



JSPM's
RAJARSHI SHAHU COLLEGE OF ENGINEERING
TATHAWADE, PUNE-33
(An Autonomous Institute Affiliated to SavitribaiPhule Pune University, Pune)



Department of Computer Applications
4 Years BCA Structure
Pattern: 2025

RSCOE

Dr. Rinku Dulloo
BOS Chairman

Dr. Kavita Moholkar
Dean Academics

Dr. Avinash Badadhe
Director RSCOE



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Department of Computer Applications

Vision

“To be a centre of excellence in computing education, innovation, and research, nurturing ethically responsible professionals for societal and technological advancement.”

Mission

1. To provide outcome-based and experiential education in computer applications that enhances strong technical competence.
2. To nurture research and innovation to address real-world challenges.
3. To inculcate ethical values, leadership and social responsibility for industry-ready.

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Department of Computer Applications

Program Outcomes (POs)

- PO1: Demonstrate understanding of fundamental concepts in the field of Computing.
- PO2: Design and develop computer-based applications.
- PO3: Analyze existing research reported in the literature.
- PO4: Propose alternate solutions by undertaking research work.
- PO5: Create efficient, reliable, readable and maintainable code.
- PO6: Demonstrate a deeper understanding of the chosen domain.
- PO7: Select appropriate method/algorithm to solve the given problem.
- PO8: Explain complex technical concepts clearly and effectively, both in written and oral forms.
- PO9: Demonstrate ability to collaborate effectively with team members, understand different perspectives, and contribute productively to become successful professional.
- PO10: Demonstrate ability to work with integrity and a sense of social responsibility
- PO11: Demonstrate self and life-long learning skills.
- PO12: Solve computational problems innovatively.
- PO13: Apply knowledge gained and critical thinking to develop real-world applications.

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Department of Computer Applications

Program Specific Outcomes (PSOs):

Upon successful completion of UG BCA Program, the students will attain following

Program Specific Outcomes:

PSO1: Apply advanced computing skills and emerging technologies to solve evolving real-world challenges for the enhancement of quality of life and sustainable development.

PSO2: Integrate indigenous logical frameworks and traditional knowledge philosophies with cultural values to design contextually relevant and sustainable digital solutions

