2cr)** DBMS **SCSCCP1203 (2cr)** **SCSCCP1204 (2cr)** **8 Credits**	**SDSMCT1201** OOP's Through C++ **SDSMCP1201** (1T+1P) **2 Credits**		**SCSCGE1201 (2cr)** Cyber Security **SCSCGE1202 (2cr)** Dos & Window **4 Credits**	**SCSCSC1201** Multimedia **2 Credits**	**ACEXXX1201** (MAR/HIN/URD /KAN/PAL) (2Cr) **2 Credits**	**SCSCFP1201 (2Cr)** **CCCXXX1201** (2Cr) **4 Credits**	**22**	
	IV	**SCSCCT1251 (2cr)** Programming in Java **SCSCCT1252 (2cr)** RDBMS **SCSCCP1253 (2cr)** **SCSCCP1254 (2cr)** **8 Credits**	**SDSMCT1251** Java Programming **SDSMCP1251** (1T+1P) **2 Credits**		**SCSCGE1251** Data Science **2 Credits**	**SCSCVC1251** Linux O.S **2 Credits**	**ACEXXX1251** (MAR/HIN/URD /KAN/PAL) (2Cr) **VECEVS1251** (2Cr) **4 Credits**	**SCSCFP1351 (2Cr)** **CCCXXX1151(2Cr)** **4 Credits**	**22**	
	Cum. Cr.	**24**	**12**	**08**	**10**	**06**	**14**	**12**	**88**	**88**
***Exit option*: UG Diploma in Major DSC and Minor DSM on completion of 88 credits and** additional **4 credits NSQF / internship in DSC**										
3 (5.5)	**V**	**SCSCCT1301** (T 3Cr) Computer Network **SCSCCT1302** (T 3Cr) PHP Programming **SCSCIK1303** (T 2Cr) **SCSCCP1304** (P 2Cr) **SCSCCP1305** (P 2Cr) **12 Credits**	**SCSCET1301** (T 3Cr) Visual Basic **SCSCEP1301** (P 1Cr) **4 Cr**	--		--	**SCSCVC1301** Hardware & Networking Essential-I **4 Credits**	--	**SCSCFP1301 (2 Cr)** **2 Credits**	**22**	

	VI	**SCSCCT1351** (T 3Cr) **Python Programming** **SCSCCT1352** (T 3Cr) **E-Commerce** **SCSCCT1353** (T 2Cr) **SCSCCP1354** (P 2Cr) **SCSCCP1355** (P 2Cr) **12 Credits**	**SCSCET1351** (T 3Cr) **VB.Net** **SCSCEP1351** (P 1Cr) **4 Cr**	--		--	**SCSCVC1351** **Hardware & Networking Essential-II** **2 Credits**	--	**SCSCOJ1351** **4 Credits**	**22**	
	Cum. Cr.	**56**		**12**	**08**	**10**	**6 + 8 =14**	**14**	**18**		**132**
***Exit option*: B. Sc. (Bachelor in Science) with Major in DSCand Minor in DSM**											
4 (6.0)	**VII**	**SCSCCT1401** (T 4Cr) **Advanced Java** **SCSCCT1402** (T 4Cr) **Android OS** **SCSCCT1403** (T 2Cr) **ASP.NET** **SCSCCP1404** (P 4Cr) **14 Credits**	**SCSCET1401** (T 3Cr) **Internet of Thing** **SCSCEP1401** (P 1Cr) **4 Cr**	*Research Methodology* **SCSCRM1401** **4 Credits**		--	--	--	--	**22**	
	VIII	**SCSCCT1451** (T 4Cr) **O. S. Concepts** **SCSCCT1452** (T 4Cr) **C#.NET** **SCSCCT1453** (T 2Cr) **Software Testing** **SCSCCP1454** (P 4Cr) **14 Credits**	**SCSCET1401** (T 3Cr) **System Security** **SCSCEP1401** (P 1Cr) **4 Cr**	--		--	--	--	**SCSCOJ1451** **4 Credits**	**22**	
	Cum Cr	**Honours: 92**		**18+4**	**08**	**10**	**V-08 + S-06**	**AEC-4+MIL-4 +VEC-4 +IKS-2**	**22**		**176**
***Exit option*: B. Sc. (Hons) with Major in DSCand Minor inDSM**											

