GURU NANAK COLLEGE

(AUTONOMOUS)

Guru Nanak Salai, Velachery, Chennai – 600 042
Re-Accredited at 'A - Grade' by NAAC
(Affiliated to the University of Madras)

MASTER OF COMPUTER APPLICATIONS (MCA)

Two Years MCA Programme
With effect from 2020-2021

Regulations and Syllabus

(For the Candidates admitted in 2020 -2021 and thereafter)

SEMESTER SYSTEM WITH CREDITS

(Effective from the Academic year 2020-2021 and thereafter)

RULES AND REGULATIONS

I. CHOICE BASED CREDIT SYSTEM (CBCS) WITH GRADING

The College follows the CBCS with grades under the semester pattern. Every course paper is provided with a credit point based on the quantum of subject matter, complexity of the content and the hours of teaching allotment. This is done after a thorough analysis of the content of each subject paper by the members of the Board of studies and with the approval of the Academic Council. Students are also offered a variety of Job-oriented courses, Elective courses and courses involving Soft-skills as the part of curriculum. Students can earn extra credits by opting for Massive Open Online Courses (MOOCs) and Certificate Courses.

The evaluation method under CBCS involves a more acceptable grading system that reflects the personality of the student. This is represented as Cumulative Grade Point Average (CGPA) and Grade Point Average (GPA) which are indicators of Academic Performance of the student. It provides students scope for horizontal mobility and empowers them with the flexibility of learning at their convenience.

II. ELIGIBILITY FOR ADMISSION

Candidate who has passed the under-mentioned degree examinations of this University or an examination of other institution recognized by this University as equivalent thereto provided they have undergone the course under 10+2+3 or 11+1+3 or 11+2+2 pattern or shall be eligible for admission to the M.C.A. Degree Course.

Passed B.C.A/B.Sc. in Computer Science /B.Sc in Information Technology or any other equivalent degree OR passed B.Sc/B.Com/BA with Mathematics at 10 + 2 level or at graduation level (with Optional bridge course). Obtained at least 50% of marks (45 % marks in case of candidates belonging to reserved category) in the qualifying examination.

III. DURATION OF THE COURSE

The UG course is of three-year duration with six semesters and the PG course is of two-year duration with four semesters .The odd semester includes the period from June to November and the even semester from December to April. There shall not be less than 90 working days for each semester.

V. COURSE STRUCTURE

The MCA course has 16 core papers of 2-4 credits, 5 Elective papers of 3 credits, 2 Extra-disciplinary paper of 3 credits and a project work of 17 credits.

Internship training is a compulsory component for all the PG courses.

COMPONENTS	M.C.A.			M.B.A.		
	No. of Courses	Credit per Course	Total Credits	No. of Courses	Credit per Course	Total Credits
CORE COURSES INCLUDING PRACTICAL	15	2-4	46	13	4	52
PROJECT	1	17	17	1	8	8
ELECTIVES INCLUDING EXTRA DISCIPLINARY COURSES	7	3	21	8	3	24
SKILL	4	2	8	4	2	8
INTERNSHIP	1	2	2	1	2	2
TOTAL			**94**			**94**

COURSE STRUCTURE

Two Weeks Bridge Courses for MCA

1. Programming in C
2. Problem Solving Techniques
3. Mathematical Foundations of Computer Science.
4. Information Technology
5. Coding Practices

a. MCA Departments are encouraged to offer need based bridge courses and foundation courses to meet prerequisite requirements and academic needs.
b. Based on the qualifications of the students admitted the mentoring team of the department shall recommend to carry out the bridge and foundation courses as mandatory courses for that candidate.
c. Two week bridge courses need to be organized before the commencement of the first semester.
d. Nurturing and evaluation process of bridge and foundation courses is left the respective academic units.

