



**THIRUVALLUVAR UNIVERSITY**  
**SERKKADU, VELLORE-632115**

**B. COM (COMPUTER APPLICATION)**

**SYLLABUS**

**FROM THE ACADEMIC YEAR**

**2023 – 2024**

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## B.COM., COMPUTER APPLICATION

### PROGRAMME OBJECTIVE:

The B.Com. Degree Programme provides ample exposure to courses from the fields of Commerce, Accountancy and Management. The course equips the students for entry level jobs in industry, promotes the growth of their professional career, entrepreneurship and a key contributor to the economic development of the country.

B.Com., Computer Applications is a 3-year undergraduate course. It is designed to have an understanding in the field of commerce, especially in the discipline that involves the use of software technology application. Under this program, the students would be taught the basics of Commerce like accountancy, law, banking and taxation along with the basics of computer language, computer applications in business, etc.

A student who has completed a BCom Computer Applications has career opportunities in both the Public and Private sectors where they can work as Business Consultants, Auditors, Business Analysts, App Developers, Computer Programmers.

<b>TANSICHE REGULATIONS ON LEARNING OUTCOMES-BASED CURRICULUM FRAMEWORK GUIDELINES BASED REGULATIONS FOR UNDER GRADUATE PROGRAMME</b>	
<b>Programme:</b>	<b>B.COM., COMPUTER APPLICATION</b>
<b>Programme Code:</b>	
<b>Duration:</b>	<b>UG - 3 years</b>
<b>Programme Outcomes:</b>	<b>PO1: Disciplinary knowledge:</b> Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate Programme of study <b>PO2: Communication Skills:</b> Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups. <b>PO3: Critical thinking:</b> Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. <b>PO4: Problem solving: Capacity</b> to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations. <b>PO5: Analytical reasoning:</b> Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and

examples, and addressing opposing viewpoints.

**PO6: Research-related skills:** A sense of inquiry and capability for asking relevant/appropriate questions, problem arising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation

**PO7: Cooperation/Team work:** Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team

**PO8: Scientific reasoning:** Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.

**PO9: Reflective thinking:** Critical sensibility to lived experiences, with self awareness and reflexivity of both self and society.

**PO10 Information/digital literacy:** Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

**PO 11 Self-directed learning:** Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.

**PO 12 Multicultural competence:** Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

**PO 13: Moral and ethical awareness/reasoning:** Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

**PO 14: Leadership readiness/qualities:** Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

**PO 15: Lifelong learning:** Ability to acquire knowledge and skills, including „learning how to learn“, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.

<p><b>Programme Specific Outcomes:</b></p>	<p><b>PSO1 – Placement:</b> To prepare the students who will demonstrate respectful engagement with others’ ideas, behaviors, beliefs and apply diverse frames of reference to decisions and actions.</p> <p><b>PSO 2 - Entrepreneur:</b> To create effective entrepreneurs by enhancing their critical thinking, problem solving, decision making and leadership skill that will facilitate startups and high potential organizations</p> <p><b>PSO3 – Research and Development:</b> Design and implement HR systems and practices grounded in research that comply with employment laws, leading the organization towards growth and development.</p> <p><b>PSO4 – Contribution to Business World:</b> To produce employable, ethical and innovative professionals to sustain in the dynamic business world.</p> <p><b>PSO 5 – Contribution to the Society:</b> To contribute to the development of the society by collaborating with stakeholders for mutual benefit</p>
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### Credit Distribution for UG Programmes

Sem I	Credit	H	Sem II	Credit	H	Sem III	Credit	H	Sem IV	Credit	H	Sem V	Credit	H	Sem VI	Credit	H
Part 1. Language – Tamil	3	6	Part..1. Language – Tamil	3	6	Part..1. Language – Tamil	3	6	Part..1. Language – Tamil	3	6	5.1 Core Course – \CC IX	4	5	6.1 Core Course – CC XIII	4	6
Part.2 English	3	6	Part..2 English	3	6	Part..2 English	3	6	Part..2 English	3	6	5.2 Core Course – CC X	4	5	6.2 Core Course – CC XIV	4	6
1.3 Core Course – CC I	5	5	2..3 Core Course – CC III	5	5	3.3 Core Course – CC V	5	5	4.3 Core Course – CC VII Core Industry Module	5	5	5. 3.Core Course CC -XI	4	5	6.3 Core Course – CC XV	4	6
1.4 Core Course – CC II	5	5	2.4 Core Course – CC IV	5	5	3.4 Core Course – CC VI	5	5	4.4 Core Course – CC VIII	5	5	5. 4.Core Course –/ Project with viva-voce CC -XII	4	5	6.4 Elective -VII Generic/ Discipline Specific	3	5
1.5 Elective I Generic/ Discipline Specific	3	4	2.5 Elective II Generic/ Discipline Specific	3	4	3.5 Elective III Generic/ Discipline Specific	3	4	4.5 Elective IV Generic/ Discipline Specific	3	3	5.5 Elective V Generic/ Discipline Specific	3	4	6.5 Elective VIII Generic/ Discipline Specific	3	5
1.6 Skill Enhancement Course SEC-1	2	2	2.6 Skill Enhancement Course SEC-2	2	2	3.6 Skill Enhancement Course SEC-4, (Entrepreneurial Skill)	1	1	4.6 Skill Enhancement Course SEC-6	2	2	5.6 Elective VI Generic/ Discipline Specific	3	4	6.6 Extension Activity	1	-
1.7 Skill Enhancement -(Foundation Course)	2	2	2.7 Skill Enhancement Course –SEC-3	2	2	3.7 Skill Enhancement Course SEC-5	2	2	4.7 Skill Enhancement Course SEC-7	2	2	5.7 Value Education	2	2	6.7 Professional Competency Skill	2	2
						3.8 E.V.S.	-	1	4.8 E.V.S	2	1	5.8 Summer Internship /Industrial Training	2				
	<b>23</b>	<b>30</b>		<b>23</b>	<b>30</b>		<b>22</b>	<b>30</b>		<b>25</b>	<b>30</b>		<b>26</b>	<b>30</b>		<b>21</b>	<b>30</b>
<b>Total – 140 Credits</b>																	

