

**MANGALORE UNIVERSITY**  
**FIRST SEMESTER B.Com**  
**Computer Applications (Vocational) Degree Programme**  
**2019-2020 Onwards**

<b>GROUP-I</b> <b>COURSE-1</b> <b>Credits: 2</b> <b>Theory/Week: 4 Hrs</b>	<b>BCMCAC131</b> <b>Information Technology</b>	<b>48 Hours</b> <b>LA: 20</b> <b>Exam: 80</b>
<b>Topic</b>		<b>Book /Page No</b>
<b>UNIT-I</b>		<b>12 Hours</b>
<p><b>Introduction to Computers:</b> Introduction, Characteristics computers, Evolution computers, Generation of Computers, Classification of computers, the computer system, Application of computers.</p> <p><b>Number system:</b> Introduction, Number system, Conversion between Decimal to Binary and vice versa, Binary coding</p> <p><b>Computer Architecture:</b> Introduction, Central processing unit, main memory unit, interconnection of units, cache, communication between various units of a computer system.</p> <p><b>Primary memory:</b> Introduction, memory representation, memory hierarchy, Random access memory: Types of RAM, Read-only memory, Types of ROM.</p>		<p>Book 1 1 – 7 (1.3.11 &amp; 1.3.12 excluded) ,9 – 22 , 28 - 36</p> <p>83 - 93</p> <p>107 - 126 (4.3.1,4.4.1,4.4.2,4.4.3.1,4.5.2.2,4.6.1 excluded)</p>
<b>UNIT II</b>		<b>12 Hours</b>
<p><b>Secondary Storage:</b> Introduction, classification, magnetic tape, magnetic disk, Optical disk ( Storage organization and the types (CD ,DVD , Blue-ray), Memory stick, Universal serial bus.</p> <p><b>Input devices:</b> Introduction, Types of input devices - keyboard, mouse, joystick, Touch screen, scanner, Optical character recognition, Optical Mark Recognition, Magnetic ink character recognition, Bar code reader</p> <p><b>Output devices:</b> Introduction, Types of output, Classification of output devices- printer, plotter, Monitor, Terminals</p>		<p>131 - 158 (5.4.2, 5.4.3 , 5.4.4.1.1 , 5.4.4.2.1, 5.4.4.3.1 , 5.5.2,5.5.3.1.1, 5.5.3.1.2,5.6 excluded) 164 - 186 (6.2.6.1.1 , 6.2.6.2.1 excluded) 191 - 221 (7.3.4.1 , 7.3.4.2.1 , 7.3.4.2.2 , 7.3.4.5 excluded)</p>
<b>UNIT III</b>		<b>12 Hours</b>
<p><b>Computer Program:</b> Introduction, algorithm, flowchart.</p> <p><b>Computer languages:</b> Introduction, Evolution of programming languages, classification of programming languages, generation of programming languages, Features of a good programming language, selection of a programming language.</p> <p><b>Computer software:</b> Introduction, software definition, relationship between software and hardware, software categories, terminology software</p> <p><b>Network basics:</b> Computer networks, Network topologies, Network devices.</p>		<p>227 - 239 (8.4.3 ,8.4.4 excluded)</p> <p>264-285</p> <p>289-301</p> <p>355-362, 365-368</p>

UNIT IV	12 Hours
<p><b>Internet basics:</b> Introduction, Evolution, Basic internet terms, getting connected to internet, internet Applications.</p> <p><b>Working with Application Software, Productivity software:</b> Word processing software,</p> <p><b>Spreadsheet software (excel):</b></p> <p><b>Presentation software:</b> Introduction, , PowerPoint environment, creating a new presentation, working with different views, using masters, adding animation, adding transition, running slides.</p> <p><b>Database and DBMS:</b> working with database, RDBMS</p>	<p>411-430 (BOOK 1)</p> <p>(BOOK 2) 347-388 (13.3,13.5.5,13.5.6,13.7.2 excluded) 400-429 (14.4.6,14.4.7 excluded)</p> <p>439-461</p> <p>377-379(BOOK 1)</p>
<p><b>Text Books:</b></p> <p>1. ITL Education Solutions Limited, , <b>Introduction to Computer Science</b>, Pearson Education India; 2<sup>nd</sup> editions, 2012.</p> <p>2. ITL Education Solutions Limited, <b>Introduction to Information Technology</b>, Pearson Education India; 2nd edition, 2012. (Unit - IV)</p>	
<p><b>Reference Book:</b></p> <p>1. Peter Norton, <b>Introduction to Computers</b>, 7th edition, Tata McGraw Hill Publication, 2017</p>	

