MAHATMA GANDHI UNIVERSITY

MASTER OF COMPUTER APPLICATIONS

REGULATIONS and SCHEME

for

**AFFILIATED COLLEGES and SCHOOL OF
TECHNOLOGY AND APPLIED SCIENCES
(From 2011 admission onwards)**

1. **Conditions for Admission**

   Qualifications

   i) A candidate seeking admission to MCA course must have

   A pass with not less than 50% marks in any recognized regular Bachelor's Degree course of minimum three years duration in any discipline with Mathematics at 10+2 level.

   <center>OR</center>

   A pass with not less than 50% marks in any recognized Regular Bachelors Degree course of minimum three years duration in any discipline with Mathematics/Statistics(this does not include Business Mathematics or Business Statistics) as one of the Subjects.

   <center>OR</center>

   A pass with not less than 50% marks in BCA degree of minimum three years duration from a recognized University.

   ii) Subject to the regulation relating to prescribed minimum of the respective qualifying examination, the minimum marks of admission to the course of studies shall be a pass in the case of SC/ST candidates.

   iii) Candidates belonging to Socially and Educationally Backward Classes (SEBC) referred to GO(P)208/66/Edn dated. 2-5-96 and subsequent amendments to order issued by the Government shall be given a relaxation of 2% marks in the prescribed minimum for admission.

   iv) A relaxation of 5% marks from the prescribed minimum shall be allowed in the case of physically handicapped persons.

   v) Candidates who have passed the qualifying examination in more than one chance in the subject (excluding languages) will have their percentage marks derated at the rate of 5% for every additional appearance for the purpose of ranking.

   Candidates with such degrees awarded by the Mahatma Gandhi University or any other degree recognized as equivalent to degrees in (i)   by the Mahatma Gandhi University also are eligible to apply.

   Reservation of seats shall be as per rules prescribed in the relevant rules by the Directorate of Technical Education, Government of Kerala.

2 **Duration of the Course** :

   The course shall extend over a period of three academic years consisting of six semesters.

3. **Requirements of attendance and progress :**

   A candidate will be deemed to have completed the course of any semester only if

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a) He has put in not less than 75% of attendance.

b) His progress and conduct have been satisfactory.

4. Procedure for completing the Course :

i. The academic year will be divided into two semesters, the odd semester normally commencing at the beginning of the academic year and even semester ending with the academic year.

ii. The course work in the subjects of study of the odd semesters will ordinarily be conducted only in odd semesters and that of even semesters only in even semesters.

iii. A candidate may proceed to the course of study of any semester if and only if he has completed the course in the previous semester and has registered for the examination of the previous semester.

iv. A candidate who is required to repeat the course of any semester for want of attendance / progress or who desires to rejoin the semester after a period of discontinuance or who upon his own request is specially permitted to repeat the semester in order to improve his performance, may be permitted to join the semester for which he is eligible or permitted to join.

5. Assessment :

i) The assessment will comprise of sessional assessment and university examination in certain subjects, and wholly sessional assessments in others, carrying marks as specified in the subject of study and scheme of assessment.

ii) A candidate shall be declared to have passed in any subject in full in any semester if he/she secures not less than 50% marks in sessional, not less than 40% marks in the University examination including project and viva and not less than 50% of the over all aggregate marks for the subject ie., university examination marks and sessional marks of the subjects put together.

iii) A student may be given the option to improve the marks obtained in theory subjects of any semester (except the sixth semester) by canceling all the theory examinations of the semester. There will be no provision to improve the sessional marks of any semester unless he repeats the semester.

vi) University examinations will be conducted at the end of each semester for subjects offered during the semester.

v) Semester examinations will normally be conducted in October/November and in April/May of each year.

vi) All Sessional work shall be valued and marks awarded on the basis of day to day performance, periodic tests and assignments. The allocation of sessional marks for individual subjects shall be on the following basis.

Theory Subjects		Practicals	
Attendance	10%	Attendance	10%
Assignments /Seminar	30%	Regular class work / Lab record / Class Performance	50%
Tests	60%	Tests	40%
Total	100%	Total	100%

The sessional marks allotted for attendance shall be awarded in direct proportion to the percentage of attendance secured by the candidate in the subject. However, full sessional marks for attendance shall be awarded to those who are securing 80% of the attendance and above.

