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# RAJMATA JIJAU SCIENCE & COMMERCE NIGHT COLLEGE OF B.Sc. (IT) Code - 981

(Affiliated to University of Mumbai)

Plot No.62/64, Diva Gaon, Sector-09, Airoli, Navi Mumbai - 400708.

Bachelor of Science ( Information Technology) (B.Sc(I.T)

**Course Outcome**

| Sr.No | Subject | Course Outcome |
|---|---|---|
| 1 | **Fundamentals Database Management System** (FYIT SEM I) | 1. Explain the features of database management systems and Relational database.<br>2. Design conceptual models of a database using ER modeling for real life applications and also construct queries in Relational Algebra.<br>3. Create and populate a RDBMS for a real life application, with constraints and keys, using SQL.<br>4. Retrieve any type of information from a data base by formulating complex queries in SQL.<br>5. Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database. |
| *1* | ***Operating Systems*** *(FYIT SEM I)* | *1. Describe the important computer system resources and the role of operating system in their management policies and algorithms.*<br>*2. Understand the process management policies and scheduling of processes by CPU*<br>*3. Evaluate the requirement for process synchronization and coordination handled by operating system*<br>*4. Describe and analyze the memory management and its allocation policies.*<br>*5. Identify use and evaluate the storage management policies with respect to different storage management technologies.*<br>*6. Identify the need to create the special purpose operating system.* |
| 2 | **Web Application Development / Web Programming** (FYIT SEM II) | 1. Implement interactive web page(s) using HTML, CSS and JavaScript.<br>2. Design a responsive web site using HTML5 and CSS3.<br>3. Demonstrate Rich Internet Application.<br>4. Build Dynamic web site using server side PHP Programming and Database connectivity.<br>5. Describe and differentiate different Web Extensions andWeb Services. |

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| 3 | **Principles of Programming in C/ Imperative Programming**<br><br>FYIT SEM I) | After studying this course the students would gain enough knowledge<br><br>1. Write simple programs using conditional and iterative statements.<br><br>2. Classify the array.<br><br>3. Developing mini applications. |
| 4 | **OOPS / Object Oriented Programming With C++**<br><br>(FYIT SEM II) | Students will be able to:<br><br>1. Understand the basic concepts of Object Orientation necessary to efficiently and accurately use in technology.Create real applications using Object Orientation Concepts. |
| 5 | **Digital Logic & Applications / Digital Electronics**<br><br>(FYIT SEM I) | After studying this course the students would gain enough knowledge<br>1. Have a thorough understanding of the fundamental concepts and techniques used in digital electronics.<br>2. To understand and examine the structure of various number systems and its application in digital design.<br>3. The ability to understand, analyze and design various combinational and sequential circuits. |
| 6 | **TCS / CS**<br><br>(FYIT SEM I) | The study of this paper can enhance the following abilities of students :<br>1. Effective Communication in the professional fields<br>2. Appropriate use of different constructions<br>3. Better understanding of syntax<br>4. Presentation Skills<br>5. Team work |

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| 7 | **Discrete**<br><br>**Mathematics**<br><br>(FYIT SEM I) | Students will be able to:<br><br>1. Write an argument using logical notation and determine if the argument is or is not valid.<br>2. Demonstrate the ability to write and evaluate a proof or outline the basic structure of and give examples of each proof technique described.<br>3. Understand the basic principles of sets and operations in sets.<br>4. Prove basic set equalities.<br>5. Apply counting principles to determine probabilities.<br>6. Demonstrate an understanding of relations and functions and be able to determine their properties.<br>7. Determine when a function is 1-1 and "onto". |

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| | | 8. Demonstrate different traversal methods for trees and graphs. |
| 8 | **Numerical and Statistical Methods**<br><br>(FYIT SEM II) | The student will develop a working knowledge of several numerical methods and their analytical basis.<br><br>1. Ability to flowchart logic for problem solving<br>2. Solve root finding problems using several methods<br>3. Solve systems of linear algebraic equations using Gauss elimination<br>4. Perform regression and interpolation on datasets<br>5. Numerically differentiate and integrate |
| 9<br><br>10 | **Microprocessor Architecture**<br><br>(FYIT SEM II) | 1. To introduce students with the architecture and operation of typical microprocessors.<br>2. To familiarize the students with the programming and interfacing of microprocessors .<br>3. To provide strong foundation for designing real world applications using microprocessors and microcontrollers. |

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| **Green computing**<br><br>**/ Green IT**<br><br>(FYIT SEM II) | 1. Describe awareness among stakeholders and promote green agenda and green initiatives in their working environments leading to green movement<br>2. Identify IT Infrastructure Management and Green Data Centre Metrics for software development<br>3. Recognize Objectives of Green Network Protocols for Data communication.<br>4. Use Green IT Strategies and metrics for ICT development<br>5. Illustrate various green IT services and its roles.<br>6. Use new career opportunities available in IT profession, audits and others with special skills such as energy efficiency, ethical IT assets disposal, carbon footprint estimation, reporting and development of green |