**Choice Based Credit System (CBCS), Learning Outcomes Based Curriculum Framework (LOCF) Guideline Based Credit and Hours Distribution System for all UG courses including Lab Hours**

**First Year – Semester-I**

<b>Part</b>	<b>List of Courses</b>	<b>Credit</b>	<b>No. of Hours</b>
Part-1	Language – Tamil	3	6
Part-2	English	3	6
Part-3	Core Courses & Elective Courses [in Total]	13	14
Part-4	Skill Enhancement Course SEC-1	2	2
	Foundation Course	2	2
		<b>23</b>	<b>30</b>

**Semester-II**

<b>Part</b>	<b>List of Courses</b>	<b>Credit</b>	<b>No. of Hours</b>
Part-1	Language – Tamil	3	6
Part-2	English	3	6
Part-3	Core Courses & Elective Courses including laboratory [in Total]	13	14
Part-4	Skill Enhancement Course -SEC-2	2	2
	Skill Enhancement Course -SEC-3 (Discipline / Subject Specific)	2	2
		<b>23</b>	<b>30</b>

**Second Year – Semester-III**

<b>Part</b>	<b>List of Courses</b>	<b>Credit</b>	<b>No. of Hours</b>
Part-1	Language - Tamil	3	6
Part-2	English	3	6
Part-3	Core Courses & Elective Courses including laboratory [in Total]	13	14
Part-4	Skill Enhancement Course -SEC-4 (Entrepreneurial Based)	1	1
	Skill Enhancement Course -SEC-5 (Discipline / Subject Specific)	2	2
	E.V.S	-	1
		<b>22</b>	<b>30</b>

**Semester-IV**

<b>Part</b>	<b>List of Courses</b>	<b>Credit</b>	<b>No. of Hours</b>
Part-1	Language - Tamil	3	6
Part-2	English	3	6
Part-3	Core Courses & Elective Courses including laboratory [in Total]	13	13
Part-4	Skill Enhancement Course -SEC-6 (Discipline / Subject Specific)	2	2
	Skill Enhancement Course -SEC-7 (Discipline / Subject Specific)	2	2
	E.V.S	2	1

		<b>25</b>	<b>30</b>
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**Third Year  
Semester-V**

<b>Part</b>	<b>List of Courses</b>	<b>Credit</b>	<b>No. of Hours</b>
<b>Part-3</b>	Core Courses including Project / Elective Based	22	26
<b>Part-4</b>	Value Education	2	2
	Internship / Industrial Visit / Field Visit	2	2
		<b>26</b>	<b>30</b>

**Semester-VI**

<b>Part</b>	<b>List of Courses</b>	<b>Credit</b>	<b>No. of Hours</b>
<b>Part-3</b>	Core Courses including Project / Elective Based & LAB	18	28
<b>Part-4</b>	Extension Activity	1	-
	Professional Competency Skill	2	2
		<b>21</b>	<b>30</b>

**Consolidated Semester wise and Component wise Credit distribution**

<b>Parts</b>	<b>Sem I</b>	<b>Sem II</b>	<b>Sem III</b>	<b>Sem IV</b>	<b>Sem V</b>	<b>Sem VI</b>	<b>Total Credits</b>
<b>Part I</b>	3	3	3	3	-	-	12
<b>Part II</b>	3	3	3	3	-	-	12
<b>Part III</b>	13	13	13	13	22	18	92
<b>Part IV</b>	4	4	3	6	4	1	22
<b>Part V</b>	-	-	-	-	-	2	2
<b>Total</b>	<b>23</b>	<b>23</b>	<b>22</b>	<b>25</b>	<b>26</b>	<b>21</b>	<b>140</b>

**\*Part I, II, and Part III components will be separately taken into account for CGPA calculation and classification for the under graduate programme and the other components. IV, V have to be completed during the duration of the programme as per the norms, to be eligible for obtaining the UG degree.**

**METHODS OF EVALUATION**

<b>METHODS OF EVALUATION</b>		
<b>Internal Evaluation</b>	Continuous Internal Assessment Test	<b>25 Marks</b>
	Assignments / Snap Test / Quiz	
	Seminars	
	Attendance and Class Participation	



