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PERIYAR MANIAMMAI INSTITUTE OF SCIENCE & TECHNOLOGY
PMIST

PERIYAR MANIAMMAI
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University)
Established Under Sec. 3 of UGC Act, 1956 • NAAC Accredited
think • innovate • transform

NAAC ACCREDITED

MCA Regulations 2020

CONTENTS

1. University Vision and Mission

Vision

To be a University of global dynamism with excellence in knowledge and innovation ensuring social responsibility for creating an egalitarian society.

Mission

UM1: Offering well balanced programmes with scholarly faculty and state-of-art facilities to impart high level of knowledge.

UM2: Providing student - centered education and foster their growth in critical thinking, creativity, entrepreneurship, problem solving and collaborative work.

UM3: Involving progressive and meaningful research with concern for sustainable development.

UM4: Enabling the students to acquire the skills for global competencies.

UM5: Inculcating Universal values, Self respect, Gender equality, Dignity and Ethics.

2. DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS

Vision:

To be a leading, contemporary, innovative Computer Science and Applications department in inculcating professional competencies in the field of Computing and related interdisciplinary technologies to achieve academic excellence and to facilitate research activities as a timely response to dynamic needs and challenges of industry and society**.**

Mission:

DM1: Imparting quality education in the field of Computing Sciences and Applications and generate successful computing professional

DM2: Encouraging students to collaborate with industry environment and analyze the real world problems culminating in efficient solutions.

DM3: Transforming students into computing professionals and entrepreneurs by imparting quality training and hands on experience with latest tools and technologies.

DM4: Promoting activities in creating applications in emerging areas of computing technologies and applications in order to serve the needs of research, industry, society and scientific community.

DM5: Inculcating value based and ethical commitment for bringing out successful professionals.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO1	The graduate will apply the fundamental concepts of computing technologies in the industry related emerging application areas.
PEO2	The graduate will be able to analyze requirement, design and implement solution for a computing Applications
PEO3	The graduate of the programme will serve as a successful computing professional and researcher by practicing modern tools and technologies.
PEO4	The graduate will be able to excel in leadership, management, communication and decision making skill to become a successful professional and entrepreneur
PEO5	The graduate will be able to practice professional ethics, pursue higher studies in computing and to work in the fields of teaching and research.

Department Mission (DM) with Programme Educational Objectives (PEOs)

	DM1	DM2	DM3	DM4	DM5
PEO1	3	2	2	2	0
PEO2	2	3	2	2	0
PEO3	2	0	3	2	1
PEO4	1	0	1	1	2
PEO5	0	1	1	2	3
Total	**8**	**6**	**9**	**9**	**6**

0-No relation 3- Highly relation 2- Medium relation 1– Low relation

Graduates Attributes

Graduates Attributes (GAs) form a set of individually assessable outcomes that are the components indicative of the graduate's potential to acquire competence to practice at the appropriate level. The GAs are examples of the attributes expected of a graduate from an accredited programme. The computing professional Graduate Attributes of the NBA are as following:

1. **Computational Knowledge:** Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.
2. **Problem Analysis:** Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.
3. **Design /Development of Solutions:** Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
4. **Conduct Investigations of Complex Computing Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage:** Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.
6. **Professional Ethics:** Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.
7. **Life-long Learning:** Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.
8. **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.
9. **Communication Efficacy:** Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and

write effective reports, design documentation, make effective presentations, and give and understand clear instructions.

10. **Societal and Environmental Concern:** Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice.

11. **Individual and Team Work:** Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.

12. **Innovation and Entrepreneurship**: Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

Programme Outcome (PO) And
Programme Specific Outcomes (PSOs)

PO1	To apply fundamental knowledge of Mathematics and Principles of Computing technologies in the field of computing sciences and application areas
PO2	To analyze and apply Programming principles, and computer science theory in design and development of solution.
PO3	To design algorithms, conduct experiments and interpret result to provide valid solutions for computing environment.
PO4	To investigate research related issues and apply modern application tool, and appropriate paradigm for the construction of software system.
PO5	Ability to Communicate effectively with the computing community about requirements and able to present the result clearly.
PO6	Ability to work with technical, management, leadership and entrepreneurial skills so as to deliver effective product within a time constraints
PO7	Ability to apply knowledge of professional, ethical, and security issues involving in creating software and maintaining it.
PO8	Ability to express enthusiasm for self-improvement through continuous professional development and life-long learning.

Programme Specific Outcome

PSO1	**Web Application Development:** Analyze the environment of web based application requirement and produce the interactive web site.
PSO2	**Structured Software Development Methodologies:** Apply structured methods and tools to develop effective software with necessary documents.

3. ADMISSION AND ELIGIBILITY

i) Passed BCA/Bachelor Degree in Computer Science Engineering or equivalent Degree.