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| | | products, applications and services. |
| 11 | PYTHON PROGRAMMING<br><br>SYIT SEM III) | 1. Create a GUI application using the Python programming language.<br>2. Problem solving and programming capability.<br>3. Install and run the Python interpreter<br>4. Student will able to Understand the concepts of file I/O |
| 12 | COMPUTER GRAPHICS & ANIMATION<br><br>SYIT SEM IV) | Students will able to:<br>1. To list the basic Virtual Reality of the components of a graphics system and become familiar with building approach of graphics system components and algorithms related with them.<br>2. 2.D dimensional computer graphics<br>3. 3- D dimensional computer graphics.<br>4. Provide an understanding of how to scan convert the basic geometrical primitives, how totransform the shapes to fit them as per the picture definition<br>5. Provide an understanding of mapping from a world coordinates to device coordinates,clipping, and projections.<br>6. To implement various algorithms to scan, convert the basic geometrical primitives,transformations, Area filling, clipping.<br>7. . To describe the importance of viewing and projections.<br>8. Apply critical thinking skills and provide artistic decisions to computer graphics related problems<br>9. Demonstrate proficiency of specific theoretical, practical and critical skills within computergraphics and animation |

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| 13 | EMBEDDED SYSTEMS<br><br>SYIT SEM IV) | Students will able to:<br>1. Embedded system concepts and architecture of embedded systems<br>2. Describe the architecture of 8051 microcontroller and write embedded program for 8051microcontroller.<br>3. Design the interfacing for 8051 microcontroller.<br>4. Understand the concepts of ARM architecture.<br>5. Demonstrate the open source RTOS and solve the design issues for the same.<br>6. Select elements for an embedded systems tool. |
| 14 | **COMPUTER NETWORKS**<br><br>SYIT SEM IV) | 1. Describe the functions of each layer in OSI and TCP/IP model.<br>2. Explain the functions of Application layer and Presentation layer paradigms andProtocols.<br>3. Describe the Session layer design issues and Transport layer services.<br>4. Classify the routing protocols and analyze how to assign the IP addresses for the givennetwork.<br>5. Describe the functions of data link layer and explain the protocols.<br>6. Explain the types of transmission media with real time applications |
| 15 | **Applied Mathematics**<br><br>(SYIT SEM III) | The student after undergoing this course will be able to<br>1. Solve problems in domain related to Linear Algebra usingMatrices.<br>2. Able to solve qualitative problems based on vector analysis and<br>3. matrix analysis such as linear independence and dependence ofVectors, rank etc.<br>4. Students learn about the how to solve mathematical problem withLaplace Transform and error functions and their applications.<br>5. Able to solve problems using Complex Numbers.<br>6. Come to know the applications of double and triple integration infinding the area and volume<br>7. Come to know about the ordinary differential equations<br>8. Clarification of numerical solutions of ordinary and partialDifferential equations.<br>9. Come to know about the Differentiation Under Integral Sign<br>10. Come to know about the Beta, Gamma Function |

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| 16 | **Computer Oriented Statistical Techniques**<br><br>(SYIT SEM IV) | After learning the contents of this paper the student must be able to<br>1) Apply the concepts of probability and distributions<br>2) Correlate the material of one unit to the material in other units<br>3) Compute solution of algebraic and transcendental equation bynumerical methods<br>4) Apply method of interpolation and extrapolation for prediction<br>5) Recognize elements and variable in statistics and summarize Qualitative and quantitative data.<br>6) Calculate mean, median and mode for individual series<br>7) Outline properties of correlation and compute Karl-Pearson'scoefficient of correlation. |
| 17 | **Core Java**<br><br>(SYIT SEM IV) | After studying this course the students would gain enough knowledge<br>1. Design applications using abstract class and interface.<br>2. Implement file handling concepts.<br>3. Handle dynamic exceptions using exception handling.<br>4. Design windows based applications using AWT. |
| 18 | SOFTWARE ENGINEERING<br><br>(SYIT SEM IV) | 1. Define various software application domains and rememberdifferent process model used in software development.<br>2. Explain needs for software specifications also they can classifydifferent types of software requirements and their gathering techniques.<br>3. Convert the requirements model into the design model and demonstrate use of software and user interface design principles.<br>4. Distinguish among SCM and SQA and can classify different testing strategies and tactics and compare them.<br>5. Justify role of SDLC in Software Project Development and they can evaluate importance of Software Engineering in PLC.<br>6. Generate project schedule and can construct, design and develop network diagram for different type of Projects. They can also organize different activities of project as per Risk impact factor. |

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| 19 | Database<br><br>Managem<br><br>Ent<br><br>System<br><br>(SYIT SEM III) | 6. Explain the features of database management systems and Relational database.<br>7. Design conceptual models of a database using ER modeling for reallife applications and also construct queries in Relational Algebra.<br>8. Create and populate a RDBMS for a real life application, withconstraints and keys, using SQL.<br>9. Retrieve any type of information from a data base by formulating complex queries in SQL.<br>10. Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database. |

