Vision:

Commitment to create professionals by providing education that serves as a valuable resource to industry and ensures satisfaction of needs of society ethically

Mission:

- To provide high quality professional curricula to serve industry needs in step with the current trends
- To inculcate temperament to use modern tools and technologies to enhance the skills of computer application professionals
- To create an intellectually stimulating environment for creativity, innovation, entrepreneurship and research culture
- To promote healthy practices such as team building, community service and extension activities leading to holistic development of budding professionals

Programme Educational Objectives (PEO's):

PEO1: To build core competency through analysis, design, and development of software

PEO2: To develop the ability among learners to demonstrate professional skills, ethical practices and soft skills leading to entrepreneurship development, enhancement of employability and prepare for life-long learning

PEO3: To nurture the aptitude among learners to contribute significantly in the technological advancement through research and development to provide the effective solutions for IT related problems of the society and industry

Program Outcomes:

PO1: Computational Knowledge: Apply knowledge of mathematics, computer science, computing specializations appropriate for real world applications

PO2: Problem analysis: Identify, formulate, analyze and solve complex computing problems using relevant domain disciplines

PO3: Design / Development of Solutions: Design and evaluate solutions for complex computing problems that meet specified needs with appropriate considerations for real world problems

PO4: Conduct Investigation of complex Computing Problems: Find solutions of complex computing problems using design of experiments, analysis and interpretation of data

PO5: Modern Tool Usage: Apply appropriate techniques and modern computing tools for development of complex computing activities

PO6: Professional Ethics: Apply professional ethics, cyber regulations and norms of professional computing practices

PO7: Life-long Learning: Recognize the need to have ability to engage in independent and life-long learning in the broadest context of technological change

PO8: Project management and Finance: Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments

PO9: Communication Efficiency: Communicate effectively with the computing community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions

PO10: Societal and Environmental Concern: Assess societal, environmental, health, safety, legal and cultural issues within local and global contexts, and the consequent responsibilities relevant to the professional computing practices

PO11: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary environments

PO12: Innovation and Entrepreneurship: Identify a timely opportunity and use innovation, to pursue opportunity, as a successful Entrepreneur /professional

Program Specific Outcomes : NA

PSO 1:

PSO 2:

PSO 3:

Course Outcomes:

FYMCA – Sem I (2022 Pattern)

Subject 1: Discrete Mathematics (MCA221001)

At the end of this course, Students will be able to

CO221001.1. Understand discrete objects, relationship among them and Solve real world problems logically by using set and induction approaches
CO221001.2. Demonstrate an understanding of relations and functions
CO221001.3. Apply counting principles to determine probabilities and logical reasoning to solve problems
CO221001.4. Analyze problems in computer science using tree and graph

Subject 2: Data Structures and Algorithms(MCA221002)

At the end of this course, Students will be able to

CO221002.1 Demonstrate use of sequential data structures - array and linked list.
CO221002.2 Implement stack and queue data structures for real application
CO221002.3 Use nonlinear data structure for solving problems of various domain
CO221002.4 Compare various searching and sorting techniques
CO221002.5 Analyze algorithms using time and space complexity

Subject 3: Data Communication and Network(MCA221003)

At the end of this course, Students will be able to

CO221003.1 Illustrate fundamental concepts of Computer Networks, architectures, protocols and technologies
CO221003.2 Summarize the working and functions of data link layer
CO221003.3 Compare the working of different routing protocols and mechanisms
CO221003.4 Solve client-server applications using sockets
CO221003.5 Describe role of application layer with its protocols

Subject 4: Web Technology(MCA221004)

At the end of this course, Students will be able to

CO221004.1. Explain the fundamental programming skills required to design Web applications
CO221004.2. Apply JavaScript concepts
CO221004.3. Differentiate between XML, HTML and JSON documents
CO221004.4. Demonstrate the concepts of server-side web applications using PHP
CO221004.5. Implement web application using angular

Subject 5: Software Engineering(MCA221005)

At the end of this course, Students will be able to

CO221005.1 Identify process model for software development
CO221005.2 Describe software requirements for a given application
CO221005.3 Design software system
CO221005.4 Apply software metrics to evaluate the software system performance
CO221005.5 Apply software configuration management

Subject 6: Python Programming(MCA221006)