<b>GROUP-I</b> <b>COURSE-2</b> <b>Credits: 2</b> <b>Theory/Week: 4 Hrs</b>	<b>BCMCA132:</b> <b>Problem Solving with C</b>	<b>48 hours</b> <b>I.A: 20</b> <b>Exam: 80</b>
<b>TOPIC</b>		<b>Page No.</b>
<b>UNIT I</b>		<b>12 Hours</b>
<b>Introduction:</b> Overview of C Program, Importance of C-Program, Basic structure of a C-program, Execution Style of C Program.		<b>1-14</b>
<b>Constants, Variables &amp; Data types:</b> Features of C language, Character set, C token, Keywords & identifiers, Constants, Variables, data types, Declaration of variables, assigning values to variables, defining symbolic constants.		<b>22-43</b>
<b>Operators and Expression:</b> Arithmetic, Relational, logical, assignment, increment & decrement, conditional, bit wise & special operators, evaluation of expressions, Precedence of arithmetic operators, type conversions in expressions, operator precedence, built in mathematical functions.		<b>51-72</b>
<b>Managing Input and Output operations:</b> Reading & writing a character, Formatted input and output		<b>81-102</b>
<b>UNIT-II</b>		<b>12 Hours</b>
<b>Decision Making and Branching:</b> Decision making with if statement, simple if statement, the if else statement, nesting of if ... else statements, the else if ladder, the switch statement, the ?: operator, the go to statement.		<b>111- 135</b>
<b>Decision making and looping:</b> The while statement, the do statement, for statement, exit, break, jumps in loops. (jumping out of a loop, skipping a part of a loop)		<b>149-166,170</b>
<b>Arrays:</b> Declaration, initialization & access of one dimensional & two-dimensional arrays.		<b>191-197</b> <b>199-205,208</b>
<b>UNIT-III</b>		<b>12 Hours</b>
<b>Handling of character strings:</b> Declaring & initializing string variables, reading strings from terminal, writing strings to screen, Arithmetic operations on characters, putting strings together, comparison of two strings, string handling functions, table of strings.		<b>234-255</b>
<b>User defined functions:</b> Need for user defined functions, Declaring, defining and calling C functions return values & their types, Categories of functions: With/without arguments, with/without return values, recursion, functions with arrays, the scope, visibility & lifetime of variables.		<b>267-309</b>
<b>UNIT-IV</b>		<b>12 Hours</b>
<b>Structures and union:</b> Structure definition, giving values to members, structure initialization, comparison of structure variables, arrays of structures, arrays within structures, structures within structures, structures & functions, unions, size of structures.		<b>321-331</b> <b>334-340</b> <b>343-344</b>
<b>Pointers:</b> Understanding pointers, accessing the address of a variable, declaring & initializing pointers, accessing a variable through its pointer, pointer expression, pointer increments & scale factor.		<b>357-369</b>
<b>The Preprocessor:</b> Macro substitution, file inclusion, command line arguments.		<b>452-458</b> <b>414-415</b>

<b>File Management in C:</b> Introduction, defining and opening a file, closing a file, I/O operations on files, error handling during I/O operations.	<b>395-405</b>
<b>Text Books:</b> <ol style="list-style-type: none"> <li>1. E. Balagurusamy, <b>Programming in ANSI C</b>, McGraw Hill Education India Private Limited; Sixth edition</li> <li>2. M. T. Somashekara, D. S. Guru, K. S. Manjunatha, <b>Problem Solving with C</b>, PHI Learning Pvt. Ltd.; Second edition, 2018</li> </ol>	
<b>Reference Books:</b> <ol style="list-style-type: none"> <li>1. Hanly, <b>Problem Solving and Program Design in C</b>, Pearson Education India; 7 edition, 2013</li> <li>2. Satish Jain, <b>Programming &amp; Problem Solving Through C Language</b>, BPB Publications, 2012</li> </ol>	

<b>Group I Practical 1</b>	<b>BCMCA133 Office Automation and C Lab</b>	<b>36 Hours</b>
<b>Theory/Week: 3 Hrs Credit: 1</b>		<b>IA: 10 Exam: 40</b>

## Office Automation Lab

### Part A : MS Word exercises

1	Prepare a word document that includes the following features inserting picture, bulleting and numbering, formatting(size, bold, underline, italic, superscript, subscript, color etc), border and shading, paragraph and line alignment.
2	Prepare a word document containing meaningful text features like word art, drop cap ,columns, text box, symbols, equation of any mathematical series, background color, header and footer.
3	Prepare a word document with a table to insert rollno, name, class, marks in three subjects. Find total and average
4	Prepare a interview call letters for five candidates. The letter shall contain information about company, job profile and instructions about the interview. Using mail merge features.

