



**Vidya Vikas Education Trust's**  
**Lords Universal College, Goregaon West, Mumbai-400104**  
**Affiliated to University of Mumbai**

**Bachelors In Science (Information Technology)**

**SEMESTER I**

| <b>Course Code</b> | <b>Course Name</b>                      | <b>COs</b>   |
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| 1011111            | Programming with C                      | Students will be able to:<br>1. Build flowcharts, pseudocode for C programs.<br>2. Use C language syntax and semantics in their programs.<br>3. Implement loops and decision making.<br>4. Use different types of data structures in their programs.<br>5. Write well-structured, readable, and maintainable C code and debug programs if there are any errors.  |
| 1011112            | Database Management Systems             | Students will be able to:<br>1. Define and describe the fundamental elements of relational database management systems.<br>2. Relate the basic concepts of relational data model, entity-relationship model, relational database<br>3. Design ER-models to represent simple database application scenarios.<br>4. Understand the normalization and its role in the database design process<br>5. Transform the ER-model to relational tables, populate relational database<br>And formulate SQL<br>6. Understand basic database storage structures and access techniques: file and page organizations, indexing methods and hashing. |
| 1011113            | Practical I (Programming with C & DBMS) | Students will be able to:<br>1. Demonstrate the concepts of data types, variables and operators in C.<br>2. Implement the concept of control statements and looping in C programs.<br>3. Demonstrate the use of arrays, strings and structures in C<br>4. Implement a modular C program using functions and pointers.<br>5. Demonstrate the use of arrays, strings and structures in C.  |

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|         |                                     | <p>6. Perform various operations such as insert, update, delete and retrieve data from the database using SQL queries.</p> <p>7. Perform alteration in tables and can restore and take backup of the database.</p> <p>8. Perform operations using simple SQL Queries to fetch data and learn various aggregate functions to get a single value.</p> <p>9. Perform SQL Queries using JOIN keyword for joining two or more tables.</p> <p>10. Perform nested queries using in, exists operators.</p> <p>11. Create a new table by joining one or more tables and learn how to hide attributes from the end user.</p> <p>12. Restrict the user from accessing data in the database.</p> <p>13. Create, manipulate the database management system to evaluate the business information problem.</p>   |
| 1171311 | Introduction to Commerce (OE)       | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Develop understanding about Commerce and Business</li> <li>2. Help understand the different forms of Business Organisations</li> <li>3. Help understand the Business Environment</li> <li>4. Understand the recent trends in Commerce</li> </ol>   |
| 1281311 | Marketing Mix I                     | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Learn about the various elements of Marketing Mix.</li> <li>2. Understand the key concepts and components of product and price mix strategies.</li> <li>3. Analyze the factors influencing product development, pricing decisions, and brand positioning.</li> </ol>   |
| 1011411 | Combinational and Sequential Design | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the differences between combinational and sequential circuits, and identify their different applications.</li> <li>2. Define the concept of Boolean algebra and its importance in digital circuit design.</li> <li>3. Explain and apply the principles of K-map simplification and other design techniques.</li> <li>4. Design and construct combinational circuits using Boolean algebra and K-maps.</li> <li>5. Design and implement arithmetic circuits such as adders, subtractors, and multipliers.</li> <li>6. Design and implement data path circuits such as registers, multiplexers, and decoders.</li> <li>7. Implement digital circuits using breadboards, logic probes, and oscilloscopes.</li> <li>8. Troubleshoot and verify the correctness of digital circuits using real-world hardware and measure their performance using various metrics.</li> </ol> |
| 1011412 | Office Tools for Data Management    | <p>Students will be able to:</p>  |