4 (6.0)	**VII**	**SCSCCH1401** (T 3Cr) **Advanced Java** **SCSCCH1402** (T 3Cr) **Android OS** **SCSCCH1403** (T 4Cr) **(H- Honours)** **10 Credits**	**SCSCET1401** (T 3Cr) **Internet of Thing (IoT)** **SCSCEP1401** (P 1Cr) **4 Cr**	*Research Methodology* **SCSCRM1401** **4 Credits**		--	--	--	Research Project **SCSCRP1401** **4 Credits**	**22**	**44**
	VIII	**SCSCCH1451** (T 3Cr) **O. S.Concepts** **SCSCCH1452** (T 3Cr) **C#.NET Programming** **SCSCCH1453** (T 4Cr) **(H- Honours)** **10 Credits**	**SCSCET1451** (T 3Cr) **System Security** **SCSCEP1451** (P 1Cr) **4 Cr**	--		--	--	--	Research Project **SCSCRP1451** **8 Credits**	**22**	
***Exit option*: B. Sc. (Hons with Research) in DSCand Minor in DSM**											
Total Credits		**Major – 92 / 84**		**Minor 1 -18 + RM - 04**	**Minor 2 08**	**GE/OE - 10**	**(V-08 + S-06) 14**	**(AEC-8 + VEC-4 + IKS-2)14**	**(CC-08+FP/CS-06+OJT-04+RP-12) 30**	**176**	

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

Swami Ramanand Teerth Marathwada University, Nanded

Assigning TEN DIGIT Codes to the Courses ALPHANUMERIC Coding AAAAAA XXXX

1) First (A) Letter indicate Faculty: H – Humanities; **S** - Science; **C** – Commerce, & Management, **I** - Interdisciplinary Studies and **D** –Distance / External mode .

2) Next Three Letters(XXX) indicates Subject (e.g. **ECO** – Economics, **CSC** – Computer Science, **COM** – Commerce, **CSC** – Computer Sci.) etc.

3) Fourth and Fifth Letters indicate nature of the course : (e.g. **CT** – Core Theory, **CP** – Core Practical, **MT** – Minor Theory, **ET** – Elective Theory, **EP** – Elective Practical, **FP**– Field Project, **FW** – Field Work, **OJ** – On Job training, **GE** - Generic /open Elective, **IN** – Internship, **CS** – Case Study, **VC** - Vocational Skill Courses, **SC** - Skill Enhancement Courses, **AEC** - Ability Enhancement courses, **ML** - Modern Indian languages, **CCC** - Co-Curricular Courses/ Community Engagement and Service, **RM** - Research Methodology, **IKC** - Indian Knowledge System,**VEC** - Value Education Courses, etc.)

4) Sixth Character or First Number: indicate the Centre (**1**- for Affiliated colleges, **2** -Main Campus, **3**- Model Degree College, **4**- Sub-Centre Latur, **5**-Sub-Centre Parbhani, **6** –Sub-Centre Kinwat)

5) Seventh Character or second number indicate -Year of Study.e.g.**1** - First year,**2**- second year.etc.

6) Last Two Numbers indicate Course Number

e.g. **SCSCCT1101** – Faculty of **Science & Technology (S) COMPUTER SCIENCE** (CSC) subject **Core Theory** (**CT**) Course offered in the First Semester in affiliated colleges

