Progressive Education Society's

Modern College Of Arts, Science & Commerce (Autonomous)

Ganeshkhind, Pune – 411016

Three Year Degree Program in

Bachelor of Computer Applications (Science): B.C.A. (Science)

(Faculty of Science & Technology)

F.Y.B.C.A. (Science)

Choice Based Credit System Syllabus

To be implemented from Academic Year 2022-2023

Title of the Course: Bachelor of Computer Applications (Science)

Preamble of the syllabus

The B.C.A. (Science) program is a combination of computer and applied courses from science stream. The computer related courses introduce techniques of programming, databases, web designing, system analysis, design tools and different computing environments. The applied courses include mathematics, statistics and electronics that provide theoretical and practical foundation for the learner.

Objectives:

- 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.
- It helps students analyse the requirements for system development and exposes students to business software and information systems.
- This course provides students with options to specialize in legacy application software, system software or mobile applications.
- To produce entrepreneurs

Introduction

The Program is of Three Years duration with six semesters. It is a Full Time Degree Program. The program will be based on Choice-based credit system comprising 132+8 (140) credit points.

Eligibility for Admission:

Any candidate who has passed the XII standard Examination in Science stream from, Maharashtra State Board of Secondary and Higher Secondary Education or equivalent Board of Examination, is eligible for admission to the First Year of this program.

OR

Passed Three Year Diploma Course approved by the DTE, Maharashtra State or Equivalent authority.

Lateral Entry to SYBCA

Any candidate who has passed three Year Diploma course in Computer Engineering/ Technology/ Information Technology/ Electronics Communication/ Electronics Telecommunications/ Electronics approved by the DTE, Maharashtra State or Equivalent authority is eligible for admission to direct second year (SYBCA) of this program.
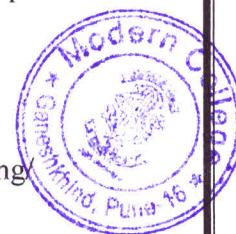
Semester -I F.Y. B.C.A (Science)						
Course Code	**Course Title**	**Credits**		**Evaluation**		
		T	**P**	**CIA**	**SE**	**Total**
22-BCA-111	Fundamentals Of Computers	4	-	30	70	100
22- BCA-112	Problem Solving And C Programming	4	-	30	70	100
22- BCA -113	Basics Of Web Designing	4	-	30	70	100
22- BCA -114	Applied Mathematics	4	-	30	70	100
22- BCA -115	Fundamentals Of Computers Laboratory	-	1.5	15	35	50
22- BCA -116	Programming In C Laboratory	-	1.5	15	35	50
22- BCA -117	Basics Of Web Designing Laboratory	-	1.5	15	35	50
22- BCA -118	Applied Mathematics Laboratory	-	1.5	15	35	50
	Total	**16**	**6**	**180**	**420**	**600**

Total Credits: [16(TH) + 6 (PR)] = 22

TH: Theory **PR**: Practical **CIA**: Continuous Internal Assessment **SE**: Semester Examination

Semester -II F.Y. B.C.A (Science)						
Course Code	**Course Title**	**Credits**		**Evaluation**		
		T	**P**	**CIA**	**SE**	**Total**
22-BCA-121	Computer Organization	4	-	30	70	100
22-BCA-122	Advanced C Programming	4	-	30	70	100
22-BCA-123	Software Engineering	4	-	30	70	100
22-BCA-124	Database Management Systems –I	4	-	30	70	100
22-BCA-125	Computer Organization Laboratory	-	1.5	15	35	50
22-BCA-126	Advance C Programing Laboratory	-	1.5	15	35	50
22-BCA-127	Software Engineering Documentation Laboratory	-	1.5	15	35	50
22-BCA-128	Database Management Systems -I Laboratory	-	1.5	15	35	50
	Total	**16**	**6**	**180**	**420**	**600**

