



Karmaveer Bhaurao Patil University, Satara
Yashavantrao Chavan Institute of Science, Satara
(An Autonomous College)

B. Sc. (Computer Application)
Programme and Credit Structure as per NEP 2020

{Ref. Government of Maharashtra letter no. एनइपी.२०२२/प्र.क.०९/विशि-३शि का ना दिनांक: १३ मार्च २०२४}
The degree shall be titled as 'Bachelor of Science (Computer Application) under the faculty of Science and Technology

B. Sc. Sem. I & II from Academic Year 2024-25

B. Sc. Sem. III & IV from Academic Year 2025-26

B. Sc. Sem. V & VI from Academic Year 2026-27

B. Sc. Sem. VII&VIII from Academic Year 2027-28

Programme Outcomes for B. Sc. (Computer Application)

PO. No.	Programme Outcomes After completing B. Sc. (Computer Application) Programme the students will be able to.....
PO-1	Apply mathematics and computing fundamental and domain concepts to find out the solution of defined problems and requirements.
PO-2	Use fundamental principle of Mathematics and Computing to identify, formulate research literature for solving complex problems, reaching appropriate solutions.
PO-3	Understand to design, analyze and develop solutions and evaluate system components or processes to meet specific need for local, regional and global public health, societal, cultural, and environmental systems.
PO-4	Ability to select modern computing tools, skills and techniques necessary for innovative software solutions.
PO-5	Ability to apply and commit professional ethics and cyber regulations in a global economic environment.
PO-6	Recognize the need for and develop the ability to engage in continuous learning as a Computing professional.
PO-7	Create, select, and apply appropriate techniques, resources, and modern IT tools including database management, networking AI & ML with an understanding of their limitations.
PO-8	Demonstrate knowledge and understanding of the management principles and apply them to one own work, and as a member and a leader in a team, to manage projects in multidisciplinary environments.
PO-9	Design and conduct experiments, review the research-based knowledge, gather and interpret data to provide valid conclusions in the context of computer applications.
PO-10	Recognize the need for, and ability to engage in independent and life-long learning.
PSO. NO	Programme Specific Outcomes The student will be able to...
PSO-1	Demonstrate competence in Programming Technologies.
PSO-2	Analyze their abilities in systematic planning, developing, testing and executing complex computing applications in field of social media and Analytics, Web Application Development and Data Interpretations.
PSO-3	Apprise in-depth expertise and sustainable learning that contributes to multi-disciplinary creativity, permutation, modernization and study to address global interest.
PSO-4	Explore technical comprehension in varied areas of Computer Applications and experience a conducive environment in cultivating skills for thriving career and higher studies.

PSO-5	Comprehend, explore and build up computer programs in the allied areas like Algorithms, System Software, Multimedia, Web Design and Data Analytics for efficient design of computer-based systems of varying complexity.
PSO-6	Proficient use of business software such as spreadsheets, databases, and programming languages.
PSO-7	Capability to analyze business needs and create information systems that are organized, secure, and aligned with organizational goals.
PSO-8	Skillful application of computer tools for analyzing business processes, extracting insights from data, and supporting informed decision-making.

Semester, Credit Framework, NSQF Level and Exit Points

Sr. No.	Semester	Year	Year	Credits	Level	Exit Points & Award
1	Sem. I & II	2024-25	1Year	44	4.5	UG Certificate in Computer Application
2	Sem. III & IV	2025-26	2Year	88	5.0	UG Diploma in Computer Application
3	Sem. V & VI	2026-27	3Year	132	5.5	B. Sc. in Computer Application (UG Three Year Degree)
4	Sem. VII & VIII	2027-28	4Year	176	6.0	B. Sc. in Computer Application [Honors/Research] (UG Four Year Degree)