Semester	Subject	Subject Title	Credits	Hrs	CIA	ESE	Total
I	Core-1	Operating Systems	4	5	50	50	100
	Core-2	Advanced Database Management Systems	4	5	50	50	100
	Core-3	Open Source Technologies	4	5	50	50	100
	Elective-1	Elective - I	3	5	50	50	100
	Core-4	Practical - I : ADBMS Lab	2	4	50	50	100
	Core-5	Practical - II : Open Source Technology Lab	2	4	50	50	100
	Soft Skill-1	Language and Communication Skill	2	2	50	50	100
II	Core-6	Data Science using R	4	4	50	50	100
	Core-7	Artificial Intelligence	4	4	50	50	100
	Core-8	DevOps	4	4	50	50	100
	Elective – 2	Elective - II	3	4	50	50	100
	Extra-Disciplinary-I	Statistics for Data Analytics	3	4	50	50	100
	Core-9	Practical - III : Data Science Lab	2	4	50	50	100
	Core-10	Practical - IV : Advanced Java technology Lab	2	4	50	50	100
	Soft Skill-2	Quantitative Aptitude	2	2	50	50	100
III	Core-11	Machine Learning	4	4	50	50	100
	Elective – 3	Elective - III	3	4	50	50	100
	Elective – 4	Elective - IV	3	4	50	50	100
	Elective –V	Elective - V	3	4	50	50	100
	Extra-Disciplinary-II	Software Testing	3	4	50	50	100
	Core-12	Practical - V Robotic Process Automation Lab	2	4	50	50	100
	Core-13	Practical - VI : Advanced Python Lab	2	4	50	50	100
	Soft Skill-3	Data Visualization Tool	2	2	50	50	100
	Internship	During I Year Summer Vacation 4 to 6 Weeks	2				
IV	Core – 14	Latest Technology -1	3	4	50	50	100
	Core – 15	Latest Technology – 2	3	4	50	50	100
	Core – 16	Project and Viva Voce	17	20	20	60+20	100
	Soft Skill-4	Architectural Design using Star UML	2	2	50	50	100
		TOTAL CREDITS	**94**				

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With Effect From 2020-21

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS (MCA)

SEMESTER – I			
Subject	**Subject Title**	**Credits**	**No. of Hours**
Core-1	Operating Systems	4	5
Core-2	Advanced Database Management Systems	4	5
Core-3	Open Source Technologies	4	5
Elective - 1	Elective - I	3	5
Core-4	Practical - I : ADBMS Lab	2	4
Core-5	Practical - II : Open Source Technology Lab	2	4
Soft Skill-1	Language and Communication Skill	2	2
	Total	**21**	**30**

SEMESTER – II			
Subject	**Subject Title**	**Credits**	**No. of Hours**
Core-6	Data Science using R	4	4
Core-7	Artificial Intelligence	4	4
Core-8	DevOps	4	4
Elective – 2	Elective - II	3	4
Extra-Disciplinary-I	Statistics for Data Analytics	3	4
Core-9	Practical - III : Data Science Lab	2	4
Core-10	Practical - IV : Advanced Java technology Lab	2	4
Soft Skill-2	Quantitative Aptitude	2	2
	Total	**24**	**30**

SEMESTER – III			
Subject	**Subject Title**	**Credits**	**No. of Hours**
Core-11	Machine Learning	4	4
Elective – 3	Elective - III	3	4
Elective – 4	Elective - IV	3	4
Elective – 5	Elective - V	3	4
Extra-Disciplinary-II	Software Testing	3	4
Core-12	Practical - V Robotic Process Automation Lab	2	4
Core-13	Practical - VI : Advanced Python Lab	2	4
Soft Skill-3	Data Visualization Tool	2	2
Internship	During I Year Summer Vacation 4 to 6 Weeks	2	
	Total	**21**	**30**

SEMESTER – IV			
Subject	**Subject Title**	**Credits**	**No. of Hours**
Core – 14	Latest Technology -1	3	4
Core – 15	Latest Technology – 2	3	4
Core – 16	Project and Viva-Voce	17	20
Soft Skill-4	Architectural Design using Star UML	2	2
	Total	**23**	**30**

OVERALL	**Credits**	**No. of Hours**
	94	**120**

ELECTIVES

Elective - I	Software Engineering
	Computer Communication and Networking
	Software Project Management
Elective - II	Advanced Java Technology
	Android Applications Development
	PHP with Laravel Framework
Elective - III	Advanced Python
	Object Oriented Analysis, Design and UML
	Design and Analysis of Algorithm
Elective - IV	Robotic Process Automation
	MATLAB Programming
	Visual Programming Using C# And Vb.Net
Elective - V	Cloud Computing
	e-Commerce
	Human Resource Management