Progressive Education Society's Modern of College of Arts, Science & Commerce (Autonomous)

Ganeshkhind Pune 16

Two Years M.Sc. Degree Course in Computer Applications

M.Sc. (Computer Applications)

(Choice based Credit and Semester based Syllabus to be implemented from Academic Year 2022-23)

1) Title of the Course: M.Sc. (Computer Applications)

2) Preamble of the syllabus

The M.Sc. (Computer Applications) program is a combination of computer programming, applications, and information technology courses. The courses introduce techniques of programming, databases, web designing, system analysis, design tools and different computing environments.

Objectives: The main objective of the Program is to produce trained software professionals with hands-on experience on state-of-the art technologies who will be able to handle software challenges in industry as well as academia. In the context with information Technology industry, the objectives of M.Sc. (Computer Applications) course are: -

• To produce knowledgeable and skilled human resources that is employable in IT and ITES.

• To impart knowledge required for planning, designing, and building Complex Application Software Systems as well as to provide support for automated systems or applications.

• To produce entrepreneurs M.Sc. (Computer Applications) Program is of Two Years duration with four semesters. It is a Full Time post graduate Degree Program. The program will be based on Choice-based credit system comprising of total 80 credit points. It is believed that the proposed syllabus as part of the credit-based system will bring a qualitative change in the way M.Sc. (Computer Applications) is taught, which will offer a more enriched learning experience. It aims to provide technology-oriented students with the knowledge and ability to develop creative solutions, and better understand the effects of future developments of computer systems and technology on people and society. The syllabus is about developing skills to learn new technology, grasping the concepts and issues behind its use and the use of computers.

3) Eligibility: A bachelor's degree in science/Technology/Engineering with minimum 50% marks or equivalent for student belonging to Unreserved Category and minimum 45% or equivalent for students belonging to the Reserved Category.

Admission: Admissions will be offered as per the selection procedure / policies adopted by the respective colleges, in accordance with conditions laid down by the Savitribai Phule Pune University. Reservation and relaxation will be as per the government rules.

4) External Students: There shall be no external students.

Modern of College of Arts, Science & Commerce (Autonomous)
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M.Sc. (Computer Applications) Year I Semester 1

Course Code	Course	Teaching Scheme / Week			Examination Scheme and Marks			Credit	
		Theory	Tutorial	Practical	IE	CE	Total	Th	Pr
22-CA-CCTP-1	Web Technology	04	-	-	30	70	100	04	-
22-CA-CCTP-2	Advance Databases	04	-	-	30	70	100	04	-
22-CA-CCTP-3	Design and Analysis of Algorithm	04	-	-	30	70	100	04	-
22-CA-CBOTP-1 A	Object Oriented Programming with C++	02			15	35	50	02	-
22-CA-CBOPP-1 A	Object Oriented Programming with C++ Laboratory			04	15	35	15	-	02
OR									
22-CA-CBOTP-1B	ASP.NET	02	-	-	15	35	50	02	-
22-CA-CBOPP-1B	ASP.NET Laboratory	-	-	04	15	35	50	-	02
OR									
22-CA-CBOTP-1C	Software Testing (Manual)	02	-	-	15	35	50	02	-
22-CA-CBOPP-1 C	Software Testing (Manual) Laboratory	-	-	04	15	35	50	-	02
22-CA-CCPP-1	Web Technology Laboratory	-	-	08	30	70	100	-	04
Total Credits								14	06
Total		14	-	12	150	350	500	20	

IE: Internal Evaluation CE: College Evaluation TH: Theory PR: Practical

Extra Credit (Mandatory)			
Course Type	Course Code	Course Name	Credit
Extra Credit Theory Paper	22-191	Human Rights	1
	22-192	Introduction to Cyber Security/ Information security	1

Modern of College of Arts, Science & Commerce (Autonomous)
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M.Sc. (Computer Applications) Year I Semester II

Course Code	Course	Teaching Scheme / Week (hrs)			Examination Scheme and Marks			Credit	
		Theory	Tutorial	Practical	IE	CE	Total	Th	Pr
22-CA-CCTP-4	Data Mining and Ware Housing	04	-	-	30	70	100	04	-
22-CA-CCTP-5	Operating Systems	04	-	-	30	70	100	04	-
22-CA-CCTP-6	Computer Networks	04	-	-	30	70	100	04	-
22-CA-CBOTP- 1A	Java Programming	02			15	35	50	02	-
22-CA-CBOPP-1A	Java Programming Laboratory			04	15	35	15	-	02
OR									
22-CACBOTP-2 B	Web Services	02	-	-	15	35	50	02	-
22-CACBOPP-2B	Web Services Laboratory	-	-	04	15	35	50	-	02
OR									
22-CA-CBOTP-1C	Software Testing (Automated)	02	-	-	15	35	50	02	-
22-CACBOPP-2C	Software Testing (Automated) Laboratory	-	-	04	15	35	50	-	02
22-CA-CCPP-2	Data Mining and Ware Housing Laboratory	-	-	08	30	70	100	-	04
Total Credits								14	06
Total		14	-	12	150	350	500	20	