### Part B : MS PowerPoint Exercises

1	Prepare a presentation with at least four slides about your college.
2	Prepare a presentation with at least four slides on Indian Banking System.
3	Prepare a presentation with at least four slides on Water conservation.
4	Prepare a presentation with at least four slides on stock market.

### Part C : MS- Excel Exercises

1	Prepare a student table insert following information such as Roll no, Name, Class and Marks in three subjects. The insert details of ten students. Calculate total marks, percentage, result(pass or fail), and Grade(distinction, first,second,pass class)as per usual rules. Draw a column chart showing the rollno versus average scored.
2	Create a Employee table with the following details employee no, employee name, doj, design and basic. Calculate Da, HRA, Gross pay, Income tax, net pay, provident fund as per the following rules. Da=10% basic Hra=if basic pay is < 2500 Hra=10% basic else 25% basic Provident fund=12% basic Professional tax=rs 100 if gross is<10000 else 200 Netpay=gross- Professional tax -Provident fund Use Pivot table,display the number of employees in each Department and represent it using Pie chart.

	<p>Create a table containing Zones and percentage of commission to be given to a sales man</p> <table border="1"> <thead> <tr> <th>Zone</th> <th>percentage</th> </tr> </thead> <tbody> <tr> <td>South</td> <td>10%</td> </tr> <tr> <td>North</td> <td>12.5%</td> </tr> <tr> <td>East</td> <td>14%</td> </tr> <tr> <td>West</td> <td>13%</td> </tr> </tbody> </table>	Zone	percentage	South	10%	North	12.5%	East	14%	West	13%
Zone	percentage										
South	10%										
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3	<p>Create another table in the same worksheet to store salesman names, zone names, places, names of items sold, rate per unit, quantity sold. Calculate total sales amount for each salesman. For the above table write the formula to compute the commission to be given.</p> <ul style="list-style-type: none"> <li>• Show the records of various zones separately.</li> <li>• Show the records of only East and West zones.</li> <li>• Display the details of the items which are sold more than 50 no.s in South or North zones.</li> </ul>										

### C Programming Lab

1	Write a program to find the maximum of three numbers using nested if statement.																								
2	<p>Write a program to calculate da,hra ,pf , pt , gross &amp; net salary of a employee based on the given condition . Read employee number ,name and basic salary from the keyboard.</p> <table border="1"> <thead> <tr> <th>basic</th> <th>da</th> <th>hra</th> <th>pf</th> <th>pt</th> <th></th> </tr> </thead> <tbody> <tr> <td>&lt;5000</td> <td>20% of basic</td> <td>10% of basic</td> <td>12%of gross</td> <td>nil</td> <td></td> </tr> <tr> <td>&gt;=5000 &amp; &lt;10000</td> <td>23% of basic</td> <td>12% of basic</td> <td>12%of gross</td> <td>rs.120</td> <td></td> </tr> <tr> <td>&gt;=10000</td> <td>25% of basic</td> <td>13% of basic</td> <td>12%of gross</td> <td>rs.150</td> <td></td> </tr> </tbody> </table>	basic	da	hra	pf	pt		<5000	20% of basic	10% of basic	12%of gross	nil		>=5000 & <10000	23% of basic	12% of basic	12%of gross	rs.120		>=10000	25% of basic	13% of basic	12%of gross	rs.150	
basic	da	hra	pf	pt																					
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>=10000	25% of basic	13% of basic	12%of gross	rs.150																					
3	Write a program to read a number and find the sum of the individual digit, reverse and also check whether it is a palindrome or not.																								
4	Write a program to generate first n fibonacci numbers.																								
5	Write a program to read an array containing 'N' numbers and search for a given number using linear search.																								
6	Write a program to find the transpose of a given matrix .																								
7	Write a program to find the ncr of a given no. using factorial function.																								
8	Write a program using structure, read 'n' students rollno, name and marks in '3' subject. Calculate total , percent and grade for 'n' students																								
9	Write a program to create a text file and display its contents.																								

### Scheme of evaluation:

1. Part A (word or power point) -10 marks
2. Part B (Excel) -10 marks
3. Part C( C program) - 10 marks
4. Record – 5marks
5. Viva - 5 mars

Total 40 marks