



“Education for Knowledge, Science, and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

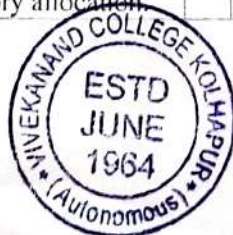
**Vivekanand College, Kolhapur  
(Autonomous)**



KOLHAPUR (AUTONOMOUS)

**B Sc Computer Science Entire (B.C.S.)  
Content with Focus on Cross-cutting Issues**

Sr. No.	Name of the Course	Course Code	Year of Introduction	Professional Ethics	Gender	Human Values	Environment and Sustainability	Sustainable Development Goals	NEP – 2020 (citizenship values, life-skills ;)
1	Introduction to computers And Programming in C-I	CC- CS-1303 A	2018-19	<b>Programming Skills :</b> 1. problem solving: Algorithms, Flowcharts 2. basic principles of programming: Data types, operators 3. Skills for writing programs using 'C': Conditional statements and looping statements. 4. Basic elements of a communication system, Data Transmission modes, Data Transmission media, Types of networking Network Topologies, Definition and declaration, Operations on pointer, Pointer initialization, Pointer And Array, Pointer of pointer. Dynamic memory allocation.		Information Technology IT Assets and its managements, ITAct	1. fundamental concepts of computers 2. Inputs devices, 3. output Devices and operating systems.		



				<p>5. Definition, declaration, prototype of function, Local and global variable, User defined functions, Storage classes, Recursion, Pointer and function, Call by value and Call by reference.</p> <p>6. Understand Database Management System, Data Models, Concept of RDBMS, RDBMS Terminologies, DBA &amp; Responsibilities of DBA, Relational Model, Definition and declaration, Array of structures, Passing structure to function, Pointer to structure, Nested structure, self referential structure, Size of and type def, Definition of Union and declaration, Difference between structure and union.</p> <p>7. Oracle Data types, Classification of SQL commands, Data Constraints, Concept of File, Text and binary files, Opening and closing files, File opening mode</p>				
2	Introduction to computers And Programming in C-II	CC- CS- 1303 B	2018-19	<p><b>Programming Skills :</b></p> <p>1. Define the basics in web design using HTML tags.</p> <p>2. Develop the concept of web publishing</p>				



3	Introduction to RDBMS using MySQL and Object Oriented Programming Using C++	CC- CS- 1304C	2019- 2020	<p>1. understand the features of data models and normalization: DFD and ERD, 1NF,2NF, 3NF, BCNF</p> <p>2. Perform object oriented programming to develop solutions to problems</p> <p>3.demonstrating usage of control structures,4.modularity 5. I/O. and other standard language constructs.</p>				
4	Introduction to Data Structure Using C++ and Cyber Security Essentials	CC- CS- 1304D	2019- 2020	<p>1.concepts such as Abstract Data Types, 2.Linear and Non Linear Data structures. 3.data structures to represent data items in real world problems. 4.analyze the time and space complexities of algorithms. 5.design programs using a variety of data structures such as array,6. stacks,7.queues, 8.linked list analyze and implement various kinds of searching and sorting techniques.</p>	<p>1.working of computer network.</p> <p>2.importance of cyber security.</p> <p>3.different security threats.</p> <p>4.Concept of information security management . different access controls methods. wireless network security.5. cyber security laws and importance of security audit.</p>			



5	Environmental studies	2019-2020		<p>1: Need for public awareness. Concept of sustainability. Sustainable development and its goals with Indian context.</p> <p>2: Concept of an ecosystem. Structure and function of an ecosystem. Producers, consumers and decomposers. Energy flow in the ecosystem. Ecological succession</p> <p>3: Energy resources: Growing energy needs, renewable and non-renewable energy resources, use of alternate energy sources. Solar energy, Biomass energy, Nuclear energy, f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification, Consumerism, ecological foot prints, carbon foot prints, carbon credits.</p>	<p>4: Human population growth, impact on environment. Human Health and welfare. Environmental ethics: Role of Indian religious traditions and culture in conservation of the environment. 5: Environmental movements- Chipko Movement, Appiko Movement, Silent Valley. 6: Resettlement and rehabilitation of people; its problems and concerns. Water conservation, rain water harvesting, 7: watershed management, water conservation by Dr. Rajendra Singh, Anna Hazare etc. Disaster management: floods, earthquake, cyclone, tsunami and landslides. Wasteland reclamation. 8: Environmental communication and public awareness, case studies. 9: Environmental Protection Act. Air (Prevention and Control of Pollution) Act. 10: Water (Prevention and control of Pollution) Act Wildlife</p>
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6	Core Java and Operating system	DSC-1305E	2020-2021	<b>Programming Skills:</b> <b>1:</b> structure of java program, jvm, type conversion. <b>2.</b> implements programs in java using control statements, <b>3.</b> method overloading, <b>4.</b> constructors, array of objects. keywords this and static.				
7	Data communication and Software Engineering with UML	DSC-1306E	2020-2021	<b>1.</b> Networking skills and Project planning the fundamental concept and components of Data Communication system. To explain Concept of network, advantages and disadvantages, categories and architectures of network. To explain types of transmission media and types of transmission modes. Understand multiplexing and switching techniques. Explain network devices, protocols and elements of protocol and standards. <b>2.</b> fact finding techniques, which serve as a basis for requirements analysis and gathering. understand the importance of SRS in s/w development. <b>3.</b> use of Unified modeling language. <b>4.</b> drawing UML diagram. <b>5.</b> selecting suitable UML diagram for our software system. <b>6.</b> basics of software testing			<b>1.</b> basics of software and software engineering. <b>2.</b> what is system's development life cycle. <b>3.</b> Different traditional and latest process models- Waterfall, prototyping, Spiral, Agile development.	



