



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

**Bachelors In Science (Computer Science)**

**Semester-I**

<b>Course Code</b>	<b>Course Name</b>	<b>COs</b>
USCS101 & USCSP101	Digital System & Architecture- Theory & Digital System & Architecture- Practical	<i>Students will be able to</i>  1. To learn about how computer systems work and underlying principles.  2. To understand the basics of digital electronics needed for computers.  3. To understand the basics of instruction set architecture for reduced and complex instruction sets To understand the basics of processor structure and operation.  4. To understand how data is transferred between the processor and I/O devices.
USCS102 & USCSP102	Introduction to programming with Python- Theory & Introduction to programming with Python- Practical	<i>Students will be able to</i>  1. To store, manipulate and access data in Python.  2. To implement basic Input / Output operations in Python.  3. To define the structure and components of a Python program.  4. To learn how to write loops and decision statements in Python.  5. To learn how to write functions and pass arguments in Python.



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		6. To create and use Compound data types in Python.
USCS103 & USCSP103	LINUX operating system– Theory & LINUX operating system– Practical	<i>Students will be able to</i> <ol style="list-style-type: none"><li>1. Work with Linux file system structure, Linux Environment.</li><li>2. Handle shell commands for scripting, with features of regular expressions, redirections.</li><li>3. Implement file security permissions.</li><li>4. Work with vi, sed and awk editors for shell scripting using various control structures.</li><li>5. Install softwares like compilers and develop programs in C and Python programming languages on Linux Platform.</li></ol> .
USCS104 & USCSP104	Open Source Technologies- Theory & Open Source Technologies- Practical	<i>Students will be able to</i> <ol style="list-style-type: none"><li>1. Differentiate between Open Source and Proprietary software and Licensing.</li><li>2. Recognize the applications, benefits and features of Open-Source Technologies.</li><li>3. Gain knowledge to start, manage open-source projects.</li></ol>
USCS105 & USCSP105	Discrete Mathematics- Theory & Discrete Mathematics– Practical	<i>Students will be able to</i> <ol style="list-style-type: none"><li>1. Define mathematical structures (relations, functions, graphs) and use them to model real life situations.</li><li>2. Understand, construct and solve simple mathematical problems.</li></ol>



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		<ol style="list-style-type: none"><li>3. Solve puzzles based on counting principles.</li><li>4. Provide basic knowledge about models of automata theory and the corresponding formal languages.</li><li>5. Develop an attitude to solve problems based on graphs and trees, which are widely used in software.</li></ol>
USCS106 & USCSP106	Descriptive Statistics– Theory & Descriptive Statistics– Practical	<p><i>Students will be able to</i></p> <ol style="list-style-type: none"><li>1. Organize, manage and present data.</li><li>2. Analyze Statistical data using measures of central tendency and dispersion.</li><li>3. Analyze Statistical data using basic techniques of R.</li><li>4. Study the relationship between variables using techniques of correlation and regression.</li></ol>
USCS107	Soft Skills	<p><i>Students will be able to</i></p> <ol style="list-style-type: none"><li>1. To understand the importance and types of soft skills.</li><li>2. To develop skills for Academic and Professional Presentations.</li><li>3. To understand Leadership Qualities and Ethics.</li><li>4. To understand the importance of stress management in their academic &amp; professional life.</li></ol>

**Semester II**

Course Code	Course Name	COs
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USCS201 & USCSP201	Design & Analysis of algorithms- Theory & Design & Analysis of algorithms- Practical	<i>Students will be able to</i>  1. To understand and evaluate efficiency of the programs that they write based on performance of the algorithms used.  2. To appreciate the use of various data structures as per need.  3. To select, decide and apply appropriate design principles by understanding the requirements of any real life problems.
USCS202 & USCSP202	Advance Python Programming - Theory & Advance Python Programming - Practical	<i>Students will be able to</i>  1. To implement OOP concepts in Python including Inheritance and Polymorphism.  2. To work with files and perform operations on it using Python.  3. To implement regular expression and concept of threads for developing efficient program.  4. To implement exception handling in Python applications for error handling. Knowledge of working with databases, designing GUI in Python and implementing networking in Python.
USCS203 & USCSP203	Introduction to OOP using C++ – Theory &	<i>Students will be able to</i>



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	Introduction to OOP using C++– Practical	<ol style="list-style-type: none"><li>1. Work with numeric, character and textual data and arrays.</li><li>2. Understand the importance of OOP approach over procedural language.</li><li>3. Understand how to model classes and relationships using UML.</li><li>4. Apply the concepts of OOPS like encapsulation, inheritance and polymorphism.</li><li>5. Handle basic file operations.</li></ol>
USCS204 & USCSP204	Database System- Theory & Database System- Practical	<p><i>Students will be able to</i></p> <ol style="list-style-type: none"><li>1. To appreciate the importance of database design.</li><li>2. Analyze database requirements and determine the entities involved in the system and their relationship to one another.</li><li>3. Write simple queries to MySQL related to String, Maths and Date Functions. Create tables and insert/update/delete data, and query data in a relational DBMS using MySQL commands.</li><li>4. Understand the normalization and its role in the database design process.</li><li>5. Handle data permissions.</li><li>6. Create indexes and understand the role of Indexes in optimization search.</li></ol>
USCS205 & USCSP205	Calculus- Theory & Calculus– Practical	<p><i>Students will be able to</i></p>



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		<ol style="list-style-type: none"><li>1. Develop mathematical skills and enhance the thinking power of learners.</li><li>2. Understand mathematical concepts like limit, continuity, derivative, integration of functions, partial derivatives.</li><li>3. Appreciate real world applications which use the learned concepts.</li><li>4. Skill to formulate a problem through Mathematical modelling and simulation.</li></ol>
USCS206 & USCSP206	Statistical Methods– Theory & Statistical Methods– Practical	<p><i>Students will be able to</i></p> <ol style="list-style-type: none"><li>1. Calculate probability, conditional probability and independence.</li><li>2. Apply the given discrete and continuous distributions whenever necessary.</li><li>3. Define null hypothesis, alternative hypothesis, level of significance, test statistic and p value. Perform Test of Hypothesis as well as calculate confidence interval for a population parameter for single sample and two sample cases.</li><li>4. Apply non-parametric tests whenever necessary.</li><li>5. Conduct and interpret one-way and two-way ANOVA</li></ol>
USCS207	E-Commerce & Digital Marketing	<p><i>Students will be able to</i></p>



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		<ol style="list-style-type: none"><li>1. Understand the core concepts of E-Commerce.</li><li>2. Understand the various online payment techniques</li><li>3. Understand the core concepts of digital marketing and the role of digital marketing in business.</li><li>4. Apply digital marketing strategies to increase sales and growth of business</li><li>5. Apply digital marketing through different channels and platforms</li><li>6. Understand the significance of Web Analytics and Google Analytics and apply the same.</li></ol>
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