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Dean Academics

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Director RSCOE



Highlights of the Syllabus

Curriculum of BCA is designed in consultation with



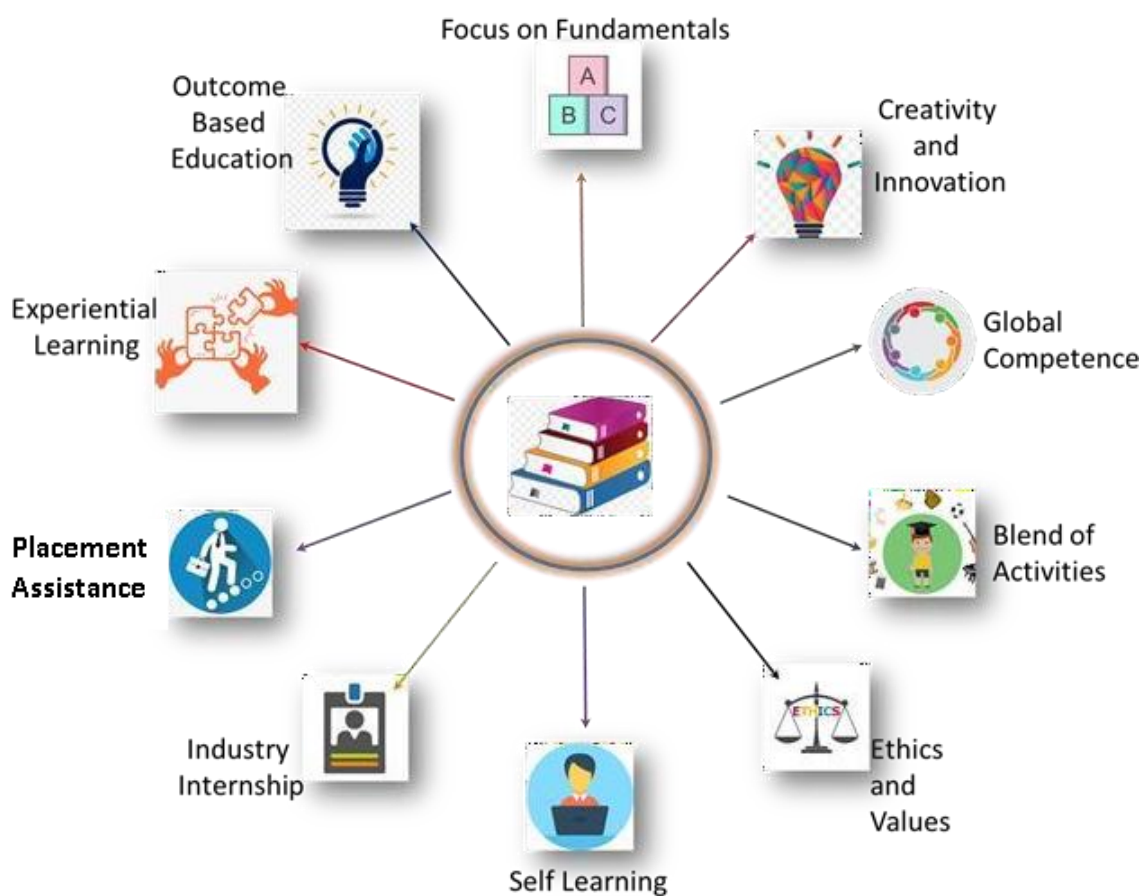
Academic
Experts



Industry/Corporate
Experts



Distinguished
Alumni



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***Everybody knows Technology but
“Application makes a Difference”***

- The curriculum of BCA is designed in a way such that, students will get knowledge of most trending and “in use” industrial technologies and practices by the time they complete their post-graduation. Keeping this goal in mind updates the curriculum as and when required.
- BCA curriculum is designed to build a strong basic and clear all the fundamental concepts.
- Bridge course is introduced during the induction program for two weeks to learn basic concepts.
- Mini Projects- To understand the importance of working in teams and being part of collective success, we have incorporated Mini projects in each semester where student will work together and implement it.
- Human Values Course- RSCOE focus on the all-around development of our students. This includes refining their technical skills as well as their personal development. Human Values courses will teach them how to handle stressful situations, ethics of a professional and how to give back to the society. This will also motivate them to join the various CSR activities conducted by the company they join and help in achieving the different organizational goals of the company they join.
- Electives offered on emerging technologies. Students can opt any one as per his/her choice.
- Online Professional certification courses are enabled curriculum for all students.
- Language Proficiency – English and softt skills are included in curriculum.
- In order to make students ready for placement, gateway to industry course is given where basic aptitude and technical concepts are introduced.
- Professional communication skills course help students to develop over all personality and groom them.

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Bachelor of Computer Applications(BCA)

Semester-I

Course Type	Course Code	Course	Teaching & Learning Scheme					Examination Scheme				Total Marks	Ownership
					Total Hrs	Total Credits							
			L	P	Hrs	C	TA1	MSE	TA2	ESE	Laboratory		
CC	BCA1101T	Database Management System	3	-	3	3	10	30	10	50	-	100	BCA
	BCA1101L	Database Management System Lab	-	2	2	1	10	10	10	20	-	50	BCA
	BCA1102T	Software Engineering	3		3	3	10	30	10	50	-	100	BCA
	BCA1103T	Fundamentals of Computer	3		3	3	10	30	10	50	-	100	BCA
SEC	BCA1104T	C Programming	3		3	3	10	30	10	50	-	100	BCA
	BCA1104L	C Programming Lab	-	2	2	1	10	10	10	20	-	50	BCA
AEC	HSBA1101T	Professional English Communication	2		2	2	10	30	10	50	-	100	Other department
	HSBA1101L	Professional English Communication	-	2	2	1	10	10	10	20	-	50	Other department
MDC	HSBA1102L	Indian Knowledge System	-	2	2	2	10	30	10	50	-	100	BCA
	Total		14	8	22	19					-	750	