At the end of this course, Students will be able to

CO221006.1 Illustrate basic programming constructs in python
CO221006.2 Apply user defined functions and file handling methods in python
CO221006.3 Apply data visualization and plotting techniques
CO221006.4 Evaluate the data using appropriate python libraries

Subject 7: Business Communication (MCA221007)

At the end of this course, Students will be able to

CO221007.1: Express effectively through verbal/oral communication

CO221007.2: Apply leadership and interpersonal skills**.**

CO221007.3: Apply ethics and etiquettes in IT Profession

CO221007.4: Write precise reports and technical documents

FYMCA – Sem II

Subject 1: Object Oriented Programming (MCA222001)

At the end of this course, Students will be able to
CO222001.1. Illustrate the fundamental programming structures
CO222001.2. Explain multithreading and exception handling
CO222001.3. Demonstrate inheritance and polymorphism
CO222001.4 Design Applet and java application using AWT
CO222001.5 Implement class, interface and package

Subject 2: Database Management System(MCA222002)

At the end of this course, Students will be able to

CO222002.1. Design ER-models for database application
CO222002.2. Explain Transaction Management concepts in real-time application
CO222002.3. Apply normalization to the relational database design
CO222002.4. Implement database queries using SQL / PLSQL database languages
CO222002.5. Analyze various database architectures and technologies

Subject 3: Elective I : Artificial Intelligence(MCA222003A)

At the end of this course, Students will be able to

CO222003A.1. Describe fundamental concepts of artificial intelligence
CO222003A.2. Apply basic principles to find solutions that require problem solving
CO222003A.3. Use the core concepts of knowledge for decision making methods
CO222003A.4. Use AI techniques for Logical Planning and explain learning methods
CO222003A.5. Analyze the structures and algorithms of a techniques related to language processing and explain expert systems

Subject 4: Elective I: Information Retrieval(MCA222003B)
At the end of this course, Students will be able to

CO222003B.1. Describe the concept of Information retrieval
CO222003B.2. Define the standard methods for Web indexing and retrieval
CO222003B.3. Execute retrieval process of text and multimedia data
CO222003B.4. Demonstrate performance of any information retrieval system.

Subject 5: Elective I: Augmented Reality and Virtual Reality(MCA222003C)
At the end of this course, Students will be able to

CO222003C.1. Explain fundamentals of computer vision, computer graphics and human-computer interaction techniques related to VR/AR
CO222003C.2. Describe geometric modeling and virtual environment
CO222003C.3. Demonstrate virtual reality system using various types of hardware and software
CO222003C.4. Implement Virtual/Augmented Reality applications
CO222003C.5. Differentiate VR/AR technology

Subject 6: Advanced Web Technology (MCA222004)
At the end of this course, Students will be able to
CO222004.1. Explain the feature of ECMAScript6
CO222004.2. Identify the runtime environment that provides the foundation for creating and running an application
CO222004.3. Write a single page, multi-page, or hybrid web applications using Express.js
CO222004.4. Use ReactJs in real life scenario
CO222004.5. Design modern database platforms that are reliable, practical, and scalable for application developers

Subject 7: UI/UX Design (MCA222005)
At the end of this course, Students will be able to
CO222005.1. Describe user interface and user experience fundamentals
CO222005.3. Recognize the quality of service and data visualization
CO222005.4. Examine the data-driven UI designs and user experiences
CO222005.5. Test the usability of a design through usability evaluations

Subject 8: Audit Course : Entrepreneurship Management (MCA222006A)
At the end of this course, Students will be able to
CO222006A.1. Define concepts of entrepreneurship development
CO222006A.2. Explain entrepreneurial venture
CO222006A.3. Identify entrepreneurial opportunity
CO222006A.4.Recognize roles of government in entrepreneurship development
CO222006A.5. Implement project management concepts

Subject 9: Audit Course : Foreign Language (MCA222006B)
At the end of this course, Students will be able to
CO222006B.1. Define the concept of intercultural competence in Japanese language
CO222006B.2. Use the Hiragana of Japanese language
CO222006B.3. Explore the Japanese language cultural

Subject 10: Audit Course : College to Corporate (MCA222006C)
At the end of this course, Students will be able to
CO222006C.1. Describe the concept of financial accounting
CO222006C.2. Demonstrate better performance in the recruitment process
CO222006C.3. Use the soft skills in various domain
CO222006C.4. Implement basic communication skills in real world