<b>External Evaluation</b>	End Semester Examination	<b>75 Marks</b>
<b>Total</b>		<b>100 Marks</b>
<b>METHODS OF ASSESSMENT</b>		
<b>Remembering (K1)</b>	<ul style="list-style-type: none"> <li>• The lowest level of questions require students to recall information from the course content</li> <li>• Knowledge questions usually require students to identify information in the textbook.</li> </ul>	
<b>Understanding (K2)</b>	<ul style="list-style-type: none"> <li>• Understanding of facts and ideas by comprehending organizing, comparing, translating, interpolating and interpreting in their own words.</li> <li>• The questions go beyond simple recall and require students to combine data together</li> </ul>	
<b>Application (K3)</b>	<ul style="list-style-type: none"> <li>• Students have to solve problems by using / applying a concept learned in the classroom.</li> <li>• Students must use their knowledge to determine a exact response.</li> </ul>	
<b>Analyze (K4)</b>	<ul style="list-style-type: none"> <li>• Analyzing the question is one that asks the students to break down something into its component parts.</li> <li>• Analyzing requires students to identify reasons causes or motives and reach conclusions or generalizations.</li> </ul>	
<b>Evaluate (K5)</b>	<ul style="list-style-type: none"> <li>• Evaluation requires an individual to make judgment on something.</li> <li>• Questions to be asked to judge the value of an idea, a character, a work of art, or a solution to a problem.</li> <li>• Students are engaged in decision-making and problem – solving.</li> <li>• Evaluation questions do not have single right answers.</li> </ul>	
<b>Create (K6)</b>	<ul style="list-style-type: none"> <li>• The questions of this category challenge students to get engaged in creative and original thinking.</li> <li>• Developing original ideas and problem solving skills</li> </ul>	

**Highlights of the Revamped Curriculum:**

- Student-centric, meeting the demands of industry & society, incorporating industrial components, hands-on training, skill enhancement modules, industrial project, project with viva-voce, exposure to entrepreneurial skills, training for competitive examinations, sustaining the quality of the core components and incorporating application oriented content wherever required.
- The Core subjects include latest developments in the education and scientific front, advanced programming packages allied with the discipline topics, practical training, devising statistical models and algorithms for providing solutions to industry / real life situations. The curriculum also facilitates peer learning with advanced statistical topics in the final semester, catering to the needs of stakeholders with research aptitude.
- The General Studies and Statistics based problem solving skills are included as mandatory components in the ‘Training for Competitive Examinations’ course at the final semester, a first of its kind.
- The curriculum is designed so as to strengthen the Industry-Academia interface and provide more job opportunities for the students.
- The Statistical Quality Control course is included to expose the students to real life problems and train the students on designing a mathematical model to provide solutions to the industrial problems.
- The Internship during the second year vacation will help the students gain valuable work experience, that connects classroom knowledge to real world experience and to narrow down and focus on the career path.
- Project with viva-voce component in the fifth semester enables the student, application of conceptual knowledge to practical situations. The state of art technologies in conducting a Explain in a scientific and systematic way and arriving at a precise solution is ensured. Such innovative provisions of the industrial training, project and internships will give students an edge over the counterparts in the job market.
- State-of Art techniques from the streams of multi-disciplinary, cross disciplinary and inter disciplinary nature are incorporated as Elective courses, covering conventional topics to the latest DBMS and Computer software for Analytics.

### Value additions in the Revamped Curriculum:

Semester	Newly introduced Components	Outcome / Benefits
I	<p><b>Foundation Course</b> To ease the transition of learning from higher secondary to higher education, providing an overview of the pedagogy of learning abstract Statistics and simulating mathematical concepts to real world.</p>	<ul style="list-style-type: none"> <li>• Instil confidence among students</li> <li>• Create interest for the subject</li> </ul>
I, II, III, IV	<p><b>Skill Enhancement papers</b> (Discipline centric / Generic / Entrepreneurial)</p>	<ul style="list-style-type: none"> <li>• Industry ready graduates</li> <li>• Skilled human resource</li> <li>• Students are equipped with essential skills to make them employable</li> <li>• Training on Computing / Computational skills enable the students gain knowledge and exposure on latest computational aspects</li> <li>• Data analytical skills will enable students gain internships, apprenticeships, field work involving data collection, compilation, analysis etc.</li> <li>• Entrepreneurial skill training will provide an opportunity for independent livelihood</li> <li>• Generates self – employment</li> <li>• Create small scale entrepreneurs</li> <li>• Training to girls leads to women empowerment</li> <li>• Discipline centric skill will improve the Technical knowhow of solving real life problems using ICT tools</li> </ul>
III, IV, V & VI	<p>Elective papers- An open choice of topics categorized under Generic and Discipline Centric</p>	<ul style="list-style-type: none"> <li>• Strengthening the domain knowledge</li> <li>• Introducing the stakeholders to the State-of Art techniques from the streams of multi-disciplinary, cross disciplinary and inter disciplinary nature</li> <li>• Students are exposed to Latest topics on Computer Science / IT, that require strong statistical background</li> <li>• Emerging topics in higher education / industry / communication network / health sector etc. are introduced with hands-on-training, facilitates designing of statistical models in the respective</li> </ul>

