GLS UNIVERSITY

Faculty of Computer Technology
Master of Computer Applications (MCA) Programme

1. GLS University's Master of Computer Applications programme is a three-year full-time postgraduate programme leading to the degree of Master of Computer Applications (MCA). The programme will be offered by constituent college of GLS (Shailesh R. Parikh) Institute of Computer Technology of GLS University.

2. Programme Objectives

The programme aims at inculcating essential skills as demanded by the industry through an interactive learning process. This includes audio/video presentations, team building skills and personality development programmes. The broad objectives of the programme are:

- Demonstrate their learning of different domains by designing, critiquing, modifying and fine tuning suitable computer applications.
- Design and write computer programs to the need of a customer.
- Develop integrated perspectives of problem solving abilities.
- Solve practical problems using IT and Computer related tools in their chosen area of specialization through electives.
- Involve in real life experience during their industrial training and demonstrate the applicability of their learning in classes.
- Develop entrepreneurship and leadership qualities and use them in problem solving at various places during their studies as well as workplace where they undergo project.

3. Eligibility Norms for Admission to First Year MCA

Any graduate with 50% score. Candidate shall also have passed the Higher Secondary School Examination (Standard XII, 10+2 pattern) or Bachelors' degree with Mathematics or Business Mathematics or Statistics as on of the subjects.

For MCA lateral entry (Direct second year), candidate who have passed the qualifying examination in the stream of Bachelor of Computer Application or Bachelor of Science (IT) or Bachelor of Science (Computer) are only eligible.

Admissions are given by ACPC based on CMAT score.

4. Admission

a) The intakes for the MCA first year program will be120 seats. While intake for the MCA second year program (Lateral entry) will depend on the number of vacant seats plus the 20% of the existing seats.

b) Admission to reserved category candidates will be as per the guidelines of Government of Gujarat.
c) The admission process will be done by the Admission committee for Professional courses (ACPC) based on the merit list.
d) Separate category-wise merit lists will be prepared.
e) Candidate need to produce provisional eligibility certificate from the university where he had obtained graducation.

5. Programme Overview

The entire schedule of academic activities of the programme will be listed in the Academic Calendar to be released at the beginning of each academic year. The overview of the Programme is as follows:

Sr.No.	Particulars	Number
1	No. of years/semesters (i) Admission to first year MCA program (ii) Admission to second year MCA program(Lateral Entry)	 3/6 2/4
2	Total Credits (i) Admission to first year MCA program (ii) Admission to second year MCA program(Lateral Entry)	 160 110
3	Total No. of Courses (i) Admission to first year MCA program	 38
	a) Core courses	15
	b) Foundation courses	4
	c) Options in elective courses	22
	d) Elective courses	6
	e) Practical courses	11
	f) Project work	2
	Total No. of Courses ((ii) Admission to second year MCA program(Lateral Entry)	24
	a) Core courses	7
	g) Foundation courses	3
	c) Options in elective courses	22
	d) Elective courses	6
	e) Practical courses	6
	f) Project work	2
4	Total teaching weeks (per semester)	15
5	Admission and examination weeks per semester	2

6. Programme Structure (Semester-wise)

	SEMESTER I		
Code	Core Courses	Credits	Objectives
MCA111	Fundamentals of programming using C	4	To provide students a basic understanding of logic development and elements of programming language.
MCA112	Fundamentals of mathematics	4	To make students understand the basic concept of mathematics to be used in other subjects of computer application
MCA113	Database management system	4	To introduce students to the basics concepts of database management system.
MCA114	Fundamentals of Information Technology	4	To introduce students to the different aspects related to the information and communication technology.
MCA115	Fundamentals of computer organisation	4	To provide students with the basic understanding of internal working of computers and microprocessor.
MCA116	Practical based on MCA 111	2	To implement the logic and elements of programming learned in theory using C.
MCA117	Practical based on MCA 113	3	To implement the concept of SQL/PLSQL.
	TOTAL CREDITS	**25**	

SEMESTER II			
Code	Core Courses	Credits	Objectives
MCA121	Object oriented programming using C++	4	To introduce students to the object oriented programming concepts.
MCA122	Data Structure	4	To make student understand the working of different data structures ad its applications in problem solving.
MCA123	Operating System	4	To acquaint students with the working of operating system and different concepts related to operating systems.
MCA124	Enterprise Resource Planning	4	To make student understand the need for integrated system, resources and different technology associated with ERP.
MCA125	Practical based on MCA 121	3	To implement the concepts learned in object oriented programming using C++.
MCA126	Practical based on MCA 122	3	To implement different data structures and its operations in C/C++.
MCA127	Practical based on MCA 123	3	To use the commands of open source operating system and shell scripting.
	TOTAL CREDITS	25	

**SEMESTER III**			
Code	**Core Courses**	**Credits**	**Objectives**
MCA211	Structured and Object oriented Analysis and Design	4	To introduce students to the two different approaches of system analysis and design along with practicing the different diagrams.
MCA212	Statistical Methods	4	To acquaint student with the methods, concepts and statistical test and analysis of statistical data and its application in the field of computer science.
MCA213	Java	4	To introduce students to the object oriented programming language Java and various elements associated with it,
MCA214	Web Programming	4	To introduce students to the fundamentals of web design and development of web site using open source tool.
MCA215	Cloud computing	4	To make student understand the different architecture and types of cloud, need for cloud and implementation and configuration aspects of cloud computing.
MCA216	Practical based on MCA 213	2	To implement the concepts leaned in JAVA using programs and projects.
MCA217	Practical based on MCA 214	3	To implement the concepts of web design and development through PHP and Mysql.
	TOTAL CREDITS	**25**	