Credit Distribution

Sr. No.	Course	3 Year Degree Programme			4 Year Honors Degree Programme			4 Year Honors with Research Degree Programme		
		Courses	Credits	%	Courses	Credits	%	Course s	Credit s	%
		(3 Yr)	(3 Yr)		(4 Yr)	(4 Yr)		(4 Yr)	(4 Yr)	
1	Major	26	52	39.39	34	80	45.45	32	72	40.91
2	Elective	04	08	6.06	08	16	9.09	08	16	9.09
3	IKS	02	04	3.03	02	04	2.27	02	04	2.27
4	VSC	04	08	6.06	04	08	4.55	04	08	4.55
5	FP	01	02	1.52	01	02	1.14	01	02	1.14
6	OJT	01	04	3.03	02	08	4.55	01	04	2.27
7	RP	00	00	0.00	00	00	00	02	12	6.82
8	SEC	03	06	4.55	03	06	3.41	03	06	3.41
9	CEP	01	02	1.52	01	02	1.14	01	02	1.14
Total (Major) (A)		42	86	65.15	55	126	71.59	54	126	71.59
1	Minor & RM	12	24	18.18	13	28	15.91	13	28	15.91
Total (Minor) (B)		12	24	18.18	12	28	15.91	13	28	15.91
1	OE	04	08	6.06	04	08	4.55	04	08	4.55
2	AEC	04	08	6.06	04	08	4.55	04	08	4.55
3	VEC	02	04	3.03	02	04	2.27	02	04	2.27
4	CC	01	02	1.52	01	02	1.14	01	02	1.14
Total (C)		11	22	16.67	11	22	12.50	11	22	12.50
Grand Total (A+B+C)		65	132	100	79	176	100	78	176	100

Duration:

- The program shall be a full-time program.
- The duration of program shall be three years for Bachelor of Science and four years for Bachelor of Science with Honors or Bachelor of Science with Research.
- Every year students will have exist option with:
- (1st Year: Certificate, 2nd Year: Diploma, 3rd Year: Degree, 4th Year: Honors / Research)
- These students are allowed to re-enter the degree program within three years and complete the degree program within the stipulated maximum period of Seven Years.

Eligibility: 12th Pass with Science, or equivalent.**Medium of Instruction: The medium of instructions shall be in English.****Scheme of Examination & Standard of Passing (CCE and ESE):**

- End Semester Exam (ESE): 30 Marks (Min 12 Marks for Passing)
- Continuous Comprehensive Evaluation (CCE): 20 Marks (Min 08 Marks for Passing)
- Total Marks = 50 Marks
- Minimum 40% Marks Required for Passing and there is separate head of Passing for End Semester Examination (ESE) and Continuous Comprehensive Evaluation (CCE).
- As per the decision of the concern Board of Studies or Competent Authority.
- A candidate who acquire 32 credits or more during semester – I & II shall be admitted to B. Sc. II (appear for semester – III & IV examination).
- However the candidate shall not be admitted to B.Sc. III (Semester - V) unless he/she passed in all the subjects at B.Sc. I (Semester - I & Semester - II) and acquire 32 credits or more during semester – III & IV.
- However, the candidate shall not be admitted to B. Sc. IV (Semester - VII) unless he/she passed in all the subjects at B. Sc. I, B.Sc. II and B. Sc. III (Semester - I To Semester - VI).
- However under the National Education Policy the rules extended by KBP University, time to time regarding ATKTK will be applicable.

Eligibility of the Core Faculty:

As per rules and regulations of Karmaveer Bhaurao Patil University, Satara and Govt. of Maharashtra.

Eligibility for Professor of Practice or Professional Trainer:

Any other eligibility as per the guidelines and regulations passed by concern board of studies, academic council of the autonomous college and rules & regulations of Karmaveer Bhaurao Patil University, Satara and Government of Maharashtra and UGC norms.



