



**M. C. E. Society's  
School of Commerce, Management & Computer  
Studies**

**Constituent college of**

**DR. P. A. Inamdar University, Pune**

**FACULTY OF COMPUTER APPLICATIONS &  
INFORMATION TECHNOLOGY**

**Bachelor of Computer Applications (BCA)**

**SYLLABUS STRUCTURE**

**BCA Full time Program (03 Years – Degree / 04 years - Honors -**

**Choice Based Credit System (CBCS) &**

**Outcome Based Education (OBE) Pattern**

**as per UGC and NEP-2020 Guidelines**

**1. SYLLABUS STRUCTURE OF BACHELOR OF COMPUTER APPLICATION (BCA)  
BCA 1<sup>st</sup> YEAR (SEM -I)**

<b>Semester I</b>							
<b>Sr. No.</b>	<b>Subject Name</b>	<b>Paper Code</b>	<b>Course Code</b>	<b>Course Type</b>	<b>Credit</b>	<b>IA</b>	<b>EA</b>
1	Computer Fundamentals & Electronics	BCA23101	C101	MSC	4	30	70
2	Programming Paradigms & Concepts Using C	BCA23102	C102	MSC	4	30	70
3	Computer Network	BCA23103	C103	MSC	4	30	70
4	Open Elective1- (Interdisciplinary / Minor Stream Course)	BCA23104	ID1	MiSC	3	25	50
5	Ability Enhancement Course 1 - Functional English-I	BCA23105	AEC1	AEC	3	25	50
6	Practical / Lab - C Programming Language	BCA23106	P102	MSC	2	20	30
7	Practical / Lab - Digital Electronics	BCA23107	P101	MSC	2	20	30
8	Skill Enhancement Course Elective 1 Handling Of Spreadsheet (MS-Excel)	BCA23108	SEC1	SEC	2	20	30
<b>TOTAL</b>					<b>24</b>	<b>600</b>	

**BCA 1<sup>st</sup> YEAR (Sem -II)**

<b>Semester II</b>							
<b>Sr. No.</b>	<b>Subject Name</b>	<b>Paper Code</b>	<b>Course Code</b>	<b>Course Type</b>	<b>Credit</b>	<b>IA</b>	<b>EA</b>
1	Data Structure using C	BCA23201	C201	MSC	4	30	70
2	Web Technologies HTML, CSS & JS	BCA23202	C202	MSC	4	30	70
3	Software Engineering -I	BCA23203	C203	MSC	4	30	70
4	Open Elective 2 -(Interdisciplinary / Minor Stream Course)	BCA23204	ID2	MiSC	3	25	50
5	Ability Enhancement Course-2:Functional English -II	BCA23205	AEC2	AEC	3	25	50
6	Practical / Lab - Data Structure using C	BCA23206	P201	MSC	2	20	30
7	Practical / Lab - Web Technologies HTML, CSS & JS	BCA23207	P202	MSC	2	20	30
8	Skill Enhancement Course Elective 2 Handling of Word Processing & Presentations	BCA23208	SEC2	SEC	2	20	30
<b>TOTAL</b>					<b>24</b>	<b>600</b>	

**BCA 2<sup>nd</sup> YEAR (Sem-III)**

<b>Semester III</b>							
<b>Sr. No</b>	<b>Subject Name</b>	<b>Paper Code</b>	<b>Course Code</b>	<b>Course Type</b>	<b>Credit</b>	<b>IA</b>	<b>EA</b>
1	Database Management System (DBMS )	BCA23301	C301	MSC	4	30	70
2	Object Oriented Programming using C++	BCA23302	C302	MSC	4	30	70
3	Operating System Concepts & Introduction to Linux	BCA23303	C303	MSC	4	30	70
4	Open Elective 3 - Discrete Mathematic (Interdisciplinary / Minor Stream Course)	BCA23304	ID3	MiSC	3	25	50
5	Skill Enhancement Course Elective 3 Visualization Tool (Power BI/ Tableau)	BCA23305	SEC3	SEC	3	25	50
6	Practical / Lab - OOP C++	BCA23306	P303	MSC	2	20	30
7	Practical / Lab - DBMS - Lab	BCA23307	P301	MSC	2	20	30
8	Value added course Elective 1 Indian Environment Sustainable Development & Living	BCA23308	VAC1	VAC	2	20	30
<b>TOTAL</b>					<b>24</b>	<b>600</b>	