Course Type Abbreviations

SEC: Skill Enhancement Course

CC : Core Course

AEC : Ability Enhancement Course

MDC: Multi Disciplinary Course

Dr. Rinku Dulloo
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Bachelor of Computer Applications (BCA)

Semester-II

Course Type	Course Code	Course	Teaching & LearningScheme					Examination Scheme				Total Marks	Ownersh
					Total Hrs	Total Credits							
			L	P	Hrs	C	TA1	MSE	TA2	ESE	Laboratory		
CC	BCA1105T	Advance Database Management System	3	-	3	3	10	30	10	50	-	100	BCA
	BCA1105L	Advance Database Management System Lab	-	2	2	1	10	10	10	20	50	50	BCA
	BCA1106T	Mathematics I	3	-	3	3	10	30	10	50	-	100	Other Departme
	BCA1107T	Operating System	3	-	3	3	10	30	10	50	-	100	BCA
SEC	BCA1108T	Advance C Programming	3	-	3	3	10	30	10	50	-	100	BCA
	BCA1108L	Advance C Programming Lab	-	2	2	1	10	10	10	20	50	50	BCA
VEC	HSBA1103T	Environmental Studies	3	-	3	3	10	30	10	50	-	100	BCA
AEC	BCA1109L	Self learning Course	-	2	2	2	10	10	10	20	50	50	BCA
CoC	BCA1110L	Co-curricular I	-	-		1	50				-	50	BCA
	Total		15	6	21	20					-	700	

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Dr. Rinku Dulloo
BOS Chairman

[Signature]

Dr. Kavita Moholkar
Dean Academics

[Signature]

Dr. Avinash Badadhe
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CoC- List of Co – curricular –I

1. Social development activities: Organize cultural events, Volunteering for social work
2. Educational activities: Projects in exhibitions, Extempore
3. Recreational activities: Seminars, Workshops, Industrial visits
4. Physical development focused activities: Yoga, National cadets corps (NCC), Sports competitions, Meditation
5. Culture and value-based activity: Annual day, Cultural festivals
6. Arts and craft-based activities: Photography, Poster drawing

List of Exit Courses after completion of Semester I and II

1. Exit option is available for students those who have earned the total 39 credits at the End of Second Semester.
2. Student who wants to avail the exit option after first year have to earn additional 6 credits from the list of courses shown below.
3. These courses student have to complete within summer vacation after 1st Year.
4. After fulfilment as mentioned in 1 to 3 above, Students can earn **UNDER GRADUATE CERTIFICATE IN COMPUTER APPLICATION** and same will be issued by the Institute.

Sr. No.	Course code	Name	Credits
1	BCA2101T	Data Structure with C	3
2	BCA2104T	Web Technology	3

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Dr. Kavita Moholkar
Dean Academics

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Bachelor of Computer Applications (BCA)

Semester-III

Course Type	Course Code	Course	Teaching & Learning Scheme					Examination Scheme				Total Marks	Ownership	
					Total Hrs	Total Credits								
			L	P	Hrs	C		TA1	MSE	TA2	ESE			Laboratory
CC	BCA2101T	Data Structure with C	3	-	3	3	10	30	10	50	-	100	BCA	
	BCA2101L	Data Structure with C Lab	-	2	2	1	10	10	10	20	50	50	BCA	
	BCA2102T	Mathematics II	3	-	3	3	10	30	10	50	-	100	Other Department BCA	
	BCA2103T	Cloud Computing	3	-	3	3	10	30	10	50	-	100		
SEC	BCA2104T	Web Technology	3	-	3	3	10	30	10	50	-	100	BCA	
	BCA2104L	Web Technology Lab	-	2	2	1	10	10	10	20	50	50	BCA	
VEC	HSBA2101T	Universal Values & Ethics	3	-	3	3	10	30	10	50	-	100	BCA	
AEC	HSBA2102L	Indian Constitution	-	2	2	2	10	10	10	20	50	50	BCA	
	Total		15	6	21	19					-	650		