Sr. No	UG/PG	Semester	Affiliated Colleges	Main Campus	Model Degree College	Sub-center Latur	Sub-center Parbhani	Sub-Centre Kinwat
1	First Year	Semester I	1101 to 1150	2101 to 2150	3101 to 3150	4101 to 4150	5101 to 5150	6101 to 6150
2		Semester II	1151 to 1199	2151 to 2199	3151 to 3199	4151 to 4199	5151 to 5199	6151 to 6199
3	Second Year	Semester III	1201 to 1250	2201 to 2250	3201 to 3250	4201 to 4250	5201 to 5250	6201 to 6250
4		Semester IV	1251 to 1299	251 to 2299	3251 to 3299	4251 to 4299	5251 to 5299	6251 to 6299
5	Third Year	Semester V	1301 to 1350	2301 to 2350	3301 to 3350	4301 to 4350	5301 to 5350	6301 to 6350
6		Semester VI	1351 to 1399	2351 to 2399	3351 to 3399	4351 to 4399	5351 to 5399	6351 to 6399
7	Fourth Year	Semester VII	1401 to 1450	2401 to 2450	3401 to 3450	4401 to 4450	5401 to 5450	6401 to 6450
8		Semester VIII	1451 to 1499	2451 to 2499	3451 to 3499	4451 to 4499	5451 to 5499	6451 to 6499
9	Fifth Year	Semester IX	1501 to 1550	2501 to 2550	3501 to 3550	4501 to 4550	5501 to 5550	6501 to 6550
10		Semester X	1551 to 1599	2551 to 2599	3551 to 3599	4551 to 4599	5551 to 5599	6551 to 6599

B. Sc. 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	SCSCCT1101	**Fundamentals of computer Science**	02	--	**04**	02	--
	SCSCCP1101	Lab I (practical)	-	02			04
Optional 2	SDSCMT1101	Title of paper 1	02	--	**04**	02	--
	SDSCMP1101	Title of paper 2 (practical)	-	02			04
Optional 3	SDSCMT1101	Title of paper 1	02	--	**04**	02	--
	SDSCMP1101	Title of paper 2 (practical)	-	02			04
Generic Electives *(from other Faculty)*	SCSCGE1101	**Digital Literacy** **(Basket 3 of respective Faculty)**	02	--	**02**	02	--
Skill Based Course (related to Major)	SDSCSC1101	**PC Installation and Networking**	--	02	**02**	--	04
Ability Enhancement Course	AECENG1101	L1 – Compulsory English	02	--	**02**	02	--
Indian Knowledge System (IKS)	IKSXXX1101	SCSCct from **Basket 5**	02	--	**02**	02	--
Language	AECMIL1101		02	--	**02**	02	--
Total Credits			**14**	**08**	**22**	**14**	**16**

B. Sc. 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			
			Test I (4)	Test II (5)	Average of T1 & T2 (6)	Total (7)	CA (8)	ESA (9)	
Optional 1	SCSCCT1101	**Fundamentals of computer Science**	10	10	10	40	--	--	50
	SCSCCP1101	Lab I (practical)	--	--	--	--	20	30	50
Optional 2	SDSCMT1101	Title of paper 1	10	10	10	40	--	--	50
	SDSCMP1101	Title of paper 2practical	--	--	--	--	20	30	50
Optional 3	SDSCMT1101	Title of paper 1	10	10	10	40	--	--	50
	SDSCMP1101	Title of paper 2 practical	--	--	--	--	20	30	50
Generic Elective	SCSCGE1101	**Digital Literacy (Basket 3)**	10	10	10	40	--	--	50
Skill Based Course	SCSCSC1101	**PC Installation and 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
Language	ACEMIL1101 CCCXXX1101		10	10	10	40	--	--	50

B. Sc. 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	SCSCCT1151	**Programming in C Language**	02	--	**04**	02	--
	SCSCCP1151	Lab I (practical)	-	02			04
Optional 2	SDSCMT1151	Title of paper 1	02	--	**04**	02	--
	SDSCMP1151	Title of paper 2 (practical)	-	02			04
Optional 3	SDSCMT1151	Title of paper 1	02	--	**04**	02	--
	SDSCMP1151	Title of paper 2 (practical)	-	02			04
Generic Electives *(from other Faculty)*	SCSCGE1151	**ICT** **(Basket 3 of respective Faculty)**	02	--	**02**	02	--
Skill Based Course (related to Major)	SDSCSC1151	**MS-Office**	--	02	**02**	--	04
Ability Enhancement Course	AECENG1151	L1 – Compulsory English	02	--	**02**	02	--
Indian Knowledge System (IKS)	IKSXXX1151	SCSCct from **Basket 5**	02	--	**02**	02	--
Constitution of India	VECCOI1151		02	--	**02**	02	--
Total Credits			**14**	**08**	**22**	**14**	**16**