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| 20 | **Data Structures**<br><br>(SYIT SEM III) | Students will be able to:<br><br>1. Apply the concepts of data structures using any programming such as C, Python or C++.<br>2.Write code to implements different operations of data structures.3.Write code to implement different searching and sorting types.<br>4.Implement the execution of mathematical polynomial expression, hashing techniques anddifferent types of expressions such as infix, prefix, postfix.<br>5.Implement shortest path selection using graph techniques like BFS and DFS. |
| 21 | SOFTWARE QUALITY ASSURANCE<br><br>(TYIT SEM VI) | 1. To understand the nature of software development and software life cycle process models, agile software development, SCRUM and other agile practices.<br>2. To Explain methods of capturing, specifying, visualizing and analyzing software requirements.<br>3. To understand concepts of software cost estimation<br>4. To know basics of testing and understanding concept of software quality assurance and software configuration management process.<br>5. To understand need of quality management and project management life cycle.<br>6. To understand managing teams n working in teams. |
| 22 | Internet Of Things(TYIT SEM VI) | 1. Apply the concepts of IOT.<br>2. Identify the different technology.<br>3. Apply IOT to different applications.<br>4. Analysis and evaluate protocols used in IOT.<br>5. Analysis and evaluate the data received through sensors in IOT. |
| 23 | Advanced<br><br>Web<br><br>Programming<br><br>g TYIT<br><br>(SEM V) | 1. To understand the concept of .Net.<br>2. To make student families to visual studio environment and there controls.<br>3. It help in learning new programming language like C#,AJAX,XML.<br>4. It also help students to develop there project and learn haw to make real time projects. |

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| 24 | Linux System Administration<br><br>(TYIT SEM V) | 1. Identify the basic Linux general purpose commands.<br>2. Apply and change the ownership and file permissions using advance Linux commands.<br>3. Use the awk, grep, perl scripts.<br>4. Implement shell scripts and sed.<br>5. Apply basic of administrative task.<br>6. Apply networking Linux commands. |

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| 25 | Business Intelligence<br><br>(TYIT SEM VI) | 1. Identify sources of Data for mining and perform data Exploration<br>2. Organize and prepare the data needed for data mining algorithms in terms of attributes and class inputs, training, validating, and testing files.<br>3. Implement the appropriate data mining methods like classification, clustering or association mining on large datasets using open source tools like WEKA.<br>4. Implement various data mining algorithms from scratch using languages like Python/ Java etc.<br>5. Evaluate and compare performance of some available BI packages<br>6. Apply BI to solve practical problems Analyze the problem domain, use the data collected inenterprise apply the appropriate data mining technique, interpret and visualize the results and provide decision support. |

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| 26 | SOFTWARE PROJECT MANAGEMENT<br><br>(TYIT SEM V) | 1. Define various software application domains and remember different process model used in software development.<br>2. Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques.<br>3. Convert the requirements model into the design model and demonstrate use of software and user interface design principles.<br>4. Distinguish among SCM and SQA and can classifydifferent testing strategies and tactics and compare them. 5.Justify role of SDLC in Software Project Development and they can evaluate importance of Software . |
| 27 | **Enterprise Java**<br><br>(TYIT SEM V) | Upon successful completion of this course the student will have reliably demonstrated the ability to:<br>1) Apply Enterprise architecture concepts, MVC architecture and advanced database techniques inweb applications.<br>2) Use different web technologies in Web programming.<br>3)Develop rich interactive environments for the Web.<br>4) Create sites that utilize data validation techniques and secure code.<br>5) Build sites that use session management.<br>6) Build a framework using Hibernate. |
| 28 | **Information Technology Service Management**<br><br>(TYIT SEM VI) | Upon successful completion of this course the student will have reliably demonstrated the ability to:<br><br>1) How IT Service Management works.<br><br>2) Design and operate many applications related to IT Service Management. |
| 29 | Security in computing<br><br>(TYIT SEM VI) | After successful completion of course the students should be able to<br>1. Formulate information security governance, and related legal and regulatory issues.<br>2. Devices how threats to an organization are discovered, analyzed, and dealt with.<br>3. Evaluate network security threats and countermeasures.<br>4. Construct network security designs using available secure solutions (such as PGP, SSL, IPSec, etc)<br>5. Acquire the knowledge of advanced security issues and technologies (such as DDoS attack detection and |

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| 30 | Geographic Information Systems (TYIT SEM VI) | After completing this course the student will have acquired the ability on the following.<br><br>1. Understand the concepts of Photogrametry and compute the heights of objects<br>2. Understand the principles of aerial and satellite remote sensing, Able to comprehend the energy interactions with earth surface features, spectral properties of water bodies .<br>3.Understand the basic concept of GIS and its applications, know different types of data representation in GIS<br>4.Understand and Develop models for GIS spatial Analysis and will be able to know what the questions that GIS can answer are<br>5. Apply knowledge of GIS software and able to work with GIS software in various application fields<br>6. Illustrate spatial and non spatial data features in GIS and understand the map projections and coordinates systems<br>7. Apply knowledge of GIS and understand the integration of Remote Sensing and GIS |