

PROGRAM PROJECT REPORT

Master of Computer Applications

1	Degree Awarding body	Dr. M.G.R Educational and Research Institute (Deemed to be University)
2	Teaching institution	Dr. M.G.R Educational and Research Institute Online Education
3	Name of the Program (specified by UGC / AICTE etc.)	Master of Computer Applications
4	Minimum duration of the program (yrs.) as per UGC norms	2 Years
5	Minimum eligibility for admission	Bachelor Degree from a recognized University with Mathematics as one subject in 10+2.
6	Program Credit	75
7	Program level	Masters
8	Nature of Target Group of Learners	Adults/ Professional Learners/Experienced Professionals
9	Date of commencement	1994, 2003 (Deemed)
10	Type of Program: Professional or General	Professional

a) Program's mission & objectives

Mission statement:

To provide quality education in information technology through the combination of theory, and practice to enhance students compatibility in applications development, and to prepare next generation of engineers, and computer scientists.

Program Objective

PEO 1:	To demonstrate a sound knowledge in key areas of Computer Sciences and Industrial Computing
PEO 2:	To demonstrate a substantial understanding of concepts in key areas of Computer Sciences
PEO 3:	To carry out the required analysis and synthesis involved in Computer Systems, Information systems and Computer Applications
PEO 4:	To demonstrate professional competence in developing software and in its design and implementation.
PEO 5:	To develop sound Practical Skills to enable them to addressing problems which arise from Computer systems and Applications
PEO 6	To provide students with an opportunity to strengthen their knowledge in a specific are of computing
PEO 7	To develop tremendous Computer Skills to the learners.
PEO 8	To exhibit practical knowledge of the management concepts and principles in the work scenario.

PEO 9	To develop programming and networking skills of the learners.
PEO 10	To attain theoretical as well as practical knowledge and demonstrate application of technical principles in a professional work setting.
PEO 11:	To sustain effective individual and organizational performance by Leveraging IT skills in a given context.
PEO 12:	To attain research writing skills through research methodologies

b) Relevance of the program with HEI's Mission and Goals:

Institutional Mission:

To provide education at all levels in all disciplines of modern times and in the futuristic and emerging frontier areas of knowledge, learning & research and to develop the overall personality of students by making them not only excellent professionals but also good individuals, with understanding and regards for human values, pride in their heritage and culture, a sense of right.

Program Structure: Master of Computer Application

I SEMESTER

S.N O	Sub.Code	Title of the Subject	T/L/ ETL	L	T	P	C
1.	CMCA22C01	Core I – Advanced Database Technologies	T	3	0	0	3
2.	CMCA22C02	Core II – Advanced Data Structures And Algorithms	T	3	1	0	4
3	CMCA22ET1	ETL - Programming fundamentals with C++	ETL	3	0	1	4
4.	CMCA22EXX	Elective I	T	3	0	0	3
5.	**	Research Methodology	T	2	1	0	3
6.	CMCA22L01	Core Lab I – Advanced Database Technologies Laboratory	L	0	0	4	2
7.	CMCA22L02	Core Lab II - Advanced Data Structures And Algorithms Laboratory	L	0	0	4	2
8.	**	Audit Course (Life Skill)		2	0	0	2
Total							21

III SEMESTER

S.N O	Sub.Code	Title of the Subject	T/L/ET L	L	T	P	C
1.	CMCA22C05	Core V – Cyber Security	T	3	1	0	4
2.	CMCA22C06	Core VI- C# and .Net Programming	T	3	1	0	4
3.	CMCA22C07	Core VII – IOT and Cloud Computing	T	3	1	0	4
4.	CMCA22ET3	ETL - Data Analytics and R Programming	ETL	3	0	1	4
5.	CMCA22OE1	Open Elective (Self Study Paper) – Swayam/NPTEL	T	3	0	0	3
6.	CMCA22L05	Project Phase I	L	0	0	4	2
TOTAL							21

IV SEMEST ER							
S.NO	Sub.Code	Title of the Subject	T/L/ETL	L	T	P	C
1.	CMCA22L06	Project Phase II	L	0	0	18	9
2.	CMCA22I02	Research Publication(Internal Evaluation)	L	0	0	4	2
TOTAL							11