B. Sc. 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)	CourseName (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	SCSCCT1151	**Programming in C Language**	10	10	10	40	--	--	50
	SCSCCP1151	Lab I (practical)	--	--	--	--	20	30	50
Optional 2	SDSCMT1151	Title of paper 1	10	10	10	40	--	--	50
	SDSCMP1151	Title of paper 2practical	--	--	--	--	20	30	50
Optional 3	SDSCMT1151	Title of paper 1	10	10	10	40	--	--	50
	SDSCMP1151	Title of paper 2 practical	--	--	--	--	20	30	50
Generic Elective	SCSCGE1151	**ICT (Basket 3)**	10	10	10	40	--	--	50
Skill Based Course	SDSCSC1151	**MS-Office**	--	--	--	--	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
Constitution of India	VECCOI1151		10	10	10	40	--	--	50

Course Structure:*Major 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SCSCCT1101	Fundamentals of Computer Science	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)	
SCSCCT1101	Fundamentals of Computer Science	10	10	10	40	--	--	50

Course Structure: *Major 1 -Teaching Scheme*

Course Code	Course Name (Paper Title)	Teaching Scheme(Hrs.)		Credits Assigned		
		Theory	Practical	Theory	Practical	Total
SCSCCT1151	Programming in C Language	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)	
SCSCCT1101	Programming in C Language	10	10	10	40	--	--	50

B. Sc. FY (Computer Science) (Semester I)

C. CSCSCCT1101 (Theory): Fundamentals of Computer Science

Periods: 30 Hours **Max. Marks: 50** [ESE:40 & CA:10] **Credits : 2**

Course Pre- requisite: HSC (XIIth Science) pass

Course Objectives:

- ➢ To understand the basics of computer system, its architecture.
- ➢ To understand functioning of computer components.
- ➢ To know the key terms related to the computer system
- ➢ To design Algorithm and flowcharts.
- ➢ Develop skills in analyzing the usability of a web site.
- ➢ Understand how to plan and conduct user research related to web usability.
- ➢ Learn techniques of responsive web design, including media.

Course Outcome: After completion of this course students will be -

- ➢ Identify the components of a personal computer system.
- ➢ Demonstrate input/output unit functions
- ➢ Design Algorithms and Flowcharts.
- ➢ Be able to use the HTML tags.
- ➢ Understand the principles of creating an effective web page.

D. *Curriculum Details:* SCSCCT1101(Theory):

Fundamentals of Computer Science

Module No.	Unit No.	Topic	Hrs. required to cover the contents
1.0		**Basics of Computer System**	09
	1.1	Computer Architecture: CPU (ALU, MU, CU), Input Ports, Output Ports	
	1.2	Input / Output Devices: Keyboard, Mouse, Monitor, Printer	
	1.3	Memory: Main Memory, Secondary Memory	
	1.4	Introduction to Algorithm	
	1.5	Introduction to Flowcharts and its symbols	
2.0		**Input /Output Devices**	09
	2.1	Input Devices: Keyboard, Point & Draw Devices, Data Scanning Devices,	
	2.2	Digitizer, Electronic Card Reader, Voice Recognition Devices	
	2.3	Output Devices: Monitor, Printer, Plotter	
	2.4	Screen Image Projector, Voice Response System	
3.0		**Introduction to Number System**	05
	3.1	Introduction to Decimal, Binary, Octal, Hexadecimal.	
	3.2	ASCII Code, Gray Code	
	3.3	BCD Code	
4.0		**Computer Software and OS**	07
	4.1	Introduction to Software	
	4.2	Types of Software	
	4.3	Operating System and its functions	
	4.4	Introduction to DOS and Windows	
	4.5	DOS Internal and External Commands	