8	C# Programming and E-Commerce	DSC-1307E	2020-2021	<p>1. Programming Skills and Digital marketing.</p> <p>2. Event driven &amp; sequence driven programming, to explain .net framework architecture, understand assembly, namespace, garbage collector &amp; JIT Compilers.</p> <p>3. data types, operators, conditional, unconditional &amp; looping statements. To understand how to write function &amp; procedures Understand class, object, &amp; OOP concepts.</p> <p>4. different controls in window application, events &amp; properties of controls, the process of Electronic commerce and Business strategy involved in it and security concerns while doing online businesses.</p> <p>5. e-commerce businesses, and propose future directions or innovations for specific businesses</p>				<p>1. Ecommerce in India, Trends in Ecommerce in Various Sectors: Retail, Banking, Tourism, Government, Education, Issues Relating to Privacy and Security in E-Business, E-Commerce Laws, Latest developments and Strategies in Digital Marketing</p>
9	PHP programming	SEC-III	2020-2021	<p>1. Website Designing, 2. develop online information system using the open source PHP.</p>				



10	Communication Skills-II	AECC-C	2020-2021	<p>1.Resume writing.</p> <p>2.Report Writing.</p> <p>3.Interview Skills.</p>					<p>1: English communication skills</p> <p>2: employability skills</p> <p>3:To prepare students for competitive examinations</p> <p>4: specific professional skills such as media writing</p> <p>5: learn manners and etiquettes required at work places</p> <p>6: reading comprehension skills</p> <p>7: English literature.</p> <p>8: human values and ethics in order to enable them to become good citizens of the country</p>
11	Advanced Java and Data warehousing and mining	DSE-1305F	2020-2021	<p>Programming skills:</p> <p>1: full set of UI Widgets using Swings, dynamic web pages using Servlets and JSP</p> <p>2: Data warehousing architecture and Evaluate OLAP and use data to solve problems, make decisions, also characterize and determine data mining functionalities.</p> <p>3: Concept of data mining, Process of knowledge discovery in databases</p>					



				(KDD), Data Preprocessing and Data Quality , concept of Classification				
12	Computer Networks and C# and introduction to ASP.Net	DSE-1306F	2020-2021	1: Flow control protocols-Sliding window protocol, One bit sliding window protocol, protocol using go back N, Protocol using selective repeat, explain design issues, concept of routing, routing algorithms and Congestion Control algorithms. transport layer service primitives, TCP, UDP protocol,				
13	Linux OS and Artificial intelligence and Expert system	DSE-1307F	2020-2021	1: linux basics- shell, kernel, general purpose utilities, directory handling commands, file handling commands, implement basic filters, understand environment variables				
14	Android Programming	SEC-III	2020-2021	1: Event driven & sequence driven programming, to explain .net framework architecture. understand assembly. namespace, garbage collector & JIT Compilers.2: Understand data types, operators, conditional, unconditional & looping statements. how to write function & procedures 3: Class, object, & OOP concepts 4: different controls in window application. events & properties of controls.				



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15	Introduction to computers	CC- CS- 1303 A1	2021- 22	1: Characteristics & features of Computers, Components of Computers, Organization of Computer, Generation of Computers			1: Input Devices 2: Output devices 3: Types of Memory (Primary And Secondary) Secondary Storage Devices		
16	Programming in C-I	CC- CS- 1303 A2	2021- 22	1: Program and programming, Programming languages, 2: Algorithm: Definition, Examples, Characteristics of an algorithm, Notation of Algorithm, 3: Pseudo code conventions, Flowcharts- Definition, Symbol, features.					




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17	Introduction to RDBMS using MySQL and Object Oriented Programming Using C++	CC-CS-1303 C1	2022-23	<p>1: Data, Database, Database Management System, Concept of RDBMS, RDBMS Terminologies : relation, attribute, domain, tuple, entities</p> <p>2: Structure of C++ program, Input and output Streams, Memory management operators</p>				1: Responsibilities of DBA
18	Introduction to SQLite	SEC-I	2022-23	<p>1: Create, open, drop database files</p> <p>2: SQLite DataTypes</p> <p>3: Create, Alter, drop table with example</p>				<p>1: Downloading and installing SQLite</p> <p>2: Features of SQLite</p> <p>3: Appropriate uses of SQLite: When to use, why to use.</p> <p>4: Limitations of SQLite</p>



19	Introduction to Data Structure Using C++ and Cyber Security Essentials	CC-GS13 03 D	2022-23	Definitions: Data types, Data Object, Data structure, Abstract Data Type (concept), Data Structure classification, Algorithm Efficiency: Complexity, Big O notation, Array: Definition, Types of array (one dimensional and multidimensional), sparse matrices.	Cyber Security Laws: Security Laws(IT Act India), Intellectual Property Rights(Copyright, Plagarism), SecurityAudit.	Access Controls: Overview of Authentication and Authorization,
20	Python Programming	SEC-II	2022-23	1: working with open, read, write, append modes of file		Applications of Python, Why Python? Installation of python, First program in Python, Comments and Docstrings in Python



  
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