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B. Sc. (Computer Application) Part-I

Semester I				
Sr. No.	Components	Course Code	Course Title	Credits
1	Course-I	BCAT 111	Computer Fundamental & Application	2
		BCAT 112	Concept of Operating System	2
		BCAP 113	Lab Based on BCAT 111 & BCAT 112	2
2	Course-II	BCAT 114	Fundamentals of Computational Electronics	2
		BCAT 115	Computational Digital Electronics – I	2
		BCAP 116	Lab Based on BCAT 114 & BCAT 115	2
3	Course-III	BCAT 117	Computational Mathematics – I	2
		BCAT 118	Computational Statistics – I	2
		BCAP 119	Lab Based on BCAT 117 & BCAT 118	2
4	OE	BCATOE 1	Environmental Studies – I	2
5	IKS	BCATIKS 1	Indian Knowledge System	2
Total				22
Semester II				
Sr. No.	Components	Course Code	Course Title	Credits
1	Course-I	BCAT 121	Computer Programming – I	2
		BCAT 122	Database Management System	2
		BCAP 123	Lab Based on BCAT 121 & BCAT 122	2
2	Course-II	BCAT 124	Integrated Circuits for Computational Application	2
		BCAT 125	Computational Digital Electronics - II	2
		BCAP 126	Lab Based on BCAT 124 & BCAT 125	2
3	Course-III	BCAT 127	Computational Mathematics - II	2
		BCAT 128	Computational Statistics -II	2
		BCAP 129	Lab Based on BCAT 127 & BCAT 128	2
4	OE	BCATOE 2	Environmental Studies – II	2
5	VEC	BCATVEC 1	Democracy, Good Governance and Constitution of India	2
Total				22
EXIT OPTION: Award of UG Certificate in Major with 44 credits & an additional 4 credits core NSQF Course/Internship OR Continue with Major & Minor.				

B. Sc. (Computer Application) Part-II

Semester III				
Sr. No.	Components	Course Code	Course Title	Credits
1	Major	BCAT 231	Computer Programming – II	2
		BCAT 232	Web Designing	2
		BCAP 233	Lab Based on BCAT 231 & BCAT 232	2
2	Minor	BCAT 234	Instrumentation Techniques for Computing	2
		BCAT 235	Computer architecture & Microprocessor	2
		BCAP 236	Lab Based on BCAT 234 & BCAT 235	2
3	OE	BCATOE 3	Environmental Studies – III	2
4	VSC	BCAPVSC 1	WordPress Framework - I	2
5	SEC	BCAPSEC 1	Information Security	2
6	AEC	BCATAEC 1	English – I	2
7	IKS	BCATIKS 2	History of Computer in India	2
Total				22
Semester IV				
Sr. No.	Components	Course Code	Course Title	Credits
1	Major	BCAT 241	RDBMS	2
		BCAT 242	Web Development	2
		BCAP 243	Lab Based on BCAT 241 & BCAT 242	2
2	Minor	BCAT 244	Electronic Communication for computing	2
		BCAT 245	Embedded System and Applications	2
		BCAP 246	Lab Based on BCAT 244 & BCAT 245	2
3	OE	BCATOE 4	Environmental Studies – IV	2
4	VSC	BCAPVSC 2	WordPress Framework - II	2
5	SEC	BCAPSEC 2	Ethical Security	2
6	AEC	BCATAEC 2	English – II	2
7	VEC	BCATVEC 2	Environmental Studies	2
Total				22
EXIT OPTION: Award of UG Diploma in Major and Minor with 88 Credits & an additional 4 credits core NSQF Course/ Internship OR Continue with Major & Minor				