Reference Books / Text Books:

1. Fundamentals of Computers, V. Rajaraman
2. Computers and Common Sense, R. Hunt and Shelly Y.
3. Computer Fundamentals (5Th Edition), P. K. Sinha

B.Sc.FY (Computer Science) (Semester I)

SCSCCP1101: Comp. Lab-I: Practical based on SCSCCT1101

Periods :60 Hours **Max. Marks: 50** [ESE:30 & CA:20] **Credits : 2**

Curriculum Details:

SCSCCP1101: Comp. Lab-I - Practical based on SCSCCT1101

Group I :

1. Study of Computer Architecture
2. Study of input devices
3. Study of output devices
4. Study of different Computer Memory
5. Study of Internal DOS Commands
6. Study of External DOS Commands
7. Study of Windows OS

Note:

i. Every student must perform at least **10** experiments

B.Sc. FY (Computer Science) (Semester I)

SCSCGE1101 [Generic Elective (GE) 1]: Digital Literacy

Periods :30 Hours **Max. Marks: 50** [ESE:40 & CA:10] **Credits: 2**

Course Pre- requisite: HSC (XIIth) pass from any faculty

Course Objectives:

- Understand the software testing life cycle
- Understand various components of computers
- Work confidently with GUI base operating system
- Create various business documents using Word Processor
- Create electronic Spreadsheets
- Work with charts and graphs
- Understand internet and its functionalities.
- Sending and receiving emails
- Create presentations
- Working with animations in presentations

Course Outcome: After completion of this course

- Knowing Computer
- Computer using GUI based Operating System
- Understanding Word Processing
- Using Spreadsheet
- Communication using the Internet
- WWW and Web Browsers

Curriculum Details:

SCSCGE1101 [Generic Elective 1]: Digital Literacy

Module No.	Unit No.	Topic	No. of hours. required to cover the contents
1		**Introduction to Computer**	**08**
	1.1	Computer Architecture, Classification of computer, Memory and their types	
	1.2	Input and output devices	
	1.3	Application of Computer	
2		**Operating System**	**09**
	2.1	Introduction to OS, Structure of OS	
	2.2	Types of Operating System, Multi-user, Multi-Tasking, Multi-Programming, Real time System	
	2.3	GUI based Operating System	
3		**Word Processing and Spreadsheet**	**06**
	3.1	Study of MS-Word	
	3.2	Study of MS-Excel	
4		**Computer Network**	**07**
	4.1	Computer Network: Introduction, types of network, Topology,Protocol, Internet, WWW, Web browser	
		Total	**30**

Text Books:

1. Fundamentals of Computers, V. Rajaraman
2. Computers and Common Sense, R. Hunt and Shelly Y.
3. Computer Fundamentals (5Th Edition), P. K. Sinha

B.Sc. FY (Computer Science) (Semester I)

SCSCSC1101: PC Installation & Networking (Skill)

Periods :60 Hours **Max. Marks: 50** [ESE:30 & CA:20] **Credits: 2**

Course Pre- requisite: HSC (XIIth) science pass

Course Objectives:

- Build practical skills in Assembling & maintenance of the personal desktop computer
- Installation of operating system
- Software's as well as to setup the network.

Course Outcomes: After completion of this course

- Knowledge of computer hardware and peripherals
- Installation
- PC assembly
- Trouble shooting

Curriculum Details:

SCSCSC1101: PC Installation & Networking (Skill)