6. Normalization of Sessional Marks

For the MCA course, the maximum internal marks(awarded internally) and external marks(awarded by external examiner appointed by the university) for all theory / practical papers shall be 25 and 75 respectively, except for the following papers.
MCA107, MCA108, MCA506, MCA507, MCA508.

To enforce uniformity in the awarding of internal marks by all institutions, there is a need to stipulate rules for normalizing the marks so that the abnormal and unjust variations in sessional marks are controlled to a reasonable extent.

For MCA 108, MCA 507 and MCA 508, having only sessional assessment, the Head of the institution should ensure that the class average does not exceed 80%. For the remaining papers the following normalization method shall be implemented by the University.

Normalization Method

The maximum percentage of internal marks of a candidate shall be limited to 40% above that of external marks secured by the candidate.

In the case of a candidate who fails to get the pass minimum or absent for external examination for a paper, the normalized internal marks shall be computed only when he/she gets through the new external examination and the internal marks will be computed as per the new external marks.

Illustration

Internal	Maximum marks - 25	Pass minimum - 12.5
External	Maximum marks - 75	Pass minimum – 30
	Maximum Marks - 25	Pass Minimum - 10
Overall	Maximum marks - 100	Pass minimum - 50

Reg. No.	External		Max. % of internal eligible (% of external+40%)	Internal awarded by college	Internal marks after normalization
	Marks awarded out of 75	Percentage			
1	40	53%	93	20	20
2	15(failed)	20%	-	-	-
	30(Next appearance)	40%	80%	22	20(limited to 80%)
3	60	80%	100	21	21
4	Absent	-	-	-	-
	60(Next appearance)	80%	100	18	18

The above shall be computed using software and the normalized internal marks in the last column shall be carried over to the mark list.

7. University Exam Question Paper Pattern

The pattern shall comprise of 2 parts: PART A (10 x 3=30 marks) and PART B (5 x 9=45 marks). **Part A** shall have 30 marks, in which the student is expected to answer 10 short questions (3 marks each) out of 12 questions evenly prepared from all the five modules. These questions can consist of definitions, theoretical concepts, short illustrative examples, block schematics etc.. **Part B** shall have 2 questions from each module, out of which the student has to answer one from each module (9 marks). These can be descriptive type questions, derivations, problems or collection of 2 or more smaller questions in a topic. This offers 50% choice to the students, yet forces him to study all the five modules.

8 Passing requirements/classification of successful candidates

i) A candidate shall be declared to have passed in any subject if he/she satisfies clause 5(ii) above.

   a) If any candidate fails in want of either minimum marks for university examination or minimum marks for overall aggregate for any subject, he/she can appear for the supplementary examination at the ensuing chance only in the failed subjects alone.

   b) If any candidate fails in want of minimum marks for *sessional part* alone for any subject, he/she has to write supplementary examination for *both the sessional part and university examination in the ensuing chance only in the failed subjects alone*. Sessional part of such candidates may be evaluated by the institution, considering the marks for attendance already obtained, but new assessment should be done for seminar/assignment and tests along with the subsequent batch. The new sessional mark has to be forwarded to the university along with the sessional marks of subsequent batch.

   c) If any candidate fails in MCA 108, MCA 507 & MCA 508, having only sessional assessment, he/she has to redo the work for that subject along with the subsequent batch.

ii) A candidate who successfully completes the course and satisfy all the passing requirements of the six semesters within six academic years of joining the course will be declared to have qualified for the degree. However, in exceptional cases with genuine and convincing reasons, it is the discretion of the syndicate of the University to effect changes in this regard.

iii) A candidate who qualifies for the degree and secures not less than 75% of the aggregate of total marks of all the six semesters *in the first attempt in all the subjects* shall be declared to have passed the MCA Degree examination in *First Class with Distinction*.

iv) A candidate who qualifies for the degree and secures not less than 60% of the aggregate of total marks of all the six semesters shall be declared to have passed the MCA Degree examination in First Class .

v) All other successful candidates shall be declared to have passed the MCA Degree examination in Second Class.

vi) Successful candidates who complete the examinations with Distinction shall be ranked on the basis of the aggregate of the total marks of all six semesters.

9 Revision of Regulations

The University may from time to time revise, amend or change the regulations, curriculum, scheme of examinations and syllabi. These changes unless specified other wise will have effect from the beginning of the semester following the notification by the University.