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|         |   | <ol style="list-style-type: none"> <li>1. Explain normalization importance, identify table relationships, and justify database design choices.</li> <li>2. Create well-structured MS Access databases with proper relationships, data types, and normalization.</li> <li>3. Execute advanced queries in MS Access, retrieving specific information based on diverse criteria.</li> <li>4. Design intuitive MS Access forms, incorporating controls for an efficient and user-friendly data entry experience.</li> <li>5. Produce insightful MS Access reports, organizing and presenting data effectively for analysis</li> </ol> |
| 2511511 | Introduction to Communication Skills-I (B.Sc) | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Read effectively by using skimming and scanning techniques to quickly find key information.</li> <li>2. Identify and correct common grammar mistakes to improve their writing and speaking.</li> <li>3. Deliver clear and engaging presentations and have confident conversations in different situations.</li> <li>4. Write professional documents like job application letters, CVs, and Statements of Purpose with advanced skills.</li> </ol>  |
| 2531511 | Indian Knowledge System                       | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand and appreciate the rich Indian Knowledge Tradition</li> <li>2. Understand the contribution of Indians in various fields</li> <li>3. Experience increase subject-awareness and self-esteem</li> <li>4. Develop a comprehensive understanding of how all knowledge is ultimately intertwined</li> </ol>   |
| 2541514 | Fundamental of People's Skills                | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Demonstrate ethical behaviour coupled with integrity.</li> <li>2. Generate new ideas and create a business plan.</li> <li>3. Develop good listening skills, which are vital for demonstrating good team qualities.</li> <li>4. Build sensitivity about social and cultural differences and illustrate good etiquettes.</li> <li>5. Present themselves and their thoughts in front of others more confidence.</li> </ol>  |
| 2521611 | Introduction to Cultural Activities           | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the significance of cultural activities.</li> <li>2. Sensitize towards Indian culture and its preservation</li> <li>3. Apply the knowledge and skills of the cultural activities in their practical life</li> <li>4. Participate in the various cultural activities</li> </ol>  |
| 2521612 | National Service Scheme                       | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand and Comprehend the foundations of the</li> </ol>  |

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|         |  | <p>National Service Program.</p> <ol style="list-style-type: none"> <li>2. Understand the unique camping program.</li> <li>3. Learn about the regular activities of NSS.</li> <li>4. Understand importance of Shramadan.</li> </ol>  |
| 2521615 | Introduction to Sports, Physical Literacy, health & Fitness & Yoga | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Be an entrepreneur (to start their own fitness center, gym, yoga studio etc.) and device appropriate fitness program for different genders and age groups at all level</li> <li>2. Officiate, supervise various sports events and organize sports events.</li> <li>3. Acquire the knowledge of Physical Education, Sports and Yoga and understand the purpose and its development.</li> <li>4. Learns to plan, organize and execute sports events.</li> <li>5. Learn theoretical and practical aspects of the game of his choice to apply at various levels for teaching, learning and coaching purposes efficiently.</li> <li>6. Acquires the knowledge of opted games, sports and yoga and also learns the technical and tactical experience of it.</li> <li>7. Learn to apply knowledge of Physical fitness and exercise management to lead a better quality life.</li> <li>8. Understand and learn different dimensions of active lifestyle.</li> <li>9. Learn the knowledge of nutrition and diet.</li> <li>10. Assess physical fitness in a scientific way.</li> <li>11. Continue professional courses and research in Physical Education, sports and yoga.</li> <li>12. Understand theory and practical aspects of physical literacy. These aspects include the role of motivation and confidence, how to focus on positive experience, new styles of teaching, inclusive session planning, and review the progress in physical activities.</li> </ol> |
| 2521616 | Extension Work   | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1.Explain the concepts of lifelong learning and the role of extension education in community development.</li> <li>2.Recognize the importance of social responsibility and active citizenship.</li> <li>3.Develop communication, leadership, and teamwork skills through practical projects.</li> <li>4.Gain hands-on experience in social work, research, and project management.</li> <li>5.Identify and analyse social issues such as education, health, gender equality, and environmental sustainability.</li> <li>6.Implement projects that address real-world community problems and promote social change.</li> </ol>  |

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|  |  | <p>7. Conduct surveys and research to understand community needs and propose solutions.</p> <p>8. Interpret data and present findings effectively in reports and presentations.</p> <p>9. Learn the basics of entrepreneurship, financial literacy, and self-employment.</p> <p>10. Develop innovative ideas for social enterprises and small businesses.</p> <p>11. Foster empathy, teamwork, and respect for diverse cultures and perspectives.</p> <p>12. Plan, execute, and evaluate extension activities such as awareness campaigns, surveys, and training programs.</p> <p>13. Collaborate with NGOs, schools, and local communities for impactful outreach..</p> |
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### **Bachelors In Science (Information Technology)**