Module No	Unit No	Topic	Hrs. Required to cover the contents
1		**Computer Fundamentals**	**15**
	1.1	Study of computer devices: Keyboard, Mouse, Monitor	
	1.2	RAM, ROM, Hard Disk, Pen Drive	
	1.3	CD Drive,DVD Drive	
	1.4	Motherboard, SMPS	
2		**Operating System**	**15**
	2.1	Installation of Windows OS on a Computer	
	2.2	Using System Tools: disk clean up	
	2.3	Disk fragmentation, Antivirus Software	
3.		**OS Administration**	**15**
	3.1	Windows OS Administration: Creating User	
	3.2	Installing/Uninstalling programs	
	3.3	copy files & folders, Creating a CD, Formatting Pen Drives	
4.		**Device Administration**	**15**
	4.1	Installing printer, Connecting to LAN	
	4.2	Installing Software	
	4.3	Installing Operating System	
	4.4	Downloading contents from Internet	
		Total	**60**

Books:

1. Computer Installation & Servicing by D Balsubrmaniyam, McGraw Hill Pub.
2. PC : Repair & Maintenance a practical guide by J Rosenthal, K Irwin
3. Easy PC Maintainance & Repair by Philip Laplante, McGraw Hill Pub.

B. Sc. FY (Computer Science) (Semester II)

SCSCCT1151 (Theory):

Programming in C-Language

Periods: 30 Hours **Max. Marks: 50** [ESE: 40 & CA:10] **Credits : 2**

Course Pre- requisite: HSC (XIIth) science pass

Course Objectives:

- The data structures paper helps the students to have the practical understanding of the subject..
- Able to write well-structured procedure-oriented programs.
- To solve problems using data structures such as linear lists, stacks, queues, hash tables, binary trees, heaps, binary search trees, and graphs and writing programs for these solutions.
- The course aims to prove exposure to problem-solving through programming
- It aims to train the student to the basic concepts of the C-Programming language.
- It is general purpose and procedure oriented programming language. In which we are able to develop OS and MAC operating system application software and programming languages.

Course Outcome: After completion of this course students will be –

- Students are able to use various data structures operations.
- Course is designed to prove complete knowledge of C-Language to develop logics which will them to create programs, application in C.
- To develop programs using operators and control statement.
- Introduces the more advanced features of the C language.

Curriculum Details:

SCSCCT1151 (Theory): Programming in C-Language

Module No.	Unit No.	Topic	Hrs. required to cover the contents
1.0		**Introduction**	06
	1.1	History of C	
	1.2	Compilers and Interpreters	
	1.3	Introduction to Algorithms	
	1.4	Flowcharts and Problems	
2.0		**Introduction to C**	08
	2.1	Introduction, Structure of a C program	
	2.2	Character set, C tokens, Constant and Variables	
	2.3	Console Input /Output Statements	
	2.4	Data types, Operators	
3.0		**Control , Looping Statements and Arrays**	09
	3.1	Decision Making Statement: If Statement, If- else Statement, Nested if –else Statement, Else if Ladder Statement, Switch Statement	
	3.2	Loop Statements: For Loop, While Loop, Do-while Loop	
	3.3	Break, Goto and Continue	
	3.4	Introduction to Arrays	
	3.5	Types of array with declaration and initialization: One Dimensional, Two Dimensional and Multidimensional Array	
	3.50	Standard String library function	
4.0		**Function**	07
	4.1	Functions in C	
	4.2	What is a function	
	4.3	User defined functions	
	4.4	Recursion	
	4.5	Introduction to Structure and Union	
		Total	30

Reference Books / Text Books:

1. Programming in ANSI C by E. Balaguruswami. 5th edition 2.
2. Let Us C – Yashwant Kanetkar
3. Gatway of C- P.B. Khannale
4. C Language Foundation- Dr. Madhav Bokare, Amol Suryawanshi
5. C Programming for Beginners- Madhav Bokare, N.G. Kurale

Curriculum Details:

SCSCCP1153: Comp. Lab-II : Practicals based on SCSCCT1151

1. Study and Perorm at least 10 program on C Language Concepts

Note:

Every student must perform at least **10** experiments

B.Sc. FY (Computer Science) (Semester II)

SCSCOE1151 (Theory): ICT

Periods :30 Hours **Max. Marks: 50** [ESE:40 & CA:10] **Credits: 2**

Course Pre- requisite: ICT (SCSCOE1151)

Course Objectives:

To develop an ability

- Basic ICT tools which help them in their day to day and life as well as in office and research

Course Outcomes:

On completion of this course, the students will be able to

- Understand the literature of social networks and their properties.
- Explain which network is suitable for whom.
- Develop skills to use various social networking sites like twitter, flickr, etc.
- Learn few GOI digital initiatives in higher education.
- Apply skills to use online forums, docs, spreadsheets, etc for communication, collaboration and research.
- Get acquainted with internet threats and security mechanisms.

