

**Symbiosis Institute of Computer Studies and Research, Pune**  
**Bachelor of Computer Applications**  
**Programme Structure 2020-23**

1.	<b>OBJECTIVE</b>	BCA offers the prequalification for professionals heading for smart career in the IT field, which measures up to international standards. On completing this course one can do higher studies such as MCA, MBA etc., in any UGC recognized universities or in any other reputed institution in India or abroad.						
2.	<b>DURATION MONTHS</b>	(IN)	36 (Full Time)					
3.	<b>INTAKE</b>	60						
4.	<b>RESERVATION</b>	I. Within the sanctioned intake	a) SC (In Percentage)	b) ST (In Percentage)	c) Differently abled (In Percentage)	d) Defence (In Percentage)	e) Industry Sponsored (In Percentage)	f) Defence Special (In Percentage)
			15	7.5	3	5	0	0
		II. Over and above the sanctioned intake	a) Kashmiri Migrants (In Seats)		b) International Students (In Percentage)			
			2		15			
5.	<b>ELIGIBILITY</b>	Candidate should have passed Standard XII (10+2) or equivalent government approved diploma in Engineering/ Technology from any recognized Board with a minimum of 50% marks (45% for SC/ST). A candidate who has appeared for his/her Standard XII (10+2) or equivalent government approved diploma in Engineering/ Technology examination can apply. However, his/ her admission will be subject to obtaining a minimum of 50% marks (45% for SC/ST) A candidate who has completed qualifying qualification from any Foreign Board /University must obtain an equivalence certificate from Association of Indian Universities (AIU).						
6.	<b>SELECTION PROCEDURE</b>	Symbiosis Entrance Test, Personal Interaction and Writing Ability Test (PI-WAT)						
7.	<b>MEDIUM OF INSTRUCTION</b>	OF	English					
8.	<b>PROGRAMME PATTERN</b>	Semester						
9.	<b>COURSE SPECIALIZATION</b>	&	As per Annexure A					
10.	<b>FEE</b>		<b>Academic Fee p.a</b>	<b>Institute Deposit</b>	<b>Total</b>			
		<b>Indian Students</b>	165000	10000	175000			
		<b>International Students (USD equivalent to INR)</b>	250000	10000	260000			

11.	<b>ASSESSMENT</b>	All internal courses will have 100% component as internal evaluation at the institute level. All external courses will have 40% internal component and 60% external component [University] examination.
12.	<b>STANDARD OF PASSING</b>	The assessment of students for each examination is done, based on relative performance. Maximum Grade Point (GP) is 10 corresponding to O (Outstanding). For all courses, a student is required to pass both internal and external examination separately with a minimum Grade Point of 4 corresponding to Grade P. Students securing less than 40% absolute marks in each head of passing will be declared FAIL. The University awards a degree to the student who has achieved a minimum CGPA of 4 out of maximum of 10 CGPA for the programme.
13.	<b>AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE</b>	Bachelor of Computer Applications will be awarded at the end of semester VI examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA.

#### 14. NATURE WISE DISTRIBUTION OF CREDITS

Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
1	18	0	0	0	0	1*	18
2	20	0	0	0	0	1*	20
3	10	12	0	0	0	0	22
4	14	14	0	0	0	0	28
5	4	12	0	0	0	0	16
6	0	16	0	0	0	0	16
<b>Total</b>	<b>66</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>120</b>

\* Satisfactory completion of the non letter grade course 'Integrated Disaster Management' is mandatory for award of degree.

Programme Structure is approved by the Academic Council subject to its norms & conditions. Any provision in the Programme Structure which violates the basic rules & regulations is deemed to be termed "Null & Void".

Head-Academics

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**Annexure A**

Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
<b>Semester : 1</b>							
<b>Generic Core Courses</b>							
T3586	0301210101	Web Technologies		4	100	0	100
T3593	0301210102	Computational Thinking		4	40	60	100
T2495	0301210103	Business Communication		2	50	0	50
T3322	0301210104	Elements of Mathematics		2	20	30	50
T3244	0301210105	Introduction to Database Management System		2	20	30	50
T3213	0301210106	Introduction to Operating System		2	20	30	50
T3198	0301210107	Introduction to Python		2	20	30	50
T4005	0301210108	Integrated Disaster Management *		0	0	0	Non Letter Grade
<b>Total</b>				<b>18</b>	<b>270</b>	<b>180</b>	<b>450</b>
<b>Semester : 2</b>							
<b>Generic Core Courses</b>							
T3610	0301210201	Applications of Spreadsheets in Business		4	100	0	100
T3206	0301210202	Advanced Programming in Python		2	20	30	50
T3209	0301210203	Data Structures		2	20	30	50
T3200	0301210204	Linux Shell Scripting		2	20	30	50
T3224	0301210205	Network Essentials		2	20	30	50
T3205	0301210206	Web Development using CMS		2	50	0	50
F0002	0301210207	Flexi-Credit Course		2	50	0	50
T3605	0301210208	Elements of System and Software Development		2	20	30	50
T3609	0301210209	Structured Query Language		2	20	30	50
T2883	0301210210	Core Environmental Studies *		0	0	0	Non Letter Grade
<b>Total</b>				<b>20</b>	<b>320</b>	<b>180</b>	<b>500</b>
<b>Semester : 3</b>							
<b>Generic Core Courses</b>							
T3202	0301210301	Object Oriented Programming		4	40	60	100
T3595	0301210302	Design and Implementation of Algorithms		4	40	60	100
T3474	0301210303	Web Development using Python		2	20	30	50
<b>Total</b>				<b>10</b>	<b>100</b>	<b>150</b>	<b>250</b>
<b>Generic Elective Courses Group</b>							
T3606	0301210304	Software Engineering Practices		4	40	60	100