List of Electives							
S.No	Sub.Code	Title of the Subject	T/L/ETL	L	T	P	C
1	CMCA22E01	Data Communication and Networks	T	3	0	0	3
2	CMCA22E0	Distributed Systems	T	3	0	0	3
3.	CMCA22E03	Soft Computing	T	3	0	0	3
4	CMCA22E04	Entrepreneurial Development	T	3	0	0	3
5	CMCA22E05	Object Oriented Software Engineering	T	3	0	0	3
6	CMCA22E06	Data Science	T	3	0	0	3
7	CMCA22E07	Image Processing	T	3	0	0	3
8	CMCA22E08	Web Content-Development	T	3	0	0	3
9	CMCA22E09	Enterprise Resource Planning	T	3	0	0	3
10	CMCA22E10	Software Project Management	T	3	0	0	3
11	CMCA22E11	Object Oriented Modeling And Design	T	3	0	0	3
12	CMCA22E12	Cryptography and Network Security	T	3	0	0	3
13	CMCA22E13	Block chain Technology	T	3	0	0	3
14	CMCA22E14	Machine Learning	T	3	0	0	3
15	CMCA22E15	Data Visualization	T	3	0	0	3
16	CMCA22E16	Data Mining And Warehousing	T	3	0	0	3

Institutional Goals:

- To understand the student's aspirations, corporate goals and the policies of Govt. and design programs in the specific field to meet the overall education needs and develop the skills and competencies accordingly.
- Provide efficient admission counseling, registration, and student support system to demonstrate our commitment to help students and faculty to show that we indeed care for them.
- To create a conducive learning environment.
- Constantly improve systems and processes in accordance with feedbacks and random surveys on student's assessment.
- To provide an educational delivery system that is flexible, technology driven meets the prevailing requirements and is cost effective.

Linkage with Program Mission:

The institute's mission goals are holistically inherited in this program of Dr.M.G.R E & I Online Education. This program delivers required theoretical and industry inputs to students that develops creative thinking to make them experts and professionals in the field. The programs offered allow the learners to learn at their own pace along with pursuing their other professional endeavors. The cost of the programs and provision for scholarship have been designed with objective of spreading mass education to meet needs of all class of learners. Adequate counseling is done for the students to assist them to make an informed decision to choose from a range of varied programs offered by the department. The students' support services are taking timely feedback to ensure timely response and enhance overall quality standards. In all, the programs offered by Dr.M.G.R E & I Online Education ensure continuous education and meeting the needs of all class of learners.

c). Nature of prospective target group of learners

Graduate Adults/ Professional Learners/Experienced Professionals

d). Appropriateness of program to be conducted in Open and Distance Learning mode to acquire specific skills and competence:

Demands of skills and competencies are varying at faster pace, due to competitive and rapid market changes predominately in Small and Medium Enterprises, which urges for provision of flexible, work- integrated, continuous training, learning and development opportunities through Higher Education Institutions. There is a dire need for a paradigm shift in the training approaches in the formal and informal sector for developing skills in concurrence to the societal need. The traditional and formal educational delivery may not achieve this at rapidly changing demand with flexible approach. Provision of appropriate skills may thus be an important intervention to increasing the productivity of employment workforce.

Distance and Online education is more costs effective and can take place while continuing full-time employment.

Given its scope, the program will benefit aspirants seeking to develop skills, improve competency, and build expertise in the fast growing Computing Industry.

Dr.M.G.R E & I as online learning institution plays important role by providing flexible and cost effective education to enhance their productivity skills.

Dr.M.G.R E & I offers outcome based education, having industry centric curriculum. This enables the students to satisfy their scholastic needs and aspirations as the system provides enhanced learning opportunities. The curriculum, pedagogy and assessment process are driven by the desired outcome. Outcome Based Education promises high level of learning for all students as it facilitates the achievement of the outcomes, characterized by its appropriateness to each learner's development level.

A team of faculty & professionals from both regular & distance learning institutes & industry determines the objectives. It is then vetted by board studies, academic councils & other university

standing boards. The program objectives are determined with a view that it meets the requirement of the industry/business that employs our students. Therefore the consistent interaction with the industry becomes necessary to revise and update the program objective to meet the requirement, coupled with environmental factors.

Outcome based education system is a systematic, evaluative process that is implemented to secure learning experiences that are congruent with original goals and objectives; thereby providing a basis for the effectiveness and continuous quality improvement of the Program of study. It focuses on the measurement of outcomes that have taken place based on strategies and actions implemented in the pursuit of achieving a pre-determined objective.

