Program Details

MCA- Master of Computer Applications

PROGRAM DETAILS

Faculty	Computing and IT (FCIT)
School	School of Computer Applications (SCA)
Program	MCA-Master of Computer Applications
Dean of Faculty	Mrs. Shweta Marigoudar
Director of School	Mr. Rajashekhar G.C.

1	**Title of the Award**	MCA
2	**Modes of Study**	Full Time
3	**Awarding Institution /Body**	GM University
4	**Joint Award**	Not Applicable
5	**Teaching Institution**	FCIT GM University
6	**Date of Program Specifications**	November -2023
7	**Date of Course Approval by the Academic Council of GMU**	---
8	**Next Review Date:**	---
9	**Program Approving Regulating Body and Date of Approval**	---
10	**Program Accredited Body and Date of Accreditation**	---
11	**Grade Awarded by the Accreditation Body**	---
12	**Program Accreditation Validity**	---
13	**Program Benchmark**	N/A
14	**Program Overview- MCA** The Master of Computer Applications (MCA) program is a comprehensive postgraduate course designed to impart advanced knowledge and skills in the field of computer applications. Spanning two to three years, this program caters to individuals seeking expertise in software development, system analysis, and database management. The curriculum encompasses a wide array of subjects, including programming languages, algorithm design, software engineering, and emerging technologies. Students engage in a rigorous academic environment that combines theoretical concepts with	

	practical applications through hands-on projects and internships. The program aims to equip graduates with a deep understanding of software development methodologies, data management, and system architecture. Advanced topics such as artificial intelligence, machine learning, and cybersecurity are integrated to prepare students for the evolving landscape of the technology industry. Upon completion, MCA graduates are well-prepared to pursue roles in software development, IT consulting, project management, and research. The program emphasizes critical thinking, problem-solving, and effective communication skills, ensuring that graduates are equipped to tackle complex challenges and contribute to the ever-expanding field of computer applications.
15	**Program Educational Objectives (PEOs) for Master of Computer Applications (MCA):** **1. Advanced Technical Expertise:** • Graduates of the MCA program will possess advanced technical expertise in computer applications, demonstrating a deep understanding of software development, system analysis, and emerging technologies. They will be well-versed in the application of theoretical knowledge to solve complex computing challenges. **2. Leadership and Innovation:** • MCA graduates will exhibit leadership skills and a capacity for innovation in the field of computer applications. They will be capable of leading software development teams, implementing innovative solutions, and adapting to evolving technological landscapes. **3. Effective Collaboration and Communication:** Alumni of the MCA program will excel in collaborative environments, effectively communicating technical concepts and leading interdisciplinary teams. They will demonstrate the ability to contribute to the success of projects through clear communication and seamless teamwork.
16	**Program Outcomes for Master of Computer Applications (MCA):** **1. Advanced Software Development Proficiency:** • *Outcome:* Graduates will demonstrate advanced proficiency in software development, including the ability to design, implement, and optimize complex and scalable software systems. **2. System Analysis and Design Competence:** • *Outcome:* Graduates will exhibit competence in system analysis and design, effectively applying architectural principles to develop robust and efficient computing solutions. **3. Specialized Knowledge in Emerging Technologies:** *Outcome:* Graduates will possess specialized knowledge in emerging technologies, such as artificial intelligence, machine learning, and cybersecurity, enabling them to address contemporary challenges in the computing industry.

	4. Database Management Proficiency: • *Outcome:* Graduates will showcase proficiency in database management, encompassing the design, optimization, and administration of databases to ensure efficient data storage and retrieval. **5. Effective Project Management Skills:** • *Outcome:* Graduates will demonstrate effective project management skills, overseeing the successful completion of software projects and coordinating interdisciplinary teams. **6. Research and Development Capabilities:** • *Outcome:* Graduates will have the capability to engage in research and development activities, contributing to advancements in computer applications through innovative solutions and methodologies. **7. Adaptability to Evolving Technologies:** • *Outcome:* Graduates will showcase adaptability to evolving technologies, staying abreast of industry trends and integrating new tools and methodologies into their professional practices. **8. Ethical and Professional Conduct:** • *Outcome:* Graduates will uphold ethical standards and exhibit professional conduct in all aspects of their work, ensuring responsible and ethical use of computing technologies.
17	**Program Specific Outcomes (PSOs) for Master of Computer Applications (MCA):** **1. In-Depth Software Architecture Design:** • *PSO:* Graduates will demonstrate proficiency in designing complex software architectures, applying advanced principles to develop scalable and efficient computing solutions. **2. Advanced Data Management and Optimization:** • *PSO:* Graduates will possess specialized skills in advanced data management, encompassing the design, optimization, and administration of databases to ensure efficient and secure data storage and retrieval. **3. Innovative Application of Emerging Technologies:** • *PSO:* Alumni will showcase the ability to innovate in the application of emerging technologies, leveraging concepts from artificial intelligence, machine learning, and cybersecurity to address complex challenges in diverse computing environments.

