

Rayat Shikshan Sanstha's  
**KARMAVEER BHAURAO PATIL COLLEGE, VASHI**  
(Autonomous)

**Department of Information Technology**

Name of the Faculty: Information Technology

Name of the Program: Bachelors of Information Technology

**Program Outcomes (POs)**

PO-1	<b>Disciplinary Knowledge and Skills</b>	Acquire the comprehensive and in-depth knowledge of various subjects in sciences such as Physics, Chemistry, Mathematics, Microbiology, Bio-analytical Science, Computer Science, Data Science, Information Technology and disciplinary skills and ability to apply these skills in the field of science, technology, and its allied branches
PO-2	<b>Communication and Presentation Skills</b>	Develop various communication skills including presentation to express ideas evidently to achieve common goals of the organization.
PO-3	<b>Creativity and Critical Judgment</b>	Facilitate solutions to current issues based on investigations, evaluation and justification using evidence-based approach.
PO-4	<b>Analytical Reasoning and Problem Solving</b>	Build critical and analytical attitude in handling the problems and situations.
PO-5	<b>Sense of Inquiry</b>	Curiously raise relevant questions based on highly developed ideas, scientific theories and its applications including research.
PO-6	<b>Use of Digital Technologies</b>	Use various digital technologies to explore information/data for business, scientific research, and related purposes.
PO-7	<b>Research Skills</b>	Construct, collect, investigate, evaluate, and interpret information/data relevant to science and technology to adapt, evolve and shape the future.
PO-8	<b>Application of Knowledge</b>	Develop a scientific outlook to create consciousness against the social myths and blind faith.
PO-9	<b>Moral and Ethical Reasoning</b>	Imbibe ethical, moral, and social values to develop virtues such as justice, generosity, and charity as beneficial to individuals and society at large.
PO-10	<b>Leadership and Teamwork</b>	Work cooperatively and lead proactively to achieve the goals of the organization by implementing the plans and projects in various field-based situations related to science, technology, and society at large.
PO-11	<b>Environment and Sustainability</b>	Create social awareness about the environment and develop sustainability for betterment of the future.
PO-12	<b>Lifelong Learning</b>	Realize that pursuit of knowledge is a lifelong activity and in combination with determined efforts, positive attitude and other qualities to lead a successful life.

  
Program Coordinator

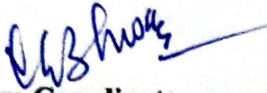
  
BOS Chairman

  
I/C PRINCIPAL  
KARMAVEER BHAURAO PATIL COLLEGE  
VASHI, NAVI MUMBAI-400 703.

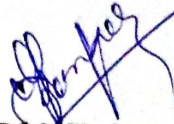


**Rayat Shikshan Sansta's**  
**KARMAVEER BHAURAO PATIL COLLEGE, VASHI**  
**NAVI MUMBAI**  
**(Autonomous)**  
**Department Of Information Technology**  
**Program Specific Outcomes(PSO)**

<b>PSO-1</b>	To acquaint students with the fundamental of computer hardware and software in information technology
<b>PSO-2</b>	To develop analytical skills and critical thinking through application of theory knowledge into practical course
<b>PSO-3</b>	To construct and apply knowledge of programming, and appreciate the relationship between several programming languages and other disciplines
<b>PSO-4</b>	To enable students to understand IT and its industrial and social context