SEMESTER IV			
Code	Core Courses	Credits	Objectives
MCA221	Fundamentals of Networking	4	To introduce students to the terminology of different concepts related to networking and networking model.
MCA222	Soft skills	4	To acquaint students with the skills required to success in campus placement and industry. It also includes resume writing, group discussion and personal interview.
MCA223	Management Information System	4	To introduce student to the concept related to different types of information, information system and decision making aspects based on information system.
MCA224	Group A Elective I	4	To introduce students to the emerging areas of computer science and related fields to enhance their job prospects.
MCA225	Group B Elective I	4	To introduce students to the emerging areas of computer science and related fields to enhance their job prospects
MCA226	Practical based on MCA 221	2	To implement the concepts learned in the subjects of networking and different protocols.
MCA227	Practical based on MCA224	3	To implement the concepts learned in elective I of group A and strengthen the job prospects.
	TOTAL CREDITS	25	

Note: The detailed descriptions of electives are given separately.

SEMESTER V			
Code	Core Courses	Credits	Objectives
MCA311	Software Engineering	4	To equip students with the different aspects related to software development life cycle and different approaches of software development.
MCA312	Group A Elective II	4	To introduce students to the emerging areas of computer science and related fields to enhance their job prospects.
MCA313	Group A Elective III	4	To introduce students to the emerging areas of computer science and related fields to enhance their job prospects.
MCA314	Group B Elective II	4	To introduce students to the emerging areas of computer science and related fields to enhance their job prospects.
MCA315	Group B Elective III	4	To introduce students to the emerging areas of computer science and related fields to enhance their job prospects.
MCA316	Practical based on MCA 312	3	To implement the concepts learned in elective II of group A and strengthen the job prospects
MCA317	Practical based on MCA 313	3	To implement the concepts learned in elective III of Group A and strengthen the job prospects.
MCA318	Dissertation/Project based on Specialisation	4	To practice and implement all the skills learned so far in MCA and develop a small write up or mini project report based on the experiments carried out.
	TOTAL CREDITS	30	

SEMESTER VI			
Code	Core Courses	Credits	Objectives
MCA321	Entrepreneurship	5	To enable students to understand the process of starting their own venture and related aspects of enterprising and encourage them to be an entrepreneur.
MCA322	Software project development	25	To enable student to take the experience of real word scenario in the chosen software related industry and implement the theoretical and practical aspects learned in entire MCA curriculum.
	TOTAL CREDITS	30	

*   *Elective courses will be offered subject to a minimum number of students (As decided by the institute) opting for the same.*

List of electives:

Electives are divided into two groups. Electives in group A are such where student also have to carry out practical implementation and appear in the practical exam of the same. While electives in group B are such where student will be given assignments and projects to understand the practical aspects related to the subjects.

From each group, students have to select three different electives in Sem IV and Sem V.

Group A Electives	Objectives
Data ware housing and Data mining	To know the process of storing old data for later utilization of trend and pattern analysis through data mining.
Big Data analysis	To learn the techniques, tools and methods of the analysis of big data.
Introduction to TCP/IP	To understand the configuration of TCP/IP and the protocols related to it.
Network Administration	To equip students with the knowledge of network maintenance and management activities and configure different servers like file server, DHCP server, Proxy server etc.
Mobile application development using Android	To enable students in understanding the process of mobile application development with implementation for Android application.
Mobile application development using iOS	To enable students in understanding the process of mobile application development with implementation for iOS application.
Parallel Programming	To help students in understanding the need and implementation of multiple processes in single processor and multiprocessor architecture.
Advanced JAVA	To introduce students to the advance concepts and framework of web based technologies related to JAVA.
Introduction to Python	To understanding the programming techniques of Python. It enables the students to develop programs by learning expression, variables, conditionals loops, objects etc.
Open Source framework	To acquaint students with the technologies of open source framework for content management and related systems.
Software Testing	To make student understand the process of testing and methods of manual testing and tools for automated testing.

Group B Electives	Objectives
Advanced Database Management System	To acquaint students with the advanced concepts like transaction management, concurrency and control related to DBMS.
Information Security	To acquaint students with the knowledge of security risk related to data and information along with other related aspects and understand the tools and methods to protect them.
Network Security	To acquaint students with the knowledge of security risk related to network along with other related aspects and understand the tools and methods to protect them.
Cyber Security	To acquaint students with the knowledge of security risk related to cyber space along with other related aspects and understand the tools and methods to protect them.
Mobile Communication	To acquaint students about the concepts of communication process carried out in mobile technology.
Technical writing	To acquire students the necessary skills required to write SRS, and other technical documentation and manuals to become technical writer.
Software Project Management	To understand the process of project management for the software product.
Business analysis	To acquaint students with the skills of analysis for different business domains and convert it into software requirements.
Digital Marketing	To acquire the competency of marketing for digital media.
Decision support system and knowledge management system	To understand the process of decision support system and knowledge management and automation tools for the same.
Operation research	To equip students with the one of the branch of decision science and formulating and solving complex programmed decisions through mathematical model.

7. Evaluation Pattern

	Internal Evaluation	External Evaluation
Core Courses		
Foundation Courses		
Elective Courses	50%	50%
Specialization Elective Courses		

- Passing percentage in Internal and External evaluation is 40 each. The components of the internal evaluation will be communicated by the institution at the beginning of the semester.
- External evaluation will consist of University Examination to be conducted by GLS University.