**BCA 2<sup>nd</sup> YEAR (Sem-IV)**

<b>Semester IV</b>							
<b>Sr. No.</b>	<b>Subject Name</b>	<b>Paper Code</b>	<b>Course Code</b>	<b>Course Type</b>	<b>Credit</b>	<b>IA</b>	<b>EA</b>
1	Advanced Database Management System (ADBMS)	BCA23401	C401	MSC	4	30	70
2	Java Programming	BCA23402	C402	MSC	4	30	70
3	Software Engineering-II : Object Oriented Software Engineering	BCA23403	C403	MSC	4	30	70
4	Open Elective 4 -(Interdisciplinary/Minor Stream Course)	BCA23404	ID4	MiSC	3	25	50
5	Value added course Elective 2	BCA23405	VAC2	VAC	3	25	50
6	Practical / Lab - Java Programming	BCA23406	P402	MSC	2	20	30
7	Practical / Lab - Advanced DBMS	BCA23407	P401	MSC	2	20	30
8	Value added course Elective 3	BCA23408	VAC3	AC	2	20	30
<b>TOTAL</b>					<b>24</b>	<b>600</b>	

**BCA 3rd YEAR (Sem-V)**

<b>Semester V</b>							
<b>Sr. No</b>	<b>Subject Name</b>	<b>Paper Code</b>	<b>Course Code</b>	<b>Course Type</b>	<b>Credit</b>	<b>IA</b>	<b>EA</b>
1	Advanced Web Technology using PHP (MVC framework)	BCA23501	C501	MSC	4	30	70
2	Python Programing	BCA23502	C502	MSC	4	30	70
3	Artificial Intelligence	BCA23503	C503	MSC	4	30	70
4	Software Testing	BCA23504	C504	MiSC	3	25	50
5	Multi-Disciplinary Elective Course 1	BCA23505	MDC01	MDC	3	25	50
6	Mini project	BCA23506	ITP1	MSC	2	20	30
7	Practical / Lab - Advanced Web Technologies using PHP (MVC)	BCA23507	P501	MSC	2	20	30
8	Practical / Lab - Python Programing	BCA23508	P502	VAC	2	20	30
<b>TOTAL</b>					<b>24</b>	<b>600</b>	

**BCA 3rd YEAR (Sem-VI)**

<b>Semester VI</b>							
<b>Sr. No</b>	<b>Subject Name</b>	<b>Paper Code</b>	<b>Course Code</b>	<b>Course Type</b>	<b>Credit</b>	<b>IA</b>	<b>EA</b>
1	Data Science using Python	BCA23601	C601	MSC	4	30	70
2	Mobile Application Development	BCA23602	C602	MSC	4	30	70
3	Data Warehousing - BigData	BCA23603	C603	MSC	3	25	50
4	Multi-Disciplinary Elective Course 2	BCA23604	MDC02	MDC	3	25	50
5	Major Project	BCA23605	ITP2	MSC	6	75	75
6	Practical / Lab - Data Science using Python	BCA23606	P601	MSC	2	20	30
7	Practical / Lab - Mobile Application Development	BCA23607	P602	VAC	2	20	30
<b>TOTAL</b>					<b>24</b>	<b>600</b>	

**BCA 4th YEAR (Sem-VII)**

<b>Semester VII</b>							
<b>Sr. No</b>	<b>Subject Name</b>	<b>Paper Code</b>	<b>Course Code</b>	<b>Course Type</b>	<b>Credit</b>	<b>IA</b>	<b>EA</b>
1	ASP.Net using C#	BCA23701	C701	MSC	4	30	70
2	Machine Learning	BCA23702	C702	MSC	4	30	70
3	Major Project- II	BCA23703	ITP703	SEC	4	50	50
4	Practical / Lab - Machine Learning	BCA23704	L702	MSC	2	20	30
5	Practical / Lab - ASP.Net using C#	BCA23705	L701	MSC	2	20	30
6	Research Subject1 / Honors Subject1 / Industry Specialized subject1	BCA23706	Hn01	MSC	4	50	50
7	Research Subject2 / Honors Subject2 / Industry Specialized subject2	BCA23707	Hn02	MSC	4	50	50
<b>TOTAL</b>					<b>24</b>	<b>600</b>	

**BCA 4Th YEAR (Sem-VIII)**

<b>Semester VIII</b>							
<b>Sr. No</b>	<b>Subject Name</b>	<b>Paper Code</b>	<b>Course Code</b>	<b>Course Type</b>	<b>Credit</b>	<b>IA</b>	<b>EA</b>
1	Cyber Laws and Intelligent Property Rights	BCA23801	C801	MSC	4	30	70
2	Advanced Artificial Intelligence	BCA23802	C802	MSC	4	30	70
3	Practical / Lab - Advanced AI	BCA23803	L802	MSC	2	20	30
4	Research subject3 / Honors Subject3 / Industry Specialized subject3	BCA23804	Hn803	MSC	4	30	70
5	Research subject4 / Honors Subject3 / Industry Specialized subject4	BCA23805	Hn804	MSC	4	30	70
6	Internship - Research project / Honors Project / Industry Project	BCA23806	ITP804	MSC	6	150	150
<b>TOTAL</b>					<b>24</b>	<b>600</b>	