**Program Coordinator**



**BOS Chairman**



**I/C PRINCIPAL**

**KARMAVEER BHAURAO PATIL COLLEGE**  
**VASHI, NAVI MUMBAI-400 703.**



Title Of Specific Program: B. Sc. Information Technology		
Course Outcome(CO)		
Course Code	Course Title	Course Outcome
<b>F.Y. SEM I</b>		
UGIT 101	Discrete Mathematics	CO1: To understand overview of theory of discrete objects, starting with relations and partially ordered sets.[2]* CO2: To Organize recurrence relations, generating function and operations on them[6]* CO3: To Explain of graphs and trees, which are widely used in software[3]* CO4: To Implement knowledge about models of automata theory and the corresponding formal languages[4]* CO5: To Create set tree, graph, relation and function with respect to IT.[6]*
UGIT 102	C++ with OOPS	CO1: To write, compile and debug programs in C language.[6]* CO2: To Implement different data types in a computer program.[5]* CO3: To Design programs involving decision structures, loops and functions.[4]* CO4: To Explain the difference between call by value and call by reference[3]* CO5: To Understand the dynamics of memory by the use of pointers.[2]*
UGIT 103	English Communication Skill	CO1: To Understand the role of communication in personal and professional success.[2]* CO2: To Develop awareness of appropriate communication strategies.[6]* CO3: To Implement ethically use, document and integrate sources.[4]* CO4: To Explain effectively orally and in writing.[3]* CO5: To Write Business Messages and Documents[6]*
UGIT 104A	Green Computing	CO1: To Infer green computing practices to minimize negative impacts on the environment.[2]* CO2: To Illustrate the skill in energy saving practices in their use of hardware.[3]* CO3: To Evaluate technology tools that can reduce paper waste and carbon footprint by the [stakeholders].[4]* CO4: To Understand the ways to minimize equipment disposal requirements[2]* CO5: To Teach Going Paperless[3]*
UGIT 104B	Basic Computer Skills and Effective Internet Use	CO1: To Understand basic understanding of computer hardware and software.[2]* CO2: To Apply the skills that are the focus of this program to business scenarios.[3]* CO3: To Trace receive and send emails[2]* CO4: To Revise the use a web browser to navigate the Internet.[6]* CO5: To Simulate Elements of Word Processing[6]*



**Course Outcome (CO)**

Course Code	Course Title	Course Outcomes
<b>FY SEM II</b>		
UGIT201	Numerical and Statistical Methods	<b>CO1:</b> Solve Numerical analysis which has enormous application in the field of Science and some fields of Engineering.[3]* <b>CO2:</b> Explain finite precision computation.[3]* <b>CO 3:</b> Identify numerical solutions of nonlinear equations in a single variable.[2]* <b>CO 4:</b> Solve numerical integration and differentiation, numerical solution of ordinary differential equations.[3]* <b>CO 5:</b> Solve calculation and interpretation of errors in numerical method.[3]*
HUGIT202	Operating System	<b>CO1:</b> Describing operating system, its structures and functioning.[2]* <b>CO2:</b> Justify develop and master understanding of algorithms used by operating systems for various purposes.[5]* <b>CO3:</b> Understand process, thread and relation between them.[3]* <b>CO4:</b> Understand scheduling and solve problem based on it[3]* 5. Understand algorithms based on memory management[3]*
UGIT203	Life And Employability Skills	<b>CO1:</b> Explain various aspects of soft skills and learn ways to develop personality.[3]* <b>CO2:</b> Understand the importance and type of communication in personal and professional environment.[3]* <b>CO3:</b> Justify insight into much needed technical and non-technical qualities in career planning.[5]* <b>CO4:</b> Recognize Leadership, team building, decision making and stress management.[2]* <b>CO5:</b> Identify Safety and Hazard can be achieved in and by hardware, software, network communication and data center operations.[2]*



UGIT204A	Web Programming and Designing	<p><b>CO1:</b> Know the basic concepts of Web.[1]*</p> <p><b>CO2:</b> Know the basic concepts of HTML5.[1]*</p> <p><b>CO3:</b> Recognise the features of HTML5.[2]*</p> <p><b>CO4:</b> Describe the attribute of Table.[4]*</p> <p><b>CO5:</b> Distinguish between Cellspacing and Cellpadding.[4]*</p>
UGIT204B	E commerce	<p><b>CO1:</b> Solve the fundamental e-commerce concepts.[6]*</p> <p><b>CO2:</b> Operate process of online transaction in real life.[3]*</p> <p><b>CO3:</b> Prepare practical knowledge of online marketing, advertisement.[6]*</p>