		sectors
<b>IV</b>	DBMS and Programming skill, Biostatistics, Statistical Quality Control, Official Operations Statistics, Research	<ul style="list-style-type: none"> <li>• Exposure to industry moulds students into solution providers</li> <li>• Generates Industry ready graduates</li> <li>• Employment opportunities enhanced</li> </ul>
<b>II year Vacation activity</b>	Internship / Industrial Training	<ul style="list-style-type: none"> <li>• Practical training at the Industry/ Banking Sector / Private/ Public sector organizations / Educational institutions, enable the students gain professional experience and also become responsible citizens.</li> </ul>
<b>V Semester</b>	Project with Viva – voce	<ul style="list-style-type: none"> <li>• Self-learning is enhanced</li> <li>• Application of the concept to real situation is conceived resulting in tangible outcome</li> </ul>
<b>VI Semester</b>	Introduction of Professional Competency component	<ul style="list-style-type: none"> <li>• Curriculum design accommodates all category of learners; ‘Statistics for Advanced Explain’ component will comprise of advanced topics in Statistics and allied fields, for those in the peer group / aspiring researchers;</li> <li>• ‘Training for Competitive Examinations’ –caters to the needs of the aspirants towards most sought - after services of the nation viz, UPSC, ISS, CDS, NDA, Banking Services, CAT, TNPSC group services, etc.</li> </ul>
<b>Extra Credits: For Advanced Learners / Honors degree</b>		<ul style="list-style-type: none"> <li>• To cater to the needs of peer learners / research aspirants</li> </ul>

<b>Skills acquired from the Courses</b>	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
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**B.COM COMPUTER APPLICATION**

<b>Part</b>	<b>Course Code</b>	<b>Title of the Course</b>	<b>Credits</b>	<b>Hours</b>
<b>FIRST YEAR</b>				
<b>FIRST SEMESTER</b>				
Part I		Language – Tamil	3	6
Part II		English	3	6
Part III		Core Paper I – <b>Financial Accounting I</b>	<b>5</b>	<b>5</b>
Part III		Core Paper II - <b>Principles of Management</b>	<b>5</b>	<b>5</b>
Part III		Elective I - Programming in C and Lab	<b>3</b>	<b>4</b>
		Elective I - Python Programming and Lab		
Part IV		Skill Enhancement Course SEC – 1	<b>2</b>	<b>2</b>
		Foundation Course FC	<b>2</b>	<b>2</b>
<b>TOTAL</b>			<b>23</b>	<b>30</b>

**FIRST YEAR – SEMESTER – I**  
**CORE – I: FINANCIAL ACCOUNTING I**

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
	5				5	5	25	75	100
<b>Learning Objectives</b>									
<b>LO1</b>	To understand the basic accounting concepts and standards.								
<b>LO2</b>	To know the basis for calculating business profits.								
<b>LO3</b>	To familiarize with the accounting treatment of depreciation.								
<b>LO4</b>	To learn the methods of calculating profit for single entry system.								
<b>LO5</b>	To gain knowledge on the accounting treatment of insurance claims.								
<b>Prerequisites: Should have studied Accountancy in XII Std</b>									
Unit	Contents								No. of Hours
I	<b>Fundamentals of Financial Accounting</b> Financial Accounting – Meaning, Definition, Objectives, Basic Accounting Concepts and Conventions - Journal, Ledger Accounts– Subsidiary Books — Trial Balance - Classification of Errors – Rectification of Errors – Preparation of Suspense Account – Bank Reconciliation Statement - Need and Preparation								15
II	<b>Final Accounts</b> Final Accounts of Sole Trading Concern- Capital and Revenue Expenditure and Receipts – Preparation of Trading, Profit and Loss Account and Balance Sheet with Adjustments.								15
III	<b>Depreciation and Bills of Exchange</b> Depreciation - Meaning – Objectives – Accounting Treatments - Types - Straight Line Method – Diminishing Balance method – Conversion method. Units of Production Method – Cost Model vs Revaluation <b>Bills of Exchange</b> – Definition – Specimens – Discounting of Bills – Endorsement of Bill – Collection – Noting – Renewal – Retirement of Bill under rebate								15
IV	<b>Accounting from Incomplete Records – Single Entry System</b> Incomplete Records -Meaning and Features - Limitations - Difference between Incomplete Records and Double Entry System - Methods of Calculation of Profit - Statement of Affairs Method – Preparation of final statements by Conversion method.								15
V	<b>Royalty and Insurance Claims</b> Meaning – Minimum Rent – Short Working – Recoupment of Short Working – Lessor and Lessee – Sublease – Accounting Treatment. <b>Insurance Claims</b> –Calculation of Claim Amount-Average clause (Loss of Stock only)								15
<b>TOTAL</b>								<b>75</b>	
<b>THEORY 20% &amp; PROBLEM 80%</b>									

