



Jog Educational Trust's

P. Jog College of Science and Commerce

(Affiliated to Savitribai Phule Pune University)

Course Structure

Bachelor of Computer Application

The Bachelor of Computer Application (Science) program at P. Jog College of Science & Commerce is a comprehensive and career-focused undergraduate program designed to equip students with strong foundations in computer science, information technology, and application-oriented computing. Rooted in the college's rich academic tradition and commitment to excellence, the program integrates theoretical knowledge with hands-on practical training to meet the evolving demands of the digital and technological landscape.

The curriculum emphasizes core areas such as programming languages, data structures, database management systems, operating systems, computer networks, web technologies, software engineering, and emerging domains including data analytics, cybersecurity, cloud computing, and artificial intelligence. Through a structured blend of classroom instruction, laboratory sessions, project-based learning, and case studies, students gain both conceptual clarity and practical proficiency in solving real-world computing problems.

The department adopts skill-based and application-driven teaching methodologies, encouraging analytical thinking, logical reasoning, and innovative problem-solving abilities. Regular practical sessions, coding labs, seminars, workshops, industrial visits, and mini-projects provide students with continuous exposure to current technologies and industry practices. Emphasis is also placed on developing soft skills, teamwork, communication abilities, and professional ethics, which are essential for success in the IT industry.

Duration: 3 years

Medium of Instruction: English

Course Eligibility: 10+2 or its equivalent from a recognized institution + CET

Examination Pattern: Semester Pattern

Semester I

Sr. No.	Verticals	Subject Name	Subject Code	Total Credits
1	Subject-I MJ	Problem Solving and Programming in C	CA-101-T	2
		Lab Course	CA-102-P	2
2	BSC	Computer Organization and Architecture	CA-103-T	2
		Lab course	CA-104-P	2
3	BSC	Discrete Mathematics and Statistics	CA-105-T	2
		Lab course	CA-106-P	2
4	GE/ OE	Psychology	OE-101-CA	2
5	VSEC	HTML and Web Page Designing	VSEC-101- CA	2
6	AEC	English-I	AEC-101	2
7	VEC	Environment Education-1	VEC-101-T	2
8	IKS	SPPU Basket	OE	2
			Total	22

Semester II

Sr. No.	Verticals	Subject Name	Subject Code	Total Credits
1	Subject-I MJ	Advanced C Programming	CA-151-T	2

		Lab course	CA-152-P	2
2	BSC	Introduction to Microcontrollers	CA-153-T	2
		Lab Course on	CA-154-P	2
3	BSC	Linear Algebra	CA-155-T	2
		Lab Course	CA-156-P	2
4	GE/ OE	Psychology of Interpersonal relationships	OE-151-CA	2
5	CC	NSS	CC-151-PE	2
6	SEC	Software tools for Business Communications	SEC-151-CA-P	2
7	VEC	Environment Education	VEC-151-T	2
	AEC	Professional Communication Skills II	AEC-151	2
			Total	22

Semester III

Sr. No.	Verticals	Subject Name	Subject Code	Total Credits
1	MJ	Data Structure	CA-201- MJ	4
		Lab course	CA-202- MJP	2
2	VSC	C++ Programming	CA-221 - VSC	2
3	FP	Field Project	CA-231-FP	2
4	MN	Data Communications	ELS241-MN	2
		Lab course	ELS242-MNP	2
5	GE/OE	Artificial Intelligence for corporates-III		2
6	IKS	Indian Knowledge System for Computing	CA-200 IKS	2

7	AEC	Marathi		2
8	CC			2
			Total	22

Semester IV

Sr. No.	Verticals	Subject Name	Subject Code	Total Credits
1	MJ	Database Management Systems	CA251-MJ	4
		Lab course	CA252- MJP	2
2	VSC	Python Programming	CA271- VSC	2
3	CEP	Community Services	CA-281 CEP	2
4	MN	Communication Networks	ELS291 - MN	2
		Lab course	ELS292 - MNP	2
5	GE/OE		CA221-P	2
6	SEC	Skill Enhancement Course	SEC251-CA	2
7	AEC	Marathi-II	AEC-201- HIN	2
8	SEC	Spreadsheet Applications	EMS204-T	2
9	AEC		-	2
10	CC			
			Total	22

Course Objectives (Program Objectives)

1. Provide a strong foundation in computer science and applications, including programming, data structures, databases, operating systems, and web technologies.
2. Develop problem-solving and analytical skills using computational thinking and modern programming tools.
3. Build competence in designing, developing, and testing software applications for real-world business and industry requirements.
4. Enhance practical knowledge through laboratory work, projects, and internships, enabling students to apply theoretical concepts effectively.
5. Promote research orientation, innovation, and lifelong learning to adapt to rapidly changing technologies.
6. Develop communication, teamwork, and professional skills, preparing students for careers in IT industries or higher education.
7. Instil ethical values and social responsibility, ensuring responsible use of technology and adherence to professional standards.

Course Outcomes (Program Outcomes)

Upon completing the program, students will be able to:

1. Demonstrate strong knowledge of computer science fundamentals, including programming, data structures, database management systems, operating systems, and web technologies.
2. Design, develop, and implement software applications using appropriate programming languages, tools, and development methodologies.
3. Apply analytical and problem-solving skills to develop efficient and optimized computing solutions for real-world problems.
4. Manage and analyze data effectively using database tools and modern computing techniques.
5. Work effectively as an individual and as a team member in multidisciplinary environments with good communication and professional skills.
6. Adopt ethical practices and professional standards in the development and use of computing technologies.
7. Pursue higher education and professional careers in IT, software development, data analytics, cybersecurity, or related fields.

Possible Career Opportunities

1. Entry-level roles in the IT industry such as Software Developer, Junior Programmer, Web Developer, and Application Developer.
2. Opportunities in database and system management including Database Administrator (Junior Level), System Administrator, and Technical Support Executive.
3. Roles in web and mobile application development, including Front-End Developer, Back-End Developer, and UI/UX Support Executive.

4. Positions in data and analytics fields such as Data Analyst (Entry Level), Business Intelligence Assistant, and Data Support Executive.
5. Opportunities in cybersecurity and networking domains such as Network Support Executive, Cybersecurity Analyst (Trainee), and IT Security Assistant.
6. Roles in IT-enabled services (ITES) and corporate sectors including IT Support Officer, Software Tester, and Quality Assurance Executive.
7. Pathways to higher education and professional growth such as MCA, M.Sc. (Computer Science), MBA (IT), Data Science certifications, Cloud Computing, Cybersecurity, and other specialized IT certifications.