**Course Outcomes:**

Course Code	Course Name	Course Outcomes
<b>Semester III</b>		
UGIT301	Applied Mathematics	<p><b>CO1:</b> Remember a given integral using the most efficient method[1]*</p> <p><b>CO2:</b> Use integrals to formulate and solve application problems in science and engineering[3]*</p> <p><b>CO3:</b> Construct and plot parametric and polar curves[6]*</p> <p><b>CO4:</b> Identify different types of series and determine whether a a particular series converges[2]*</p> <p><b>CO5:</b> Find the interval of convergence of a power series[5]*</p>
UGIT302	Computer Graphics and Animation	<p><b>CO1:</b> State the basic concepts used in computer graphics.[1]*</p> <p><b>CO2:</b> Summarize the various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping.[2]*</p> <p><b>CO3:</b> Understand and implement 2 dimensional transformations.[2]*</p> <p>plain 3 dimensional</p>



		transformations.[4]* CO5: Observe and implement curve.[2]*
UGIT303	Database Management System	CO1: State the database transactions and data models.[1]* CO2: Understand and implement ER Diagram and Unified Modeling Language.[2]* CO3: Explain the integrity rules.[3]* CO4: Summarize and implement Normalization.[2]* CO5: Distinguish between Relational Algebra and Calculus Relational Algebra.[4]*
UGIT3P4A  UGIT3P4B	Linux System Administration Practical  OR  Core Java Practical	CO1: Perform command line and system administration tasks.[2]* CO2: Explain configuration and management of storage, network and managing user accounts.[3]* CO3: Understand and implement security in the server, setting up cryptographic services and file server.[2]* CO4: State and configure DNS, DHCP and set up the Mail Server.[1]* CO5: Examine bash shell scripting and configuring Red Hat Enterprise Linux.[3]*
UGIT305A	Web Technology	CO1: Recognize valid, well-formed, scalable, and meaningful pages using emerging technologies.[1]* CO2: Summarize the various platforms, devices, display resolutions, viewports, and browsers that render websites.[2]* CO3: Develop and implement server-side scripting language programs.[6]* CO4: Demonstrate website along with database.[6]* CO5: State the different events.[1]*



UGIT305B	Research Methodology	<p><b>CO1:</b> Understand the importance of research and various methods that researcher used to investigate problems.[2]*</p> <p><b>CO2:</b> Apply modern Analytical tools for Business Management Decisions.[3]*</p> <p><b>CO3:</b> Analyze the research work to derive applicable strategies.[4]*</p> <p><b>CO4:</b> Evaluate the Challenges in collecting the data collection and analysis.[5]*</p> <p><b>CO5:</b> Interpret the data to make meaningful decisions.[4]*</p>
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Course Code	Course Title	Course Outcome
<b>BSc IT Sem - IV</b>		
UGIT401	Computer Oriented statistical techniques	<p>CO1. Understand mean, median mode[2]*</p> <p>CO 2. Apply mean, median mode[3]*</p> <p>CO 3. To understand R platform and data types and objects[2]*</p> <p>CO 4. Describe various Graphics Devices which is very useful in Graphics.[2]*</p> <p>CO 5. Understand The Geometric Mean(G.M.) and Harmonic Mean(H.M.)[2]*</p>
UGIT402	Python Programming	<p>CO 1. Recognize how to declare string in python.[1]*</p> <p>CO 2. Compute connection to MySQL database from Python.[3]*</p> <p>CO 3. Compute different methods to manage directories in python.[3]*</p> <p>CO 4. Illustrate conditional statements.[3]</p> <p>CO 5. Determine type conversion function.[5]*</p>
UGIT403	Data Structure	<p>CO 1. Distinguish between primitive, non-primitive and abstract data type and revise the concept of Array.[1]*</p> <p>CO 2. Diagrammatically explain different operations perform on graph.[3]*</p> <p>CO 3. Applying stack concept or finding arithmetic expression, matching parenthesis and in fix, prefix, postfix expression[3]*</p> <p>CO 4. Perform merge sort, linear search and binary</p>