Course Type Abbreviations

SEC: Skill Enhancement Course

CC : Core Course

IC : Indian Constitution

HSSM : Humanities Social Science and Management

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Dean Academics

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Bachelor of Computer Applications (BCA)

Semester-IV

	Course Code	Course	Teaching & Learning Scheme					Examination Scheme				Total Marks	Ownership
					Total Hrs	Total Credits							
			L	P	Hrs	C	TA1	MSE	TA2	ESE	Laboratory		
CC	BCA2105T	Object Oriented Analysis Design	3	-	3	3	10	30	10	50	-	100	BCA
	BCA2106T	Cyber Security & Cyber Law	3	-	3	3	10	30	10	50	-	100	BCA
	BCA2107T	Design & Analysis of Algorithm	3	-	3	3	10	30	10	50	-	100	BCA
SEC	BCA2108T	C++ Programming	3	-	3	3	10	30	10	50	-	100	BCA
	BCA2108L	C++ Programming Lab	-	2	2	1	10	10	10	20	-	50	BCA
	BCA2109T	Advance Web Technology	3	-	3	3	10	30	10	50	-	100	BCA
	BCA2109L	Advance Web Technology Lab	-	2	2	1	10	10	10	20	-	50	BCA
AEC	BCA2110L	Self learning Course	-	2	2	2	10	10	10	20	-	50	BCA
CoC	BCA2111L	Co-curricular II	-	-	-	1	50				-	50	BCA
	Total		15	6	21	20					-	700	

AEC: Ability Enhancement Course

SEC : Skill Enhancement Course

CC : Core Course

CoC : Co-curricular Course

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Dean Academics

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CoC- List of Co – curricular –II

1. Social development activities: Organize cultural events, Volunteering for social work
2. Educational activities: Projects in exhibitions, Extempore
3. Recreational activities: Seminars, Workshops, Industrial visits
4. Physical development focused activities: Yoga, National cadets corps (NCC), Sports competitions, Meditation
5. Culture and value-based activity: Annual day, Cultural festivals
6. Arts and craft-based activities: Photography, Poster drawing

List of Exit Courses after completion of Semester III and IV

1. Exit option is available for students those who have earned the total **78** credits at the End of fourth Semester.
2. Student who wants to avail the exit option after second year have to earn additional 6 credits from the list of courses shown below.
3. These courses student have to complete within summer vacation after 2 nd Year.
4. After fulfilment as mentioned in 1 to 3 above, Students can earn **UNDER GRADUATE DIPLOMA IN COMPUTER APPLICATION** and same will be issued by the Institute.

Sr. No.	Course code	Name	Credits
1	BCA3102T	JAVA I	3
2	BCA3103T	Python Programming	3

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Bachelor of Computer Applications (BCA)

Semester-V

Course Type	Course Code	Course	Teaching & Learning Scheme					Examination Scheme					Total Marks	Ownership
					Total Hrs	Total Credits								
			L	P	Hrs	C	TA1	MSE	TA2	ESE	Laboratory			
CC	BCA3101T	Software Testing	3	-	3	3	10	30	10	50	-	100	BCA	
	HSBA3101T	Innovation & Entrepreneurship	3	-	3	3	10	30	10	50	-	100	BCA	
SEC	BCA3102T	JAVA I	3	-	3	3	10	30	10	50	-	100	BCA	
	BCA3102L	JAVA I Lab	-	2	2	1	10	10	10	20	50	50	BCA	
	BCA3103T	Python Programming	3	-	3	3	10	30	10	50	-	100	BCA	
	BCA3103L	Python Programming Lab	-	2	2	1	10	10	10	20	50	50	BCA	
DSE	BCA3104T	Elective I	3	-	3	3	10	30	10	50	-	100	BCA	
AEC	HSBA3102L	Soft Skills	-	2	2	2	50				-	50	BCA	
	Total		15	6	21	19					-	650		