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Extra Credit (Mandatory)			
Course Type	Course Code	Course Name	Credit
Extra Credit Theory Paper	22-291	Human Rights	1
	22-292	Introduction to Cyber Security/ Information security	1

Course Code	Course	Teaching Scheme / Week			Examination Scheme and Marks			Credit	
		Th	Tutorial	Practical	IE	CE	Total	Th	Pr
23-CA-CCTP-7	Mobile Application Development Using Android	04	-	-	30	70	100	04	-
23-CA-CCTP-8	Internet of Things	04	-	-	30	70	100	04	-
23-CA-CCTP-9	Artificial Intelligence	04	-	-	30	70	100	04	-
23-CA-CBOTP-3 A	Python Programming	02			15	35	50	02	-
23-CA-CBOPP-3A	Python Programming Laboratory			04	15	35	15	-	02
OR									
23-CA-CBOTP-3 B	Big Data	02	-	-	15	35	50	02	-
23-CA-CBOPP-3B	Big Data Laboratory	-	-	04	15	35	50	-	02
OR									
23-CA-CBOTP-3 C	Django	02	-	-	15	35	50	02	-
23-CA-CBOPP-3C	Django Laboratory	-	-	04	15	35	50	-	02
23-CA-CCPP-3	Android Programming Laboratory	-	-	08	30	70	100	-	04
Total Credits								14	06
Total		14	-	12	150	350	500	20	

IE: Internal Evaluation CE: College Evaluation TH: Theory PR: Practical

Extra Credit (Mandatory)			
Course Type	**Course Code**	**Course Name**	**Credit**
Extra Credit Theory Paper	23-392	Introduction to Cyber Security/ Information security-III	1
	23-394	Skill Development-I	2
	23-395	Introduction to Constitution	2

Modern of College of Arts, Science & Commerce (Autonomous) Ganeshkhind Pune 16 M.Sc. (Computer Applications) Year I Semester IV				
Course Code	Course	Examination Scheme and Marks		
		IE	UE	Total
23-CA-CCUP	Industrial Training/On Campus Project	04 150(marks)	16 350(marks)	20 500(marks)
Total Credits				20

Extra Credit (Mandatory)			
Course Type	Course Code	Course Name	Credit
Extra Credit Theory Paper	23-492	Introduction to Cyber Security/ Information security-IV	1
	23-494	Skill Development-II	2

IE: Internal Evaluation CE: College Evaluation CA: M. Sc. (Computer Applications)

Note: I. Each credit will be equivalent to 15 clock hours of teaching

II. 75% of the credits (60) is compulsory from the core subject and 25% i.e., 20 credits from any other department than the one where he/she is registered. In case student wishes to take all courses from the department he/ she can also do so.

III. Credits: It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.

IV. Refer detailed rules and regulations for credit and semester system in postgraduate department/centres of the university with effect from academic year 2018-19 which is displayed on the website of the university.

V. CA-CCUP-Core Compulsory University Project: Students must undergo full time industrial training/Institute-level project.

VI. According to university guidelines any Science, Technology, and Engineering graduates is eligible to take admission for M.Sc. (Computer Application). However, by considering the eligibility of the M.Sc. (Computer Application) course it is necessary to complete the bridge course to become familiar with technology concepts more clearly. Specifically, Non-IT graduates who are not familiar with programming languages, Database Technology need to undergo the bridge course to learn the various courses of M.Sc. (Computer Application).

VII. Each student will have attend lectures/laboratory sessions and appear for examinations for mandatory courses in Human rights, Cyber Security/Information security and skill development courses arranged by the Institution and earn required credits in each such courses. The grades obtained by the students will be communicated by the respective Institute to the University. However, these grades will not be considered for CGPA calculations. A degree will be only awarded to the students by the University only after completion of all such courses in addition to the courses mentioned for all the semesters.

VIII. For Industrial training in semester IV, one faculty member will be assigned maximum 05 students.