		search.[3]* CO 5. Compare the different method of sorting and searching.[5]*
UGIT4P4A	Introduction to Embedded Systems Practical	CO 1. Interfacing LCD display with AT89S52[3]* CO 2. Configure timer control registers[3]* CO 3. Build/Generate traffic signal. [3]*  CO 4. Interfacing of seven-segment LED display and generate counting from 0 to 99 with fixed time delay. [3]* CO 5. Implement Elevator control. [3]*
UGIT4P4B	Enterprise Java Practical	CO 1. Implement Simple Servlet applications.[3]* CO 2. Implement the Servlet IO and File applications. [3]* CO 3. Implement EJB applications with different types of Beans.[3]* CO 4. Implement JPA applications with ORM and Hibernate.[3]* CO 5. Implement Hibernate applications.[3]*
UGIT405A	Supply Chain Management	CO 1. State different Role and Functionality in Supply Chain, Participants in transportation[1]* CO 2. Understand Traditional Inventory Management and Inventory model[2]* CO 3. Distinguish between Traditional and Modern Approach of SCM[4]* CO 4. Explain Concepts, Benchmarking the logistics process[3]* CO 5. Prepare Handling of the entire production flow of a good or service to maximize quality, delivery, customer experience and profitability[5]*
UGIT405B	Statistical tools in Research	CO 1. State different type of sampling[1]* CO 2. Summarized different distribution (Binomial and Poisson, Exponential, Beta & Normal Distribution)[5]* CO 3. Distinguish between Sampling and Non-Sampling Errors[4]* CO 4. Understand Research Design, Measurement and Scaling Techniques[2]* CO 5. Perform testing of hypothesis using paired t-test.[3]*





Course Outcomes(CO)		
Course Code	Course Name	Course Outcomes
<b>Semester V</b>		
UGIT501	Software Quality Assurance	<b>CO1.</b> Understand software testing and quality assurance as a fundamental component of software life cycle [2*] <b>CO2.</b> Evaluating the cost aspects of testing [5*] <b>CO3.</b> Study of different Test Methodologies [3*] <b>CO4.</b> Analysing an effective inspection through Software Verification and Validation to evaluate the results to make process improvements.[4*] <b>CO5.</b> Study of different Roles and Responsibilities while executing V – model[3*]
UGIT502	Computer Networks	<b>CO1.</b> Study the different aspects of networks. [1]* <b>CO2.</b> Compare the characteristics of analog and digital signals on the given parameter .[4*] <b>CO3.</b> Classify various wired transmission media for data communication networks [2*] <b>CO4.</b> Understanding the transition from Ipv4 to Ipv6 [2*] <b>CO5.</b> Compare Standard Client/Server Protocol [ 4*] <b>CO6.</b> Implement Use of Wireshark to scan.[6]*
UGIT503	Advanced Web Programming	<b>CO1.</b> Understand .Net Framework.[2]* <b>CO2.</b> Tell why the Exception handling is necessary.[5]* <b>CO3.</b> Perform reading writing of XML file.[3]* <b>CO4.</b> Predict advantages and disadvantages of CSS.[5]* <b>CO5.</b> Generate the Web form to Database connectivity.[6]*
UGIT504	Internet of Things	<b>CO1.</b> Justify Magic as Metaphor [5*] <b>CO2.</b> Compare IPv4 and IPv6 [4*] <b>CO3.</b> Describe the journey of PCB [2*] <b>CO4.</b> Assess the “Acker’s Bell” [5*] <b>CO5.</b> List libraries available [2*]
UGIT505	Artificial Intelligence	<b>CO1.</b> Define Artificial Intelligence.[2]* <b>CO2.</b> Illustrate problem solving examples & their solutions. [3]* <b>CO3.</b> Discuss different types of games. [2]* <b>CO4.</b> Differentiate between propositional & First Order. [4]* <b>CO5.</b> Interpret planning graphs & other classical planning approaches. [3]*
UGIT506	Enterprise Java	<b>CO1.</b> Compare and contrast between Server and Containers. [4]* <b>CO2.</b> Understand the Sessions ,Lifecycle Of Http Session. [2]* <b>CO3.</b> Compare and contrast between Advantages of using JSP and Disadvantages of using JSP. [4]* <b>CO4.</b> Implement the simple JSP application. [3]* <b>CO5.</b> Explain working with session Beans. [2]*