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T3596	0301210305	Real Time Operating System		4	40	60	100
T3486	0301210306	Network Infrastructure Essential		4	40	60	100
T3221	0301210307	Introduction to Cloud Computing		4	40	60	100
T3587	0301210308	Advance Web Scripting		4	40	60	100
T3237	0301210309	Foundations of Data Warehousing and Data Mining		4	40	60	100
T3201	0301210310	Mobile Programming		4	40	60	100
TE7019	0301210311	Big Data Analytics		4	40	60	100
<b>Total Required Credits</b>				<b>12</b>	<b>120</b>	<b>180</b>	<b>300</b>
<b>Semester : 4</b>							
<b>Generic Core Courses</b>							
T8000	0301210401	Service Learning		4	100	0	100
T3258	0301210402	Current Trends and Practices in IT		3	75	0	75
T3803	0301210403	Project		3	75	0	75
T3371	0301210404	Introduction to Java Enterprise Framework		2	20	30	50
F0002	0301210405	Flexi-Credit Course		2	50	0	50
<b>Total</b>				<b>14</b>	<b>320</b>	<b>30</b>	<b>350</b>
<b>Generic Elective Courses Group</b>							
T7527	0301210406	Internet of Things		4	40	60	100
T3487	0301210407	Network Security Essentials		4	40	60	100
T3204	0301210408	Server Side Web Technology		4	40	60	100
TE7023	0301210409	Machine learning		4	40	60	100
T3589	0301210410	IoT Application Development		4	40	60	100
T3599	0301210411	Cloud Application Development		4	40	60	100
T3601	0301210412	Network Administration		4	40	60	100
T3607	0301210413	Software Project Practices		4	40	60	100
<b>Total Required Credits</b>				<b>12</b>	<b>120</b>	<b>180</b>	<b>300</b>
<b>Generic Elective Courses Group</b>							
T6096	0301210414	Creative Writing		2	50	0	50
T6181	0301210415	Understanding Cinema		2	50	0	50
T6182	0301210416	Appreciating Cinema		2	50	0	50
T6246	0301210417	Music in Media I		2	50	0	50
T6255	0301210418	Introduction to Theatre		2	50	0	50
T6274	0301210419	Foundations of Ethics		2	50	0	50
T6334	0301210420	Basic Sociology		2	50	0	50

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Catalog Course Code	Course Code	Course Title	Specialization	Credit	Internal Marks	External Marks	Total Marks
T6307	0301210421	Basic Psychology		2	50	0	50
<b>Total Required Credits</b>				<b>2</b>	<b>50</b>	<b>0</b>	<b>50</b>
<b>Semester : 5</b>							
<b>Generic Core Courses</b>							
T1234	0301210501	Information Technology and Regulatory Compliance		2	20	30	50
F0002	0301210502	Flexi-Credit Course		2	50	0	50
<b>Total</b>				<b>4</b>	<b>70</b>	<b>30</b>	<b>100</b>
<b>Generic Elective Courses Group</b>							
T3222	0301210503	Introduction to Vulnerability Assessment and Penetration Testing		4	40	60	100
T3521	0301210504	Advanced Internet of Things		4	40	60	100
T3588	0301210505	Game Design		4	40	60	100
T3590	0301210506	Design of Content Management System		4	40	60	100
T3612	0301210507	Data Visualization		4	40	60	100
T3600	0301210508	Cloud Architectures and Security		4	40	60	100
T3602	0301210509	Network Monitoring and Troubleshooting		4	40	60	100
T3608	0301210510	Software Testing		4	40	60	100
<b>Total Required Credits</b>				<b>12</b>	<b>120</b>	<b>180</b>	<b>300</b>
<b>Semester : 6</b>							
<b>Choose any One Group</b>							
<b>Generic Elective Courses</b>							
T3912	0301210601	Industry Internship		12	120	180	300
F0004	0301210602	Flexi-Credit Course		4	100	0	100
<b>Generic Elective Courses</b>							
F0004	0301210602	Flexi-Credit Course		4	100	0	100
T3808	0301210603	Project		8	80	120	200
T3009	0301210604	Best Programming Practices		2	20	30	50
T3387	0301210605	Introduction to Design Patterns		2	20	30	50
<b>Total Required Credits</b>				<b>16</b>	<b>220</b>	<b>180</b>	<b>400</b>

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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Semester1	6	12	18	450
Semester2	8	12	20	500
Semester3	0	22	22	550
Semester4	14	14	28	700
Semester5	2	14	16	400
Semester6	4	12	16	400
<b>Total</b>	<b>34</b>	<b>86</b>	<b>120</b>	<b>3000</b>