<b>CO</b>	<b>Course Outcomes</b>
CO1	Remember the concept of rectification of errors and Bank reconciliation statements
CO2	Apply the knowledge in preparing detailed accounts of sole trading concerns
CO3	Analyse the various methods of providing depreciation
CO4	Evaluate the methods of calculation of profit
CO5	Determine the royalty accounting treatment and claims from insurance companies in case of loss of stock.
<b>Textbooks</b>	
1.	S. P. Jain and K. L. Narang Financial Accounting- I, Kalyani Publishers, New Delhi.
2.	S.N. Maheshwari, Financial Accounting, Vikas Publications, Noida.
3.	Shukla Grewal and Gupta, "Advanced Accounts", volume 1, S.Chand and Sons, New Delhi.
4.	Radhaswamy and R.L. Gupta: Advanced Accounting, Sultan Chand, New Delhi.
5.	R.L. Gupta and V.K. Gupta, "Financial Accounting", Sultan Chand, New Delhi.
<b>Reference Books</b>	
1.	Dr. Arulanandan and Raman: Advanced Accountancy, Himalaya Publications, Mumbai.
2.	Tulsian , Advanced Accounting, Tata McGraw Hills, Noida.
3.	Charumathi and Vinayagam, Financial Accounting, S.Chand and Sons, New Delhi.
4.	Goyal and Tiwari, Financial Accounting, Taxmann Publications, New Delhi.
5.	Robert N Anthony, David Hawkins, Kenneth A. Merchant, Accounting: Text and Cases. McGraw-Hill Education, Noida.
<b>NOTE: Latest Edition of Textbooks May be Used</b>	
<b>Web Resources</b>	
1.	<a href="https://www.slideshare.net/mcsharma1/accounting-for-depreciation-1">https://www.slideshare.net/mcsharma1/accounting-for-depreciation-1</a>
2.	<a href="https://www.slideshare.net/ramusakha/basics-of-financial-accounting">https://www.slideshare.net/ramusakha/basics-of-financial-accounting</a>
3.	<a href="https://www.accountingtools.com/articles/what-is-a-single-entry-system.html">https://www.accountingtools.com/articles/what-is-a-single-entry-system.html</a>

**MAPPING WITH PROGRAMME OUTCOMES  
AND PROGRAMME SPECIFIC OUTCOMES**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
<b>CO1</b>	3	2	3	3	2	3	2	2	3	2	2
<b>CO2</b>	3	2	3	3	3	2	2	2	3	2	2
<b>CO3</b>	3	2	3	3	3	2	2	2	3	2	2
<b>CO4</b>	3	2	3	3	2	2	2	2	3	2	2
<b>CO5</b>	3	2	3	3	3	2	2	2	3	2	2
<b>TOTAL</b>	15	10	15	15	13	11	10	10	15	10	10
<b>AVERAGE</b>	3	2	3	3	2.6	2.2	2	2	3	2	2

**3 – Strong, 2- Medium, 1- Low**

**FIRST YEAR – SEMESTER – I**

**CORE – II: PRINCIPLES OF MANAGEMENT**

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
	5				4	5	25	75	100
<b>Learning Objectives</b>									
<b>LO1</b>	To understand the basic management concepts and functions								
<b>LO2</b>	To know the various techniques of planning and decision making								
<b>LO3</b>	To familiarize with the concepts of organisation structure								
<b>LO4</b>	To gain knowledge about the various components of staffing								
<b>LO5</b>	To enable the students in understanding the control techniques of management								
<b>Prerequisites: Should have studied Commerce in XII Std</b>									
Unit	Contents								No. of Hours
I	<b>Introduction to Management</b> Meaning- Definitions – Nature and Scope - Levels of Management – Importance - Management Vs. Administration – Management: Science or Art –Evolution of Management Thoughts – F. W. Taylor, Henry Fayol, Peter F. Drucker, Elton Mayo - Functions of Management - Trends and Challenges of Management. Managers – Qualification – Duties & Responsibilities.								15



II	<p><b>Planning</b>  Planning – Meaning – Definitions – Nature – Scope and Functions – Importance and Elements of Planning – Types – Planning Process - Tools and Techniques of Planning – Management by Objective (MBO). Decision Making: Meaning – Characteristics – Types - Steps in Decision Making – Forecasting.</p>	15
III	<p><b>Organizing</b>  Meaning - Definitions - Nature and Scope – Characteristics – Importance – Types - Formal and Informal Organization – Organization Chart – Organization Structure: Meaning and Types - Departmentalization– Authority and Responsibility – Centralization and Decentralization – Span of Management.</p>	15
IV	<p><b>Staffing</b>  Introduction - Concept of Staffing- Staffing Process – Recruitment – Sources of Recruitment – Modern Recruitment Methods - Selection Procedure – Test- Interview– Training: Need - Types– Promotion –Management Games – Performance Appraisal - Meaning and Methods – 360 degree Performance Appraisal – Work from Home - Managing Work from Home [WFH].</p>	15
V	<p><b>Directing</b>  Motivation –Meaning - Theories – Communication – Types - Barriers to Communications – Measures to Overcome the Barriers. Leadership – Nature - Types and Theories of Leadership – Styles of Leadership - Qualities of a Good Leader – Successful Women Leaders – Challenges faced by women in workforce - Supervision.</p> <p><b>Co-ordination and Control</b>  Co-ordination – Meaning - Techniques of Co-ordination.  Control - Characteristics - Importance – Stages in the Control Process - Requisites of Effective Control and Controlling Techniques – Management by Exception [MBE].</p>	15
<b>Total</b>		<b>75</b>
<b>Course Outcomes</b>		
<b>CO1</b>	Demonstrate the importance of principles of management.	
<b>CO2</b>	Paraphrase the importance of planning and decision making in an organization.	
<b>CO3</b>	Comprehend the concept of various authorizes and responsibilities of an organization.	
<b>CO4</b>	Enumerate the various methods of Performance appraisal	
<b>CO5</b>	Demonstrate the notion of directing, co-coordination and control in the management.	
<b>Textbooks</b>		
1	Gupta.C.B, -Principles of Management-L.M. Prasad, S.Chand& Sons Co. Ltd, New Delhi.	