#### **SEMESTER II**

| <b>Course Code</b> | <b>Course Name</b> | <b>COs</b>  |
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| 1012111            | OOPs with C++      | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the key concept of OOP and their application in software development.</li> <li>2. Design and implement classes and objects to model real-world entities.</li> <li>3. Apply the concepts of polymorphism, virtual functions, inheritance and exception handling in the program.</li> <li>4. Apply operator overloading, runtime polymorphism, generic Programming.</li> <li>5. Implement file handling concepts in program</li> </ol> |
| 1012112            | Web Designing      | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Use the HTML programming language</li> <li>2. Execute web pages designed using HTML</li> <li>3. Describe the concepts of the World Wide Web, and the requirements of effective web design.</li> <li>4. List various tags in html and use these to create web page</li> </ol>   |

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|         |                                       | 5. Gain necessary skills for designing and developing web applications.  |
| 1012113 | Practical - II (OOPS + Web Designing) | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Utilize C++ characteristics in software design and development.</li> <li>2. Explain object-oriented techniques and explain how C++ supports them.</li> <li>3. Employ C++ to demonstrate practical skill developing object-oriented solutions.</li> <li>4. Examine a problem statements and design and develop object-oriented software using good coding practices and procedures.</li> <li>5. Design static web pages using Hyper Text Markup Language (HTML).</li> <li>6. Use their learned skills, knowledge and abilities to develop web sites</li> <li>7. Collect information from the user with HTML Forms.</li> <li>8. Enhance the look of web pages by implementing audio and video.</li> </ol> |
| 1082211 | Elementary statistics II              | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. To choose an appropriate correlation method to data and interpret correlation between two variables using scatter diagram, Karl Pearson's Product moment correlation coefficient, Spearman's Rank correlation coefficient.</li> <li>2. To obtain a regression coefficient using least square method of estimation and apply method to real life problem.</li> <li>3. Understand Nature of time series data and solve real life problems using freehand curve method, semi average method, moving average method, least square method, etc</li> </ol>  |
| 1172311 | Principles & Practices of Management  | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the concept of management.</li> <li>2. Manage functions.</li> </ol>  |

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| 1282311 | Marketing Mix - II            | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand thoroughly place and promotion as marketing mix variables so as to solve marketing problems.</li> <li>2. Apply and analyze place and promotion marketing mix skills in marketing manager.</li> <li>3. Evaluate and create marketing strategy with place and promotion as an important marketing</li> </ol>   |
| 1012411 | Assembly language Programming | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the architecture of the 8085 microprocessor and its associated instruction set.</li> <li>2. Identify the different types of registers and their functions in the microprocessor.</li> <li>3. Describe the memory organization and addressing modes of the 8085 microprocessor.</li> <li>4. Write assembly language programs for the 8085 microprocessor using various instructions and addressing modes.</li> <li>5. Debug and troubleshoot assembly language programs for the 8085 microprocessor using simulators and debuggers.</li> <li>6. Implement conditional branching and looping constructs in assembly language programs.</li> <li>7. Use 8085 assembly language programming tools, such as editors, assemblers, and emulators for developing and testing programs.</li> <li>8. Simulate microprocessor operations using emulators and debuggers.</li> <li>9. Connect input/output devices, such as LEDs, switches, and displays, to the 8085 microprocessor.</li> </ol> |
| 1012413 | PL/SQL                        | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Use PL/SQL variables, data types, control and conditional statements.</li> <li>2. Apply sequences and cursors in PL/SQL.</li> <li>3. Work with Collection and Composite Data Types.</li> <li>4. Develop PL/SQL structures like functions, procedures and triggers for database applications.</li> <li>5. Handle errors and exceptions in PL/SQL programs.</li> <li>6. Develop PL/SQL packages.</li> </ol>   |