18. Credit Requirements

- To complete a postgraduate program- M.C.A, a student is required to earn 80 credits
- Those students who successfully complete only course work (40 Credits) Postgraduate Diploma is awarded
- The credit distribution for M.C.A. Program:

Course Work – 13 X 3 Credits =	39 Credits
Course Work Lab – 6 X 2 Credits =	12 Credits
Course with integrated lab- 2 X 4 Credits=	08 Credits
Research Work=	07 Credits
Project Work =	07 Credits
Internship =	08 Credits
Technical Skills=	06 Credits
Athletics, Sports, Yoga, Gymnasium	02 Credits
Co-Curricular Activities (Seminar/Conference/Exhibition/Technical Competition)	02 Credits
Placement Training	04 Credits
Total	**95 Credits**

19. Programme Structure

Sl. No.	Semester	Course Code	Course Title	Credits
1	1	PC24CA5101	Mathematical Foundation of Computer Science	3
2		PC24CA5102	Operating System	4
3		PC24CA5103	Data Warehousing and Data Mining	3
4		PC24CA5104	Data Structure and Applications	3
5		PC24CA5105	Data Structure Lab	2
6		PC24CA5106	Object Oriented Programming with Java	3
7		PC24CA5107	Java Lab	2
8		P24TS01	Technical Skills	2
Total				**22**
Break				
Sl. No.	**Semester**	**Course Code**	**Course Title**	**Credits**
1	2	PC24CA5201	Design and Analysis of Algorithm using Java	4
2		PC24CA5202	Computer Network & Security	3
3		PC24CA5231/ PC24CA5232/ PC24CA5233/ PC24CA5234	**Specialization – 1**	3
4		PC24CA5207	Python Programming	3
5		PC24CA5208	Python Programming Lab	2
6		PC24CA5209	Database Management System	3
7		PC24CA5210	Database Management System Lab	2
8		P24TS01	Technical Skills	2
9		P24PT02	Placement Training	2
10		P24AS03	Athletics, Sports, Yoga, Gymnasium	1
11		P24CC04	Co-Curricular Activities (Seminar/Conference/Exhibition/Technical Competition)	1
Total				**26**
Break				

Sl. No.	Semester	Course Code	Course Title	Credits
1	3	PC24CA6301	Software Engineering and Project Management	3
2		PC24CA6302	Research Methodology and IPR	3
3		PC24CA6303	Digital Image processing	3
4		PC24CA6304	Digital Image processing Lab	2
5		PC24CA6331/ PC24CA6332/ PC24CA6333/ PC24CA6334	**Specialization – 2**	3
6		PC24CA6309	Web Technology	3
7		PC24CA6310	Web Technology Lab	2
8		P24TS01	Technical Skills	2
9		P24PT02	Placement Training	2
10		P24AS03	Athletics, Sports, Yoga, Gymnasium	1
11		P24CC04	Co-Curricular Activities (Seminar/Conference/Exhibition/Technical Competition)	1
Total				**25**

Break				
Sl. No.	**Semester**	**Course Code**	**Course Title**	**Credits**
1	4	PC24CA6401	Internship	8
2		PC24CA6402	Dissertation	7
3		PC24CA6403	Research Paper Publication	7
Total				**22**

List of **Specialization – 1** Offered

1. Artificial Intelligence and Machine Learning
2. Artificial Neural Network
3. Big Data Analytics
4. Data Science

List of **Specialization – 2** Offered

1. Full stack Development
2. Advanced Java Programming
3. Cyber Security
4. Cloud Computing

20	**Teaching and Learning Methods** 1. Face to Face Lectures using Audio-Visuals 2. Laboratory work/Fieldwork/Workshop 3. Project Based Learning 4. Problem Based Learning 5. Group Exercises/Assignments 6. Demonstrations 7. Guest Lectures 8. Industry Visit 9. Workshops, Group Discussions, Debates, Presentations 10. Project Work 11. Project Exhibitions 12. Technical Competitions
21	**Attendance** A minimum of 85% attendance is essential for each module.

22	**Assessment and Grading** 1. Every course will be assessed for a weight of 100 2. Assignments- 50% weight 3. Semester End Examination-50% weight 2. If marks scored is: • 91 and above O (outstanding); 81-90 : A+ (Excellent); 71-80: A (Very Good); 61-70: B+ (Good); 51-60 : B (Above Average); 40 -50: C (Average); below 40: D (Not satisfactory) • If one scores D grade, the candidate is required to re-register for the module and earn the required credits • **A minimum of overall 50% is required for completion of a Module by acquiring minimum grade (pass) with a minimum of 50% in each component.** **4.** End of each module –grade card will be issued
23	**Award of Degree** Every student registering for the program need to complete a **minimum of 80 credits, for the award of MCA Degree** **Award of Degree Certificate:** Students will be issued consolidated grade card with CGPA displayed and GM University Degree Certificate. **Award of Gold Medal:** A student with highest CGPA (Not less than 9.0 on a scale of 10) in the class without getting a D grade in any course over 8 semester and completing the program within the specified period of 2 years (4 semesters) will be awarded Gold Medal.

24	**Student Support for Learning** 1. Course Notes 2. Reference Books in the Library 3. Magazines and Journals 4. Internet Facility 5. Computing Facility 6. Laboratory Facility 7. Workshop Facility 8. Staff Support 9. Lounges for Discussions 10. Any other support that enhances their learning

25	**Quality Control Measures** 1. Review of Course Notes 2. Review of Question Papers and Assignment Questions 3. Student Feedback 4. Moderation of Assessed Work 5. Opportunities for students to see their assessed work 6. Review by external examiners and external examiners reports 7. Staff Student Consultative Committee meetings 8. Student exit feedback 9. Course Assessment Board (CAB) 10. Programme Assessment Board (PAB)