Our Programs have well defined Program Education Objectives (PEOs) and Program Learning Outcomes (PLOs) for its programs. The relationship of PEOs and PLOs are clearly indicated through the mapping of learning outcomes with the established Objective. Each outcome addresses some objective and achievement of outcome indicates the attainment of Objective. The assessment of each learning outcome is done annually to identify that the established learning objectives are achieved. The gaps identified after the analysis are addressed through the properly laid action plan. The results of the annual assessments and other data are used to determine the effectiveness of the Program during the Program review process. It also ensures that outcomes achieved are consistent with the mission of institution, domain and University.

Each course has its specific Objective around which the entire curriculum is built. The Learning Outcomes are the results of the course and must lie in complete harmony with the assigned Objectives. In order to ensure that the objectives and outcomes are in complete synchronization with the course outline, the department uses a list of assessment methods to analyze the output by examining the learners from different aspects. Program Educational Objectives/Goals and Learning Outcome of Business Management Programs have been developed.

Program Outcome

- Implement the Creative and Problem Solving skills in various Real time problems To prepare graduates who will contribute to society as broadly educated, expressive, responsible citizens with proven expertise
- Develop the individual as Entrepreneur in the software fields as Software Programr, Software Engineer, Software Architect, Software Developer etc.
- Select modern computing tools and techniques and use them with dexterity.
- Evaluate, verify, trouble-shoot, test and analyze an existing computer-based system, process, component or program

e) Instructional Design:

Course Curriculum: Institution adopts specialized approach where the task involved in course design & development is assigned to professionals in the particular department of the university and/or external experts. A draft with the objectives in prepared. It is evaluated by Institution who in turn composes a team of experts to have judicious review of the proposed course that it meets the objectives of distance education.

Program Structure: Institution constitutes a team of experts to review the course structure. The review team provides its feedback and recommendations to the concern faculty. In case of any modifications suggested by the review team, the curriculum of the course is re-worked upon.

Study Materials: The study material is Self-Learning (SLM) format, which is the essence of standard distance learning Programs. Thus Institution initiates to develop all materials in SLM format. Experts, both internal & external to write the study material on the specific guidelines laid down by statutory body.

Review by Board of Studies: The course is meticulously reviewed by BOS. Recommendations of BOS are implemented on priority. It also checks & defines the applicability, credit hours, scheme of examination for the course. Approval by Academic Council: Finally, the course is submitted to the Academic council of the University for Final Approval.

Programme structure for -4 Quadrant Approach

The e- Learning material shall have four quadrant approach as per Annexure VI of UGC guidelines 2020.

Study time	Approx. percentage of Credit
Print material including Audio/Video material	55%
Work related exercises practical/Quizzes and Assignments	25%
Through Web conferencing tool/internet based.	20%

Student support service systems.

Our endeavor leads to students overall development of professional competencies, human values, work ethics and spiritual values. Welfare of a student describes the 'health, happiness, and professional growth of the student. Students are counseled both online & face to face as well. It becomes the students endeavor to understand the intricacies of the corporate environment on these

grooming grounds & mentoring forms an indispensable and significant aspect of a student's life at Dr.M.G.R E & I. The changed scenario of the corporate world brings a new gamut of industry expectations from young professionals today. Periodic departmental meetings with all stakeholders further extended to look into the areas of improvements.

Students are supported in all phases of their Academic progression with Dr.M.G.R E & I.

Pre-Joining Support: Students are duly provided information about programs, courses, entry requirements, application procedures, structures, functions, rules, and regulations of the institute, recognition of institute, special features of the programs and so on. Counseling services for deciding what kind of individual support they might need and best way of achieving their academic and career target.

Joining Support: On completion of admission the students are provided with study materials, assignments. The issues related to returning to Academic environment after a long gap is addressed by the institution. The learners are provided with progress on assignments, examinations, Project work and extension of program if student is not able to complete the program in stipulated period. Orientation training is conducted by institution at the beginning of the semester.

On Program Completion: Students are guided on participations in convocations. In additions facilitating to acquire additional knowledge & skills through programs conducted by the institution and its constituents

Student's feedback sessions are conducted for students to share their valuable feedbacks. Feedback is collected on periodical basis during the Academic session. The Online feedback is transparent for the faculties so that the faculty members can improvise. The suggestions from students are also obtained where they can feed their suggestions/complaints for any point of concern. The complaints/suggestions are entertained by different level of hierarchy of the institution.