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| 2512517 | Hindi Bhasha - Kaushal Ke Adhar                        | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. विद्यार्थियों को लेखन, वाचन कौशल के ज्ञान प्राप्त के साथ मौलिक अभिव्यक्ति में बदलाव आएगा।</li> <li>2. विद्यार्थियों का लेखन, वाचन कौशल द्वारा मानसिक विकास होगा, पठन-शैली का विकास होगा।</li> <li>3. विद्यार्थियों को लेखन, भाषण कौशल से भाषिक-शक्ति, शैलियों का सिंविान होगा हवशेषज्ञता आएगी। ।</li> <li>4. विद्यार्थियों को लेखन, वाचन, श्रवण, भाषण कौशल की विशेषताओं और उपयोगिता का ज्ञान प्राप्त होगा।</li> </ol> |
| 2542520 | Foundation of Behavioral Skills (Basic-Level)          | <ol style="list-style-type: none"> <li>1. Define and Identify different life skills required in personal and professional life</li> <li>2. Awareness of the self and apply well-defined techniques to cope with emotions and stress.</li> <li>3. Explain the basic mechanics of effective communication and demonstrate these through presentations and take part in group discussions</li> <li>4. Use appropriate thinking and problem-solving techniques to solve new problems</li> </ol>      |
| 2522617 | National Service Scheme                                | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand and Comprehend the foundations of the National Service Program.</li> <li>2. Understand the unique camping program.</li> <li>3. Learn about the regular activities of NSS.</li> <li>4. Understand importance of Shramadan.</li> </ol>   |
| 2522614 | Foundation and Exploration of Performing and Fine Arts | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Identify and trace the historical evolution of Indian performing and fine arts.</li> <li>2. Analyze the transition from traditional to modern art forms in performing arts.</li> <li>3. Identify and describe a range of career paths in the fine and performing arts.</li> </ol>   |
| 2522620 | Sports, Physical literacy, Health & Fitness & Yog      | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Participate in various games, sports and physical activities and they will also learn the technical and tactical experience of it.</li> </ol>   |



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|         |                | <ol style="list-style-type: none"> <li>2. Understand the importance and benefits of participation in any fitness activity or sports.</li> <li>3. Own choice based activities that will inculcate healthy habits in the students</li> <li>4. Organize, plan activities, and will develop administrative qualities through these events</li> <li>5. Acquire the knowledge of Physical Education, Sports and Yoga and understand the purpose and its development.</li> <li>6. Learn to plan, organize and execute sports events.</li> <li>7. Learn theoretical and practical aspects of the game of his choice to apply at various levels for teaching, learning and coaching purposes efficiently.</li> <li>8. Acquires the knowledge of opted games, sports and yoga and also learns the technical and tactical experience of it.</li> <li>9. Learn to apply knowledge of Physical fitness and exercise management to lead a better quality life.</li> <li>10. Understand and learn different dimensions of an active lifestyle.</li> </ol>                               |
| 2522621 | Extension Work | <p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1.Explain the concepts of lifelong learning and the role of extension education in community development.</li> <li>2.Recognize the importance of social responsibility and active citizenship.</li> <li>3.Develop communication, leadership, and teamwork skills through practical projects.</li> <li>4.Gain hands-on experience in social work, research, and project management.</li> <li>5.Identify and analyse social issues such as education, health, gender equality, and environmental sustainability.</li> <li>6.Implement projects that address real-world community problems and promote social change.</li> <li>7.Conduct surveys and research to understand community needs and propose solutions.</li> <li>8. Interpret data and present findings effectively in reports and presentations.</li> <li>9.Learn the basics of entrepreneurship, financial literacy, and self-employment.</li> <li>10.Develop innovative ideas for social enterprises and small businesses.</li> </ol> |

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|  |  | <p>11.Foster empathy, teamwork, and respect for diverse cultures and perspectives.</p> <p>12.Plan, execute, and evaluate extension activities such as awareness campaigns, surveys, and training programs.</p> <p>13.Collaborate with NGOs, schools, and local communities for impactful outreach..</p> |
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