SCHEME

I Semester

Course No.	Subject	No. of hours per week		Durat- ion of Exam in hrs	Sess- ional Marks Max.	Sem. Exam. Marks Max	Total Mark
		Lect	Lab.				
MCA 101	Mathematical Foundations of Computer Science	4	-	3	25	75	100
MCA 102	Digital Systems & Logic Design	4	-	3	25	75	100
MCA 103	Computer Organization and Architecture	4	-	3	25	75	100
MCA 104	Principles of Management and Accounting	4	-	3	25	75	100
MCA 105	Structured Programming in C	4	-	3	25	75	100
MCA 106	C Programming Lab	-	4	3	25	75	100
MCA 107	PC Hardware Lab	-	2	2	25	25	50
MCA 108	Communication & Soft skills	-	2		50		50
	Total	20	8				700

II Semester

Course No.	Subject	No. of hours per week		Durat- ion of Exam in hrs	Sess- ional Marks Max.	Sem. Exam. Marks Max	Total Mark
		Lect	Lab.				
MCA 201	Probability and Statistics	4	-	3	25	75	100
MCA 202	Data Structures and Analysis of Computer Algorithms	4	-	3	25	75	100
MCA 203	Microprocessors and Embedded Systems	4	-	3	25	75	100
MCA 204	Operating Systems	4	-	3	25	75	100
MCA 205	Object Oriented Programming with C^{++}	4	-	3	25	75	100
MCA 206	C^{++} Lab	-	4	3	25	75	100
MCA 207	Data Structures Lab in 'C'	-	4	3	25	75	100
	Total	20	8				700

III Semester

Course No.	Subject	No. of hours per week		Duration of Exam in hrs	Sessional Marks Max.	Sem. Exam. Marks Max	Total Mark
		Lect	Lab.				
MCA 301	Java and Web Programming	4	-	3	25	75	100
MCA 302	Software Engineering	4	-	3	25	75	100
MCA 303	System Software	4	-	3	25	75	100
MCA 304	Data Base Management Systems	4	-	3	25	75	100
MCA 305	Data Communications	4	-	3	25	75	100
MCA 306	Java Programming Lab	-	4	3	25	75	100
MCA 307	DBMS Lab	-	4	3	25	75	100
	Total	20	8				700

IV Semester

Course No.	Subject	No. of hours per week		Duration of Exam in hrs	Sessional Marks Max.	Sem. Exam. Marks Max	Total Mark
		Lect	Lab.				
MCA 401	Operations Research	4	-	3	25	75	100
MCA 402	Computer Networks	4	-	3	25	75	100
MCA 403	Linux and Shell Programming	4	-	3	25	75	100
MCA 404	Object Oriented Modeling and Design	4	-	3	25	75	100
MCA 405	Elective- I	4		3	25	75	100
MCA 406	Linux Lab	-	4	3	25	75	100
MCA 407	Open Source Lab – Python/PHP	-	4	3	25	75	100
	Total	20	8				700

V Semester

Course No.	Subject	No. of hours per week		Duration of Exam in hrs	Sessional Marks Max.	Sem. Exam. Marks Max	Total Mark
		Lect	Lab.				
MCA 501	Computer Security	4	-	3	25	75	100
MCA 502	Internet Technology and Distributed Applications	4	-	3	25	75	100
MCA 503	Computer Graphics	4	-	3	25	75	100
MCA 504	Data Mining	4	-	3	25	75	100
MCA 505	Elective - II	4	-	3	25	75	100
MCA 506	Computer Graphics Lab	-	2	2	25	25	50
MCA 507	Seminar	-	2		50	-	50
MCA 508	Mini Project	-	4		100	-	100
	Total	20	8				700

VI Semester

Course No.	Subject	No. of hours per week		Duration of Exam in hrs	Sessional Marks Max.	Sem. Exam. Marks Max	Total Mark
		Lect	Lab.				
MCA 601	Project	-	28	-	200	200	400
MCA 602	Viva-voce	-	-	-		100	100
	Total	-	28				500

ELECTIVE-I

1. Visual Programming
2. Software Quality Management
3. Business Data Processing & COBOL Programming
4. Enterprise Resource Planning
5. Multimedia Systems
6. Neural Networks & Fuzzy Logic
7. Artificial Intelligence
8. Management Information Systems

ELECTIVE-II

1. User Interface Design
2. Bioinformatics
3. Digital Image Processing
4. Advanced Computing Paradigms
5. XML & Web Services
6. Distributed Computing
7. Embedded Systems
8. Genetic Algorithms