Curriculum Details :

SCSCOE1151: ICT

Module No	Unit No	Topic	Hrs. Required to cover the contents
1		**Fundamentals of Internet**	**08**
	1.1	What is Internet?, Internet applications,Internet Addressing – Entering a Web Site Address, URL–Components of URL	
	1.2	Searching the Internet, Browser –Types of Browsers	
	1.3	Introduction to Social Networking: Twitter, Tumblr, LinkedIn	
	1.4	Facebook, flickr, Skype, yahoo, YouTube, WhatsApp	
2		**E-mail**	**08**
	2.1	Definition of E-mail -Advantages and Disadvantages	
	2.2	User Ids, Passwords, Email Addresses, Domain Names,	
	2.3	Mailers, Message Components	
	2.4	Message Composition,Mail Management.	
3		**G-Suite**	**07**
	3.1	Google drive, Google documents	
	3.2	Google spread sheets, Google Slides	
	3.3	Google forms	
4		**Internet security**	**07**
	4.1	Overview of Internet security, E-mail threats and secure E-mail, Viruses and antivirus software	
	4.2	Firewalls, Cryptography, Digital signatures, Copyright issues.	
		Total	**30**

Textbooks:

1. In-line/On-line : Fundamentals of the Internet and the World Wide Web, 2/e – byRaymond Greenlaw and Ellen Hepp, Publishers : TMH
2. Internet technology and Web design, ISRD group, TMH.
3. Information Technology – The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.

B.Sc. FY (Computer Science) (Semester II)

SCSCSC1151: MS-Office

Periods :60 Hours **Max. Marks: 50** [ESE:30 & CA:20] **Credits: 2**

Course Pre- requisite: B.Sc. I Sem Comp. Sci. Pass

Course Objectives:

- Office Automation is to enhance and upgrade the existing system
- It will simplify the task and reduce the paper work
- This means the software improves the working methods by replacing the existing manual system with the computer-based system

Course Objectives: After completion of this course

- Understand the computer software
- Hardware, made available to simplify and automate a variety of office operations
- Data processing, data manipulating and data presentation with various application

Curriculum Details : **SCSCSC1151: MS-Office**

Module No	Unit No	Topic	Hrs. Required to cover the contents
1		**Introduction to MS-Word**	**15**
	1.1	Word 2010 Basics: - Opening screen of MS-word, Home menu- font tab, Paragraph tab	
	1.2	Styles tab , Editing options in MS-Word, Insert menu- table tool	
	1.3	Header and Footer tool, Mail-merge	
2		**Working with MS-Excel**	**15**
	2.1	Introduction to MS-Excel, Formatting cells, Formatting columns, Row height	
	2.2	Merging, Splitting columns and connecting the worksheets, Working with Formulas and Functions	
	2.3	Creating charts, Goal seek, Data validation	
	2.4	Conditional Formatting	
3		**Working with Microsoft power point.**	**15**
	3.1	Opening Screen of MS PowerPoint, Creating a new presentation based on template	
	3.2	Design template and blank presentation, Slide Transition	
	3.3	Design template and blank presentation, Slide Transition	
4		**Introduction to MS-Access.**	**15**
	4.1	Opening screen of MS-Access, Advantages and disadvantages of MS-Access	
	4.2	Performing Queries, Generating the report	
	4.3	Creating the database in Access, Creating forms and adding new records in MS-Access.	
		Total	**60**

Recommended Books:

1. MS-DOS 6.22 by Russell A Stultz BPB publication.

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 course45 lectures.

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