Total Credits: [16(TH) + 6 (PR)] = 22

TH: Theory **PR**: Practical **CIA**: Continuous Internal Assessment **SE**: Semester Examination

Semester -III S.Y. B.C.A (Science)						
Course Code	**Course Title**	**Credits**		**Evaluation**		
		T	**P**	**CIA**	**SE**	**Total**
23-BCA-231	Data Structures	4	-	30	70	100
23-BCA-232	Database Management Systems – II	4	-	30	70	100
23-BCA-233	Web Technology using PHP	4	-	30	70	100
23-BCA-234	Data Structures Laboratory	-	2	15	35	50
23-BCA-235	Database Management Systems - II Laboratory	-	2	15	35	50
23-BCA-236	Web Technology using PHP Laboratory	-	2	15	35	50
	Environmental Science I	2	-	15	35	50
	Language –I	2	-	15	35	50
	Total	**16**	**6**	**165**	**385**	**550**

Total Credits: [16(TH) + 6 (PR)] = 22

TH: Theory **PR**: Practical **CIA**: Continuous Internal Assessment **SE**: Semester Examination

Semester -IV S.Y. B.C.A (Science)						
Course Code	**Course Title**	**Credits**		**Evaluation**		
		T	**P**	**CIA**	**SE**	**Total**
23-BCA-241	Core Java	4	-	30	70	100
23-BCA-242	Object Oriented Programming in PHP	4	-	30	70	100
23-BCA-243	Object Oriented Software Engineering	4	-	30	70	100
23-BCA-244	Core Java Laboratory	-	2	15	35	50
23-BCA-245	Object Oriented Programming in PHP Laboratory	-	2	15	35	50
23-BCA-246	Python Programming Laboratory	-	2	15	35	50
	Environmental Science Awareness Course -II	2	-	15	35	50
	Language –II	2	-	15	35	50
Total		**16**	**6**	**165**	**385**	**550**

Total Credits: [16(TH) + 6 (PR)] = 22

TH: Theory **PR**: Practical **CIA**: Continuous Internal Assessment **SE**: Semester Examination

Semester -V T.Y. B.C.A (Science)						
Course Code	**Course Title**	**Credits**		**Evaluation**		
		T	**P**	**CIA**	**SE**	**Total**
24-BCA-351	Advanced Java	4	-	30	70	100
24-BCA-352	Data Science	4	-	30	70	100
24-BCA-353	Principles of Operating Systems	4	-	30	70	100
24-BCA-354	Artificial Intelligence	2	-	15	35	50
24-BCA-355	Computer Network	2	-	15	35	50
24-BCA-356	Advanced Java Laboratory	-	2	15	35	50
24-BCA-357	Data Science Laboratory	-	2	15	35	50
24-BCA-358	Operating Systems Laboratory	-	2	15	35	50
Total		**16**	**6**	**165**	**385**	**550**

Total Credits: [16(TH) + 6 (PR)] = 22

TH: Theory **PR**: Practical **CIA**: Continuous Internal Assessment **SE**: Semester Examination

Semester -VI T.Y. B.C.A (Science)						
Course Code	**Course Title**	**Credits**		**Evaluation**		
		T	**P**	**CIA**	**SE**	**Total**
24-BCA-361	Android Programming	4	-	30	70	100
24-BCA-362	Data Mining	4	-	30	70	100
24-BCA-363	Internet of Things (IoT)	4	-	30	70	100
24-BCA-364	Blockchain Technology	2	-	15	35	50
24-BCA-365	Cloud Computing	2	-	15	35	50
24-BCA-366	Android Programming Laboratory	-	2	15	35	50
24-BCA-367	IoT & Blockchain Technology Laboratory	-	2	15	35	50
24-BCA-367	Project Laboratory	-	2	15	35	50
Total		**16**	**6**	**165**	**385**	**550**

Total Credits: [16(TH) + 6 (PR)] = 22

TH: Theory **PR**: Practical **CIA**: Continuous Internal Assessment **SE**: Semester Examination