OR

Passed B.Sc./B.Com./B.A. with Mathematics at 10+2 Level or at Graduation Level(with additional bridge Courses as per the norms of the concerned University).

Obtained atleast 50 % marks (45 % marks in case of candidates belonging to reserved category) in the qualifying Examination.

ii) Transfer from other University

A candidate can join from any other Universities in the beginning of any semester subject to the recommendations of Equivalence Committee and approval of Competent Authority of the University.

4. DURATION OF THE COURSE

The duration of M.C.A. Course will be two years, divided into four semesters. The duration of each semester will be 90 teaching days. The maximum number of years to complete the course is 3 years as he/she is studying the programme which is two years.

5. DEFINITIONS

Programme refers to M.C.A., Course refers to subject. University means Periyar Maniammai Institute of Science and Technology (PMIST) Deemed to be University popularly known as Periyar Maniammai University (PMU).

6. PRE-REQUISITE

Where a prerequisite is specified for a subject, the student has to get a minimum of pass in the prescribed subject to register for that subject.

7. MEDIUM OF INSTRUCTION

Medium of instruction is English.

8. CREDIT SYSTEM

1 Credit = 1 Lecture hour/Tutorial hour
1 Credit = 2 lab hours

9. COURSE STRUCTURE

M. C. A. programme has 86 Credits. The program structure consisting of Information Technology(38 Credits), Information Technology Electives(07 Credits), Business Management(03 credits), Business Management Electives(06 credits),

Mathematics(13 Credits), Mini Projects (02 credits), Industry lecture(02 credits), Research Methodology(03 credits), Project(12 credits*)* and Value added courses

10. CHOICE BASED CREDIT SYSTEM

The University follows the 'Choice Based Credit System (CBCS)' for MCA programmes. Each credit is worth 15 hours of student study time, comprising all learning activities. Choice Based Credit System is incorporated in this regulation. The core subjects, core electives business management subjects, mathematics papers are offered. Registering for fewer subjects than prescribed in the curriculum is not allowed.

11. EXAMINATION AND ASSESSMENT

a. Theory

S.No	Assessment Task	Conducted during	%
1	Continuous Assessment I- Real time evaluation	45 to 80 working Days	20
2	Continuous Assessment II The components such as Seminar, Assignment, case study/method study/project study, demonstration, drawing, sketch, essay, exhibition/Showcase, interview, journal, laboratory / practical, literature review, model, presentation, portfolio, practicum, problem solving, projects, reflection, reports, self assessment, research paper, thesis and workshop, etc.	0 to 75 working Days (Minimum 5 to Maximum 8 components shall be used)	30
4	Continuous Assessment III -End Semester Pattern	After 90 Days (Equal weightage to all portions)	50

b. Theory cum Lab

S.No.			Task	Marks	Weightage in %	Weightage Formative	Weightage Summative
			Internal Assessment				
1	**Formative**	**Theory Part**	CA 1 (Real Time Evaluation)	20	15	37.5	
2			CA2 (Minimum 5 and maximum of 8 Assessment tools given by the course teacher)	30	22.5		
3		**Lab Part**	CIA -1 (Based on observation Note and rubrics designed by lab teacher)	15	3.75	12.5	
4			CIA-2 (Mid Lab Exam)	15	3.75		
5			CIA -3 Product/Simulation /Design/Program /Process	20	5		
			External Assessment				
6	**Summative**	**Theory**	EAT 3- End Semester Pattern	50	37.5		37.5
7		**Lab Part**	EAL3 - End semester Lab exam (External Assessment)	50	12.5		12.5
			Total	200	100(A) A = B + C	**50 Pass/Fail determination**	**50 Pass/Fail determination**

c. Practical

S.No	Assessment Task	Conducted during	%
1.	Continuous Assessment I- Real time evaluation	45 to 80 Days	30
2.	Continuous Assessment II (Based on observation Note and rubrics designed by lab teacher)	Assessment in every 15 days	30
3.	Continuous Assessment III Or EA-1- Product/Simulation//Design/Programme/ /Process	After 45 Days (Formative)	10
		After 90 days (Summative)	10
4.	EA-2 End semester exam (External Assessment)	After 90 Days	20

d. Projects

Review	%	Schedule
Review -0	-	Two weeks from the commencement of the semester
Review -I	15	After 20 days
Review- II	15	After 40 days
Review -III	15	After 60 days
Review -IV	15	After 80 days
Review -V	40	After 90 days

Attendance Requirement

The minimum attendance required for appearing in the formative assessment for Mid-semester Real Time Evaluation is 65%.

Maximum of five marks is allotted for attendance as one of the components in CA3

Percentage of Attendance	76-81	82-87	88-93	94-99	100
Marks	1	2	3	4	5

The minimum percentage of attendance required to appear for the end semester examinations is 75% (course wise).