2	DinkarPagare, Principles of Management, Sultan Chand & Sons Publications, New Delhi.
3	P.C.Tripathi& P.N Reddy, Principles of Management. Tata McGraw, Hill, Noida.
4	L.M. Prasad, Principles of Management, S.Chand&Sons Co. Ltd, New Delhi.
5	R.K. Sharma, Shashi K. Gupta, Rahul Sharma, Business Management, Kalyani Publications, New Delhi.
<b>Reference Books</b>	
1	K Sundhar, Principles Of Management, Vijay Nichole Imprints Limited, Chennai
2	Harold Koontz, Heinz Weirich, Essentials of Management, McGraw Hill, Sultan Chand and Sons, New Delhi.
3	Griffin, Management principles and applications, Cengage learning, India.
4	H.Mintzberg - The Nature of Managerial Work, Harper & Row, New York.
5	Eccles, R. G. & Nohria, N. Beyond the Hype: Rediscovering the Essence of Management. Boston The Harvard Business School Press, India.
<b>NOTE: Latest Edition of Textbooks May be Used</b>	
<b>Web Resources</b>	
1	<a href="http://www.universityofcalicut.info/syl1/management">http://www.universityofcalicut.info/syl1/management</a>
2	<a href="https://www.managementstudyguide.com/manpower-planning.htm">https://www.managementstudyguide.com/manpower-planning.htm</a>
3	<a href="https://www.businessmanagementideas.com/notes/management-notes/coordination/coordination/21392">https://www.businessmanagementideas.com/notes/management-notes/coordination/coordination/21392</a>

**MAPPING WITH PROGRAMME OUTCOMES  
AND PROGRAMME SPECIFIC OUTCOMES**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
<b>CO1</b>	3	2	2	3	3	2	2	2	3	2	3
<b>CO2</b>	3	2	3	3	2	2	2	2	3	2	2
<b>CO3</b>	3	2	2	3	2	2	2	1	3	2	2
<b>CO4</b>	3	2	2	3	2	2	2	2	3	2	2
<b>CO5</b>	3	2	3	3	2	2	2	1	3	2	2
<b>TOTAL</b>	15	10	12	15	11	10	10	8	15	10	11
<b>AVERAGE</b>	3	2	2.4	3	2.2	2	2	1.6	3	2	2.2

**3 – Strong, 2- Medium, 1- Low**

**FIRST YEAR – SEMESTER – I****ELECTIVE - I: PROGRAMMING IN C AND LAB**

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
	2		2		3	4	25	75	100
<b>Learning Objectives</b>									
<b>LO1</b>	Describe the core syntax and semantics of C programming language.								
<b>LO2</b>	Discover the need for working with the strings and functions.								
<b>LO3</b>	Illustrate the process of structuring the data using matrix, struct .								
<b>Prerequisites: Should have studied Commerce in XII Std</b>									
Unit	Contents								No. of Hours
I	Introduction to C Language:C Language Introduction-Features of C Language-Benefits of C over other languages-Compilation of C Program-First Program in CPre-processor in CPre-processor directives								
II	Variables, Data Types & Operators:Variables and Keywords in C-Scope rules in C-Data Types in C-Operators & Its Types-Typecasting in C								
III	Control Flow Statements:Decision Making Statements-Switch Statement in C-C Loops & Control Structure Practice problems-Continue Statement , Break Statement  Array & String Handling in C:Arrays in C-Strings in C								
IV	Multidimensional Arrays in C-String functions in C- Practice problems  Functions in C:Function Prototype-Parameter Passing Techniques in C-Storage Classes in C-Recursion Concept -Functions in CPractice problems								

V	Pointers, Structures, and Unions:Pointers in C-Structures- Union - Enumeration (or enum) in C- Pointer vs Array in C – C application programs (Sorting, Matrix manipulations, student’s mark list preparation)	
	<b>Total</b>	
<b>Course Outcomes</b>		
<b>CO1</b>	Apply the concept of Control Structures to solve any given problem.	
<b>CO2</b>	Apply the concept of single and multi-dimensional arrays to solve problems related to searching, sorting and matrix operations.	
<b>CO3</b>	Apply the concept of Strings for writing programs related to character array.	
<b>CO4</b>	Write programs using concept of user defined and recursive functions.	
<b>CO5</b>	Apply concept of structures to write programs.	
<b>Textbooks</b>		
1	E. Balaguruswamy, “Programming in ANSI C”, 8th Edition, 2019, McGraw Hill Education, ISBN:978-93-5316-513-0.	
2	Pradip Dey, Manas Ghosh, “Programming in C”, 2nd Edition, 2018, Oxford University Press, ISBN: 978-01-9949-147-6.	
3	Kernighan B.W and Dennis M. Ritchie, “The C Programming Language”, 2nd Edition, 2015, Pearson Education India, ISBN: 978-93-3254-944-9.	
<b>Reference Books</b>		
1	Yashavant P. Kanetkar, “Let Us C”, 16th Edition, 2019, BPB Publications, ISBN: 978- 93-8728-449-4.	
2	Jacqueline A Jones and Keith Harrow, “Problem Solving with C”, Pearson Education. ISBN: 978-93-325-3800-9.	
3	Dr. Guruprasad Nagraj, “C Programming for Problem Solving”, Himalaya Publishing House. ISBN-978-93-5299-361-1.	
<b>NOTE: Latest Edition of Textbooks May be Used</b>		