UGIT507	Next Generation Technologies	<b>CO1.</b> Compare ACID vs BASE [5*] <b>CO2.</b> Write MongoDB queries [3*] <b>CO3.</b> Discuss fields used for sharding [2*] <b>CO4.</b> Describe Berkeley Analytics Data Stack and its components [2*] <b>CO5.</b> List features of jQuery [1*]
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Course Outcomes:

Course Code	Course Name	Course Outcomes
Semester VI		
UGIT602	Security in Computing	<b>CO1.</b> Understanding the the Security in computing concept[1*] <b>CO2.</b> Implement the AAA Authentication.[3*] <b>CO3.</b> Configure, Apply and Verify an Extended Numbered ACL.[6*] <b>CO4.</b> Configure IP ACLs to Mitigate Attacks and IPV6 ACLs[6*] <b>CO5.</b> Understand and implement a Zone-Based Policy Firewall[1*]
UGIT603	Business Intelligence	<b>CO1.</b> Understanding and Develop methods and procedures for Analysis that can help for large systems and that can be used to Making a decision within a time.[1*] <b>CO2.</b> Summarized decision making capabilities when they assess the BI Architecture.[4*] <b>CO3.</b> Analyze business intelligence capabilities by adapting the appropriate technology and software solutions.[5*] <b>CO4.</b> Evaluating the Evolution of information systems[6*] <b>CO5.</b> Understand methods and tools of BI. [1*]
UGIT604	Principles of Geographic Information Systems	<b>CO1.</b> Describe what geography and GIS are?[1*] <b>CO2.</b> Understand the importance of scale, projection, and coordinate systems in GIS[1*] <b>CO3.</b> Write vector and raster data structures and the appropriate use of each of these data structures[3*] <b>CO4.</b> Explain the basics of data capture, storage, analysis, and output in a GIS[2*] <b>CO5.</b> Summarize uses of GIS in business, government, and resource.[4*]
UGIT605	Enterprise Networking	<b>CO1.</b> Analyze state-of-the-art real-world enterprise-wide networks.[5*] <b>CO2.</b> Explain the Internet Connectivity Module.[2*] <b>CO3.</b> Applying Address Assignment and Name Resolution.[6*] <b>CO4.</b> Modifying Default Spanning Tree Behavior.[4*] <b>CO5.</b> manage, configure, troubleshoot, and maintain typical



		enterprise-wide computer networks;[6*]
UGIT606	IT Service Management	<p>CO1. Understand what is the need of IT Service Management[1*]</p> <p>CO2. What kind of strategies and principles flows in IT industries[2*]</p> <p>CO3. Explain problem, challenges, risks factors of IT industries[4*]</p> <p>CO4. Summarized process of service design.[4*]</p> <p>CO5. Discuss on Service Asses Configuration Management, Service and Deployment Management.[4*]</p>
UGIT607	Cyber Laws	<p>CO1. Understand plan and prepare for all stages of an investigation.[1*]</p> <p>CO2. Summarized initial response.[4*]</p> <p>CO3. Explain management interaction.[4*]</p> <p>CO4. Write the report them in a way that would be acceptable in the court of law[3*]</p> <p>CO5. Discuss on Service Asses Configuration Management, Service and Deployment Management.[4*]</p>

**Note :** Number in bracket() indicates cognitive levels of revised Bloom's Taxonomy as follows:(1):Remembering,(2):Understanding,(3):Applying,(4):Analyzing,(5):Evaluating,(6):Creating

  
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