Course Type Abbreviations

SEC : Skill Enhancement Course **CC** : Core Course

DSE : Discipline Specific Elective **AEC** : Ability Enhancement Course

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Elective I	
Course	Course Name
BCA3104T-A	Cloud Services
BCA3104T-B	Digital Forensic
BCA3104T-C	IOT
BCA3104T-D	Bootstrap Basics

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Bachelor of Computer Applications (BCA)

Semester-VI(Track I)

Course Type	Course Code	Course	Teaching & Learning Scheme				Examination Scheme						Total Marks	Ownership
					Total Hrs	Total Credits								
			L	P	Hrs	C	TA1	MS E	TA2	ESE	Laboratory			
CC	HSBA3103T	Economics	3	-	3	3	10	30	10	50	-	100	Other Department	
	BCA3105T	Research Methodology	3	-	3	3	10	30	10	50	-	100	BCA	
SEC	BCA3106T	Project Management	3	-	3	3	10	30	10	50	-	100	BCA	
MP	BCA3107L	Major Project	-	-	-	3	10	30	10	50	100	100	BCA	
DSE	BCA3108T	Elective II	3	-	3	3	10	30	10	50	-	100	BCA	
AEC	BCA3109L	Self learning Course	-	2	-	2	10	10	10	20	50	50	BCA	
CoC	BCA3110L	Co-Curricular III	--	-	-	1	50				-	50	BCA	
	Total		12	2	12	18					150	600		

Course Type Abbreviations

SEC : Skill Enhancement Course **CC** : Core Course **MP** : Major Project

DSE : Discipline Specific Elective **AEC** : Ability Enhancement Course

Note : Major Project can be done in Python/Java/Web technology etc.
 Self learning course will consist of MOOC /Swayam / Coursera

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Elective II	
Course	Course Name
BCA3108T-A	DevOps
BCA3108T-B	Cyber Security Analysis
BCA3108T-C	Machine Learning
BCA3108T-D	Essentials of ReactJS

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Bachelor of Computer Applications
(BCA)Semester-VI(Track II)

Course Type	Course Code	Course	Teaching & Learning Scheme					Examination Scheme				Total Marks	Ownership
					Total Hrs	Total Credits							
			L	P	Hrs	C	TA1	MSE	TA2	ESE	Laboratory		
CC	HSBA3104T	Self Learning Course	-	-	-	3	50		50	-	100	BCA	
	BCA3111T	Industrial Internship	-	-	-	15	250		250	-	500	BCA	
	Total					18				-	600		

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CoC- List of Co – curricular –III

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2. Educational activities: Projects in exhibitions, Extempore
3. Recreational activities: Seminars, Workshops, Industrial visits
4. Physical development focused activities: Yoga, National cadets corps (NCC), Sports competitions, Meditation
5. Culture and value-based activity: Annual day, Cultural festivals
6. Arts and craft-based activities: Photography, Poster drawing

BACHELOR IN COMPUTER APPLICATION Degree will be awarded, if a student wishes to exit at the end of Third year.

Exit Criteria after Third Year of BCA Programme - The students shall have an option to exit after 3rd year of Computer Application Program and will be awarded with a Bachelor's in Computer Application.

Re-entry Criteria in to Fourth Year (Seventh Semester) The student who takes an exit after third year with an award of BCA may be allowed to re-enter in to Seventh Semester for completion of the BCA (Honours) or BCA (Honours with Research) Program as per the respective University / Admitting Body schedule after earning requisite credits in the Third year.

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