Web Resources	
1	<a href="http://elearning.vtu.ac.in/econtent/courses/video/BS/14CPL16.html">http://elearning.vtu.ac.in/econtent/courses/video/BS/14CPL16.html</a>
2	<a href="https://nptel.ac.in/courses/106/105/106105171/">https://nptel.ac.in/courses/106/105/106105171/</a>

### FIRST YEAR – SEMESTER – I

C Programming Lab
<p><b>Learning Objectives:</b> (for teachers: what they have to do in the class/lab/field)</p> <ul style="list-style-type: none"> <li>• Understand problem statements and identify appropriate solutions.</li> <li>• Demonstrate the use of IDE and C Compiler.</li> <li>• Develop programs using C Programming Language.</li> </ul>
<p><b>Course Outcomes:</b> (for students: To know what they are going to learn)</p> <p><b>CO1:</b> Apply the concept of Control Structures to solve any given problem.</p> <p><b>CO2:</b> Apply the concept of single and multi-dimensional arrays to solve problems related to searching, sorting and matrix operations.</p> <p><b>CO3:</b> Apply the concept of Strings for writing programs related to character array.</p> <p><b>CO4:</b> Write programs using concept of user defined and recursive functions.</p> <p><b>CO5:</b> Apply concept of structures to write programs.</p>

List of Programs
<ol style="list-style-type: none"> <li>1. Write a C program to find roots of a Quadratic equation.</li> <li>2. Write a C program to find the total no. of digits and the sum of individual digits of a positive integer.</li> <li>3. Write a C program to generate the Fibonacci sequence of first N numbers.</li> <li>4. Write a C program to sum the series <math>S=1 - x + (x^2/2!) - (x^3/3!) + \dots - (x^n/n!)</math></li> <li>5. Write a C program to arrange the elements of an integer array using Bubble Sort algorithm.</li> <li>6. Write a C program to input two matrices and perform matrix multiplication on them</li> <li>7. Write a C program to check whether the given string is palindrome or not without using Library functions.</li> <li>8. Write a C program to count the number of lines, words and characters in a given text.</li> <li>9. Write a C program to generate Prime numbers in a given range using user defined function.</li> <li>10. Write a C program to find factorial of a given number using recursive function.</li> <li>11. Write a C program to maintain a record of n student details using an array of structures with four fields - Roll number, Name, Marks and Grade. Calculate the Grade according to the following conditions.</li> </ol> <p style="text-align: center;">Marks Grade</p> <p style="text-align: center;">&gt;=80 A</p> <p style="text-align: center;">&gt;=60 B</p>

$\geq 50$  C

$\geq 40$  D

$< 40$  E

Print the details of the student, given the student Roll number as input.

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC –CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
<p><b>Text Books:</b>  E. Balaguruswamy, “Programming in ANSI C”, 8th Edition, 2019, McGraw Hill Education, ISBN:978-93-5316-513-0.</p> <p><b>Reference Books:</b>  1. Pradip Dey, Manas Ghosh, “Programming in C”, 2nd Edition, 2018, Oxford University Press, ISBN: 978-01-9949-147-6.  2. Kernighan B.W and Dennis M. Ritchie, “The C Programming Language”, 2nd Edition, 2015, Pearson Education India, ISBN: 978-93-3254-944-9.  3. Yashavant P. Kanetkar, “Let Us C”, 16th Edition, 2019, BPB Publications, ISBN: 978-93-8728-449-4.  4. Jacqueline A Jones and Keith Harrow, “Problem Solving with C”, Pearson Education. ISBN: 978-93-325-3800-9.  5. Dr. Guruprasad Nagraj, “C Programming for Problem Solving”, Himalaya Publishing House. ISBN-978-93-5299-361-1.</p> <p><b>Weblinks and Video Lectures (e-Resources):</b>  1. <a href="http://elearning.vtu.ac.in/econtent/courses/video/BS/14CPL16.html">http://elearning.vtu.ac.in/econtent/courses/video/BS/14CPL16.html</a>  2. <a href="https://nptel.ac.in/courses/106/105/106105171/">https://nptel.ac.in/courses/106/105/106105171/</a></p>	