Subject 11: Audit Course : Environmental Studies (MCA222006D)
At the end of this course, Students will be able to
CO222006D.1. Identify different types of environmental pollution and control measures
CO222006D.2. Comprehend the importance of ecosystem and biodiversity
CO222006D.3. Compare the exploitation and utilization of conventional and non-conventional resources
CO222006D.4. Correlate the human population growth and its trend to the environmental degradation and develop the awareness about his/her role towards environmental protection and prevention

SYMCA – Sem I (2020 pattern)

Subject 1: Data Science AND Data Science Laboratory(410901 and 410908)
At the end of this course, Students will be able to
CO410901.1 Explain flow process for data science problems
CO410901.2 Elaborate data preprocessing and warehouse.
CO410901.3 Utilize various classification techniques for commercially available datasets.
CO410901.4 Implement association rule mining for commercially available datasets.
CO410901.5 Apply standard clustering methods for commercially available datasets.
CO410901.6 Compare appropriate data visualization method for effective visualization of data

Subject 2: Web Technologies AND Web Technologies Lab(410902 AND 410906)
At the end of this course, Students will be able to
CO410902.1 Design web-based application using client-side Technology.
CO410902.2 Develop the structure of web sites using XML components**.**
CO410902.3 Analyze current client-side web technologies: JavaScript in detail.
CO410902.4 Apply recent client-side web technologies: Angular JS indetail.
CO410902.5 Apply the server side technologies for web development
CO410902.6 Create the effective web applications for business functionalities using ASP.NET

Subject 3: Cloud Computing(410903 and 410906)
At the end of this course, Students will be able to
CO410903.1 Understand the different Cloud Computing environment
CO410903.2 Use appropriate data storage technique on Cloud
CO410903.3 Analyze virtualization technology
CO410903.4 Develop and deploy applications on Cloud
CO410903.5 Apply security in cloud applications
CO410903.6 Use advance techniques in Cloud Computing

Subject 4: Elective: II-Big Data Analytics (410904A)
At the end of this course, Students will be able to
CO410904A.1 Understand big data analytics concepts
CO410904A.2 Solve big data problems using Hadoop
CO410904A.3 Apply different Supervised learning and Unsupervised Learning algorithms
CO410904A.4 Understand different data visualization techniques**.**
CO410904A.5 Understand Hadoop Architecture
CO410904A.6 Solve Complex real world problems in various applications like recommender systems, social media applications, etc.

Subject 5: Elective: II- Machine Learning (410904B)
At the end of this course, Students will be able to
CO 410904B.1 Understand basic concepts of Machine Learning
CO 410904B.2 Understand classification concepts
CO 410904B.3 Apply different regression and generalization techniques**.**
CO 410904B.4 Apply various logic Based and algebraic algorithms for real world applications
CO 410904B.5 Use probabilistic models for machine learning
CO 410904B.6 Understand trends In Machine Learning

Subject 6: Software Testing and Quality Assurance AND Computer Laboratory(410905 AND 410907)
At the end of this course, Students will be able to
CO410905.1 Illustrate different approaches of quality management, assurance, and quality standard to software system
CO410905.2 Create test plan, test cases and defect repository using case study
CO410905.3 Apply the concept of white box and block box testing techniques
CO410905.4 Analyze various testing types
CO410905.5 analyze recent automation tools for software testing
CO410905.6 Apply software testing automation concepts using Selenium

Subject 7: Software Project Based Learning –II (410909)
At the end of this course, Students will be able to
CO410909.1 Identify the real life problem from societal need point of view
CO410909.2 Choose and compare alternative approaches to select most feasible one
CO410909.3 Analyze and synthesize the identified problem from technological perspective
CO410909.4 Design the reliable and scalable solution to meet challenges
CO410909.5 Inculcate the habit of lifelong learning
CO410909.6 Design and develop technical documentation

SYMCA – Sem II

Subject 1: Major Project (410912)

At the end of this course, Students will be able to

CO410912.1 Learn team work and professionalism.
CO410912.2 Apply SDLC to project
CO410912.3 Apply communication and presentation skills
CO410912.4 Recognize the importance of documentation

Subject 2: Seminar on Major Project(410913)

At the end of this course, Students will be able to

CO410913.1 Identify topic for technical presentation on his/her area of Major Project
CO410913.2 explain domain knowledge related to technical topic
CO410913.3 prepare a literature survey and analysis related to technical topic
CO410913.4 adapt writing skills for preparing technical document
CO410913.5 explore various presentation skills