Academic LMS portal mitigates the challenge of seamless Student –Institution communication. Highly technology enabled platform is available for the students to quote their issue, which are answered by our well trained counselors. Students interact with our counselors either through telephone; email, chats or they directly log into their student's zone & register their complaints. The problems are resolved directly in case of telephonic conversation and chats, however the queries received through mails and through student's login are tried to be resolved within stipulated time. If the queries cannot be resolved at the counselor's end, they are escalated to the concerned department as per the query and are awaited for the response. Once the counselor receives the solution for the requisite problem, they are put in the student's zone of the concerned student.

f) Requirement of the laboratory support and Library Resources:

Our learning resources include a host of self-learning materials that help the learners in gaining knowledge through multiple modes. This way retention and application of knowledge become simple and easy. The components of our learning package are as follows:

- Virtual Labs are provided to supplement IT Courses where students can do Online Practical Sessions, with the help of Simulation based Programing Labs.
- Course material in SLM format: The course material provided to learners is designed as per SLM guidelines by DEB.
- Provision of Reference book: The Institution provides the provision of reference book to students who want to get extra knowledge on a particular subject.
- Personal Contact Program (PCP): The Institution conducts Personal Contact Program (PCP) at weekends to help students interact with the faculty and get their queries and doubts resolved.

- One to One classes: From time to time, the Institution conducts one to one class online for students on program to help students gain leadership skills.
- Webinars
- Recording of seminar / Conference / Workshop available Online
- Guidance by Course coordinator through telephone email & chat rooms: Students are provided guidance by Course coordinator as and when required through telephone, email & chat.
- Online Library access; The students access to online library, which hosts a large number of books in digital format.
- Mentor-mentee concept: Institution believes in strong mentor-mentee concept. Students queries are answered by mentors suitable. This has proved to be very effective tools between Institution & students.
- Special session on technical subjects: Some of the subjects requires extra efforts, therefore extra session are planned for the same.
- Virtual recorded classes: Lectures with their busy schedule ay not spare time during PCP's. The recorded lectures are available.

Occasional Workshops / Guest lecture: The Institution arranges workshop & guest lecture by an industry leader to help students know the view of the industry.

g) Quality assurance mechanism and expected program outcomes:

Dr.M.G.R E & I has constituted Internal Quality Assurance Cell (IQAC), as per the guidelines of National Assessment and Accreditation Council (NAAC) in which academicians, industry representatives and other stakeholders are nominated as members. IQAC has a mandate to review the teaching and learning process. The Primary aim of the IQAC is to develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution.

The Benchmark statement for Master of Computer Applications:

The study of computing at master's degree level is typically characterized by:

- an ability to evaluate the technical, societal and management dimensions of computer systems
- a knowledge and understanding of advanced aspects of computer systems and their applications
- a combination of theory and practice, with practice being guided by theoretical considerations
- the mastery of the practical methodology of the relevant area of computing, whether for general application in software development or in specialized applications relating to the storing, processing and communication of information

The process of regular feedback is carried out to ensure the quality of the Programs. The feedback form is shared per student zone on their learning management system. A few of the criteria questions if the Program fits to enhance their professional goals, to check the program content quality and its relevance, on addressing the queries of students, response rate from students' support team, rating of quality of videos, effectiveness of the examination system, appropriateness of technology, video lectures, and students' overall satisfaction as a distance learner.

Based on students' feedback and internal review of the Programs, the content of the Program is

- reviewed for its relevancy in the industry every 3 years. This is the process followed to ensure the academic excellence and practical application of the Program on demand basis.
- Doubt clearing session: A provision to interact with subject faculties is also facilitated to students. Students can clear their doubts one to one with faculty members.
- Assignments, Case Studies, Project Work: Apart from the main learning material, students are provided with assignments, case studies and project work. These learning components are generally based contemporary situation in the industry and markets.
- Leadership Lecture Series: The Institution conducts Leadership Lecture Series, a face to face

h) Cost Estimate of the Programme and the Provisions:

The course fee per semester is estimated to be Rs.37, 000/- with a onetime admission fee of Rs.25, 000/-. It will be displayed in the official website with any further modifications.

i) Admission Process

The Admission would be processed as per the information provided by the UGC.