**FIRST YEAR – SEMESTER - I****ELECTIVE - I: PYTHON PROGRAMMING AND LAB**

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
	2		2		3	4	25	75	100
<b>Learning Objectives</b>									
<b>LO1</b>	Describe the core syntax and semantics of Python programming language.								
<b>LO2</b>	Discover the need for working with the strings and functions.								
<b>LO3</b>	Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.								
<b>LO4</b>	Understand the usage of packages and Dictionaries								
<b>Prerequisites: Should have studied Commerce in XII Std</b>									
Unit	Contents								No. of Hours
I	Introduction: Computer algorithms-Computer Hardware-Computer Software-Python programming language - Literals - Variables and Identifiers - Operators - Expressions and Data types, Input / output								
II	Control Structures: Boolean Expressions - Selection Control - If Statement- Indentation in Python- Multi-Way Selection -- Iterative Control- While Statement- Infinite loops- Definite vs. Indefinite Loops- Boolean Flag. String, List and Dictionary, Manipulations Building blocks of python programs,Understanding and using ranges.								
III	Functions: Program Routines- Defining Functions- More on Functions: Calling Value-Returning Functions- Calling Non-Value-Returning Functions- Parameter Passing - Keyword Arguments in Python - Default Arguments in Python-Variable Scope. Recursion: Recursive Functions								
IV	Objects and their use: Software Objects - Turtle Graphics – Turtle attributes-Modular Design: Modules - Top-Down Design - Python Modules -								
V	Dictionaries and Sets: Dictionary type in Python - Set Data type. Text Files: Opening, reading and writing text files – Exception Handling								

	<b>Total</b>	
<b>Course Outcomes</b>		
<b>CO1</b>	Develop and execute simple Python programs	
<b>CO2</b>	Write simple Python programs using conditionals and looping for solving problems	
<b>CO3</b>	Decompose a Python program into functions	
<b>CO4</b>	Represent compound data using Python lists, tuples, dictionaries etc.	
<b>Textbooks</b>		
1	Charles Dierbach, “Introduction to Computer Science using Python - A computational Problem-solving Focus”, Wiley India Edition, 2015.	
2	Wesley J. Chun, “Core Python Applications Programming”, 3rd Edition , Pearson Education, 2016	
3	Mark Lutz, “Learning Python Powerful Object Oriented Programming”, O’reilly Media 2018, 5th Edition.	
<b>Reference Books</b>		
1	Timothy A. Budd, “Exploring Python”, Tata MCGraw Hill Education Private Limited 2011, 1 st Edition.	
2	John Zelle, “Python Programming: An Introduction to Computer Science”, Second edition, Course Technology Cengage Learning Publications, 2013, ISBN 978- 1590282410	
3	Michel Dawson, “Python Programming for Absolute Beginners” , Third Edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-1435455009	
<b>NOTE: Latest Edition of Textbooks May be Used</b>		
<b>Web Resources</b>		
1	<a href="https://onlinecourses.swayam2.ac.in/cec22_cs20/preview">https://onlinecourses.swayam2.ac.in/cec22_cs20/preview</a>	



<b>Python Programming Lab</b>	
<b>Learning Objectives:</b> (for teachers: what they have to do in the class/lab/field)	
<ul style="list-style-type: none"> <li>• Acquire programming skills in core Python.</li> <li>• Acquire Object-oriented programming skills in Python.</li> <li>• Develop the skill of designing graphical-user interfaces (GUI) in Python.</li> <li>• Develop the ability to write database applications in Python.</li> <li>• Acquire Python programming skills to move into specific branches</li> </ul>	
<b>Course Outcomes:</b> (for students: To know what they are going to learn)	
<b>CO1:</b> To understand the problem solving approaches	
<b>CO2:</b> To learn the basic programming constructs in Python	
<b>CO3:</b> To practice various computing strategies for Python-based solutions to real world problems	
<b>CO4:</b> To use Python data structures - lists, tuples, dictionaries.	

<b>List of Programs</b>	
1.	Program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2.	Write a Python program to construct the following pattern, using a nested loop <pre style="margin-left: 40px;"> * ** *** **** ***** **** *** ** *</pre>
3.	Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the five subjects are to be input by user. Assign grades according to the following criteria: Grade A: Percentage $\geq 80$ Grade B: Percentage $\geq 70$ and $< 80$ Grade C: Percentage $\geq 60$ and $< 70$ Grade D: Percentage $\geq 40$ and $< 60$ Grade E: Percentage $< 40$
4.	Program, to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
5.	Write a Python script that prints prime numbers less than 20.
6.	Program to find factorial of the given number using recursive function.
7.	Write a Python program to count the number of even and odd numbers from array of N numbers.
8.	Write a Python class to reverse a string word by word.
9.	Read a file content and copy only the contents at odd lines into a new file.
10.	Create a Turtle graphics window with specific size.

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC –CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill
<p><b>Learning Resources:</b></p> <ul style="list-style-type: none"> <li>• <b>Recommended Texts</b> <ol style="list-style-type: none"> <li>1. Charles Dierbach, “Introduction to Computer Science using Python - A computational Problem-solving Focus”, Wiley India Edition, 2015.</li> <li>2. Wesley J. Chun, “Core Python Applications Programming”, 3rd Edition , Pearson Education, 2016</li> </ol> </li> <li>• <b>Reference Books</b> <ol style="list-style-type: none"> <li>1. Mark Lutz, “Learning Python Powerful Object Oriented Programming”, O’reilly Media 2018, 5th Edition.</li> <li>2. Timothy A. Budd, “Exploring Python”, Tata MCGraw Hill Education Private Limited 2011, 1 st Edition.</li> <li>3. John Zelle, “Python Programming: An Introduction to Computer Science”, Second edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-1590282410</li> <li>4. Michel Dawson, “Python Programming for Absolute Beginners” , Third Edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-1435455009</li> </ol> </li> </ul>	