If the percentage of attendance is between 65% and below 75% for the individual courses due to medical reasons; then the student is eligible to apply for condonation with a prescribed fee of Rs. 300/ per course and also to produce a medical certificate from a registered medical practitioner not below the rank of a Civil Assistant Surgeon

If the percentage of attendance is less than 75% and above 65% (overall attendance), she /he has to appear for the supplementary exam after gaining the required attendance.

If the percentage of attendance is less than 65% (all courses put together) then the student will be placed under "Redo category".

For calculating the percentage of attendance; following norms are framed:
For CA1 – From the reopening date to the day before CA1 examination
For CA2 – From starting date of CA1 – the day before the CA2 examination
For End semester – From starting date to last working day.

If a student falls under Redo category, while rejoining he/she has to again pay the prescribed semester fees along with re-registration fees (Rs.500/-).

Performance	Letter Grade	% of Attendance
Outstanding	**O**	>=95%
Medium	**M**	>=85% and <95%
Satisfactory	**S**	>=75% and <85%

12. AWARDING GRADES

Passing Minimum

There is no passing minimum for FA. However, a student must secure:

Minimum 40% in SA (includes Theory cum Lab) and 50% in total (overall)

Students are permitted to appear for the supplementary examinations both during odd and even semester.

Type of Assessment	**% of marks**
Formative	-
Summative	40%
Total= Formative + Summative	50%

Formative assessment : provision for improvement

All components pertaining to formative assessment will be offered. A student can take all or a few assessments. The assessment will take place from 4th week of the semester by paying Rs.100 as exam fee along with the consent of respective HoD. The reassessment will be conducted at the Department level, wherein HoD will act as the Chairperson. This improvement provision is not applicable for the current semester courses.

Grade Versus Marks distribution

All assessment of course will be done on absolute marks basis. However for the purpose of the reporting the performance of a candidate, letter grades, each carrying certain points, will be awarded as per the range of total marks (out of 100) obtained by the candidate as detailed below

Grade Letter	**Grade Point**	**Performance**	**Actual Marks**
O	10	Outstanding	A≥91
A+	9	Excellent	81≤A<91
A	8	Very Good	71≤A<81
B+	7	Good	**61≤A<71**
B	6	Above Average	**55≤A<61**
C	5	Pass	50≤A<55
U	0	Reappear/Absent	A<50
W	0	Withdrawal	

13. CALCULATION OF GRADE POINTS

University uses Grade Point Average (GPA), an internationally recognized calculation which is used to find the average result of all grades achieved.

The GPA for each semester is calculated by taking the sum of the products of grade points with the corresponding credits earned by the student divided by sum of credits in that semester. The formula for calculating GPA is given in equation (1).

$$GPA = \frac{\sum_{i} C_{ni} G_{ni}}{\sum_{i} C_{ni}} \quad (1)$$

Cumulative Grade Point Average (CGPA) is the sum of the products of credits with grade points of all semesters divided by the sum of all credits of all semesters. The formula for calculating CGPA is given in equation (2).

$$CGPA = \frac{\sum_{n} \sum_{i} C_{ni} G_{ni}}{\sum_{n} \sum_{i} C_{ni}} \quad (2)$$

where *C* denotes subject *G* denotes grade point *n* denotes semester number and *i* denotes subject number.

14. SUPPLEMENTARY EXAMINATIONS

The students who have not secured minimum marks to pass the subject have to reappear for the supplementary exams in the subsequent semester. Fast track exams are conducted in a month's time from publication of result for 4th semester reappear courses. This is applicable if a student has no standing arrear till 3rd semester.

15. RULES FOR WITHDRAWAL FROM COURSE

A student can withdraw from a course temporarily or permanently due to whatsoever reasons. In that case he can rejoin the course if he/she has temporarily withdrawn from a course. However the maximum number of years to complete the course is 3.

16. ELIGIBILITY FOR THE DEGREE AND CLASSIFICATION OF CLASSES

A Student shall be declared to be eligible for the award of the Degree provided if,

The student has successfully completed the course requirements and has passed all the prescribed examinations within a maximum period of course.

A student is eligible for award of degree in M.C.A. programme if she/he earns total number of credits prescribed by the course curriculum within permitted duration of the course.

CGPA	7.50 and above and passed in first attempt(maximum number of courses which can be withdrawn is three and the withdrawal is considered for only semester of the programme)	First Class with Distinction
	6.00 (in any attempt) and above in n+1 consecutive years where n is the number of years of the programme	First Class
	Less than 6.00	Second class

Presentation and publishing of research articles

In order to motivate the students towards research, it is proposed that students should make presentation and publish research articles during their study period. It is made mandatory for the award of the degree and is applicable for students admitted from the academic year 2017-18 onwards.

2 papers (1-National/International Journal and 1-National/International conference)