

***Progressive Education Society's***  
**Modern College of Arts, Science and**  
**Commerce,**  
**Shivajinagar, Pune 5**  
(An Autonomous College Affiliated to Savitribai Phule Pune University)

## **Framework of Syllabus**

**For**

**For B.C.A. (Science)**

**(2019-20 Course)**

**(with effect from 2019-20)**

**CIA:** Continuous Internal Evaluation

### Semester 1 (First Year)

Course Type	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	End Sem Exam	Total
CCT-1	19ScBCAU101	Discrete Mathematics-I	4	4	40	60	100
CCT-2	19ScBCAU102	Programming in 'C' and Problem-Solving Methods	4	4	40	60	100
CCT-3	19ScBCAU103	Fundamentals of Statistics	4	4	40	60	100
CCT-4	19ScBCAU104	Fundamentals of Web Technologies (HTML, CSS)	4	4	40	60	100
CCP-1	19ScBCAU105	Lab I: Programming in 'C' and Problem-Solving Methods	2	2	40	60	100
CCP-2	19ScBCAU106	Lab II: Fundamentals of Web Technologies (HTML, CSS)	2	2	40	60	100
CCP-3	19ScBCAU107	Lab III: Advanced Spreadsheet Concepts	2	2	40	60	100
<b>Total</b>				<b>22</b>	<b>120</b>	<b>180</b>	<b>300</b>
SECT-1	19CpPedU101	Physical Education – I	1	0.5	20	30	50
	Extra credentials	Activity Based Learning –I (MOOC or IIT Spoken Tutorial like courses) Introduction to Computers, HTML					

### Semester 2 (First Year)

Course Type	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	End Sem Exam	Total
CCT-5	19ScBCAU201	Discrete Mathematics-II	4	4	40	60	100
CCT-6	19ScBCAU202	Advanced 'C' Programming	4	4	40	60	100
CCT-7	19ScBCAU203	Computer Organization	4	4	40	60	100
CCT-8	19ScBCAU204	Database System-I (Postgre SQL)	4	4	40	60	100
CCP-4	19ScBCAU205	Lab I: Advanced 'C' Programming	2	2	40	60	100
CCP-5	19ScBCAU206	Lab II: Database System-I (PostgreSQL)	2	2	40	60	100
CCP-6	19ScBCAU207	Lab III: Discrete Mathematics Tutorial	2	2	40	60	100
<b>Total</b>				<b>22</b>	<b>120</b>	<b>180</b>	<b>300</b>
SECT-2	19CpPedU201	Physical Education – II	1	0.5	20	30	50
	Extra Credentials	Activity based Learning -II (MOOC or IIT Spoken Tutorial like courses), Programming in 'C'					

### Semester 3 (Second Year)

Course Type	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	End Sem Exam	Total
CCT-9	19ScBCAU301	Data Structures	4	4	40	60	100
CCT-10	19ScBCAU302	Database System-II	4	4	40	60	100
CCT-11	19ScBCAU303	Software Engineering Practices	4	4	40	60	100
CCT-12	19ScBCAU304	Operating System Concepts	4	4	40	60	100
CCP-7	19ScBCAU305	Lab I: Data Structures	2	2	40	60	100
CCP-8	19ScBCAU306	Lab II: Database System-II	2	2	40	60	100
CCP-9	19ScBCAU307	Lab III: Case studies and Mini Project	2	2	40	60	100
<b>Total</b>				<b>22</b>	<b>120</b>	<b>180</b>	<b>300</b>
AEC-1	19CpEnvU301	Environmental Science – I		1	20	30	50
AEC-2	19CpEngU302	Business Communication-I		2.5	40	60	100
	Extra Credentials	Activity based Learning -III (MOOC or IIT Spoken Tutorial like courses: RDBMS)					

### Semester 4 (Second Year)

Course Type	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	End Sem Exam	Total
CCT-13	19ScBCAU401	Programming in C++	4	4	40	60	100
CCT-14	19ScBCAU402	Web Technologies-I(PHP)	4	4	40	60	100
CCT-15	19ScBCAU403	Computer Networks and Cyber Security	4	4	40	60	100
CCT-16	19ScBCAU404	Object Oriented Software Engineering	4	4	40	60	100
CCP-10	19ScBCAU405	Lab I: Programming in C++	2	2	40	60	100
CCP-11	19ScBCAU406	Lab II: Web Technologies-I(PHP)	2	2	40	60	100
CCP-12	19ScBCAU407	Lab-III: Mini Project	2	2	40	60	100
<b>Total</b>				<b>22</b>	<b>120</b>	<b>180</b>	<b>300</b>
AEC-3	19CpEnvU401	Environmental Science – II*		1	20	30	50
AEC-4	19CpEngU402	Business Communication-II		2.5	40	60	100
	Extra Credentials	Activity based Learning -IV (MOOC or IIT Spoken Tutorial like courses C++)					

### Semester 5 (Third Year)

Course Type	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	End Sem Exam	Total
DSET-1	19ScBCAU501	Programming in Core JAVA	12	12	40	60	100
DSET-2	19ScBCAU502	Web Technologies-II (Java Script, AJAX, XML)			40	60	100
DSET-3	19ScBCAU503	Programming			40	60	100

		Language(Python)						
	19ScBCAU504	2D Animation with Action Script			40	60	100	
DSET-4	19ScBCAU505	Software Development Engineering in Testing	4	4	40	60	100	
	19ScBCAU506	Data Mining and Data Warehousing			40	60	100	
DSEP1 DSEP2 DSEP3	19ScBCAU507	Lab I: Programming in Core JAVA	6	6	40	60	100	
	19ScBCAU508	Lab II: Web Technologies-II (Java Script, AJAX, XML)			40	60	100	
	19ScBCAU509	Lab III: Programming Language(Python)			40	60	100	
	19ScBCAU510	Lab IV: 2D Animation with Action Script			40	60	100	
<b>Total</b>					<b>22</b>	<b>120</b>	<b>180</b>	<b>300</b>
	Extra Credentials	Activity based Learning -V (MOOC or IIT Spoken Tutorial like courses), Programming in JAVA						

### Semester 6 (Third Year)

Course Type	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	End Sem Exam	Total	
DSET-5 DSET-6 DSET-7	19ScBCAU601	Programming in Advanced JAVA	12	12	40	60	100	
	19ScBCAU602	Mobile Technologies (Android Development)			40	60	100	
	19ScBCAU603	Internet of Things (IoT)			40	60	100	
	19ScBCAU604	Cloud and Grid Computing			40	60	100	
DSET-8 DSET-9	19ScBCAU605	Software Project Management	4	4	40	60	100	
	19ScBCAU606	Research Methodology			40	60	100	
DSEP4 DSEP5 DSEP6	19ScBCAU607	Lab I: Programming in Advanced JAVA	6	6	40	60	100	
	19ScBCAU608	Lab II: Mobile Technologies (Android Development), Mongo DB			40	60	100	
	19ScBCAU609	Lab III: Internet of Things(IoT)			40	60	100	
	19ScBCAU610	Lab IV: Project Work			40	60	100	
<b>Total</b>					<b>22</b>	<b>120</b>	<b>180</b>	<b>300</b>
	Extra Credentials	Activity based Learning -VI (MOOC or IIT Spoken Tutorial like courses), JAVA Business Application						