B. Sc. (Computer Application) Part-III

Semester V				
Sr. No.	Components	Course Code	Course Title	Credits
1	Major	BCAT 351	Java Programming	02
2	Major	BCAT 352	Python Programming	02
3	Major	BCAT 353	Cloud Computing	02
4	Electives	BCAT 354 E- I	Manual Software Testing	02
		BCAT 354 E- II	Artificial Intelligence	
5	Major Lab	BCATP 355	Lab Based on BCAT 351, BCAT 352 & BCAT 353	02
6	Elective Lab	BCAP 356 E -I	Lab Based on BCAT 354 E- I	02
		BCAP 356 E -II	Lab Based on BCAT 354 E- II	
7	VSC	BCAPVSC 3	Laravel Framework – I	02
8	AEC	BCATAEC 3	English P-III	02
9	OJT	BCATOJT 1	On Job Training in Computer Application - I	04
10	CEP	BCATCEP 1	Community Engagement Programme in Computer Application	02
Total				22
Semester VI				
Sr. No.	Components	Course Code	Course Title	Credits
1	Major	BCAT 361	Advanced Java Programming	02
2	Major	BCAT 362	ASP .Net with C#	02
3	Major	BCAT 363	Digital Image Processing	02
4	Electives	BCAT 364 E- I	Automation Software Testing	02
		BCAT 364 E- II	Machine Learning	
5	Major Lab	BCATP 365	Lab Based on BCAT 361, BCAT 362 & BCAT 363	02
6	Elective Lab	BCAP 366 E -I	Lab Based on BCAT 364 E- I	02
		BCAP 366 E -II	Lab Based on BCAT 364 E- II	
7	VSC	BCAPVSC 4	Laravel Framework – II	02
8	SEC	BCAPSEC 3	Git and GitHub	02
9	FP	BCAT FP 1	Field Project in Computer Application	02
10	CC	BCAT CC 1	Co-curricular Course in Computer Application	02
11	AEC	BCATAEC 4	English P-IV	02
Total				22
EXIT OPTION: Award of UG Degree in Major with 132 credits OR Continue with Major & Minor.				

B. Sc. (Computer Application) Part-IV Honors Degree

Semester VII				
Sr. No.	Components	Course Code	Course Title	Credits
1	Major	BCAT 471	Database System & SQL	04
2	Major	BCAT 472	Information Security and Cyber Law	04
3	Major	BCAT 473	Advance Python Programming	04
4	Electives	BCAT 474 E - I	Block Chain Architecture	02
		BCAT 474 E - II	Advanced Web Technology	
5	Major Lab	BCAP 475	Lab Based on BCAT 471, BCAT 472 & BCAT 473	02
6	Elective Lab	BCAP 476 E- I	Lab Based on BCAT 474 E - I	02
		BCAP 476 E- II	Lab Based on BCAT 474 E - II	
7	Minor	BCAT 477	Research Methodology	04
			Total	22
Semester VIII				
Sr.	Components	Course Code	Course Title	Credits
1	Major	BCAT 481	Advance Operating System	04
2	Major	BCAT 482	Android and Ios Application Development	04
3	Major	BCAT 483	Big Data Security	04
4	Electives	BCAT 484 E - I	Blockchain Technology and Application	02
		BCAT 484 E - II	ReactJS	
5	Major Lab	BCAP 485	Lab Based on BCAT 481, BCAT 482 & BCAT 483	02
6	Elective Lab	BCAP 486 E- I	Lab Based on BCAT 484 E - I	02
		BCAP 486 E- II	Lab Based on BCAT 484 E - II	
7	OJT	BCATOJT 2	On Job Training in Computer Application – II	04
			Total	22
Award of Four year UG Honors Degree in Major and Minor with 176 credits.				

B. Sc. (Computer Application) Part-IV Honors with Research Degree

Semester VII				
Sr. No.	Components	Course Code	Course Title	Credits
1	Major	BCAT 471	Database System & SQL	04
2	Major	BCAT 472	Information Security and Cyber Law	04
3	Electives	BCAT 474 E - I	Block Chain Architecture	04
		BCAT 474 E - II	Advanced Web Technology	
4	Major Lab	BCAP 475	Lab Based on BCAT 471 & BCAT 472	02
5	Minor	BCAT 476	Research Methodology	02
6	RP	BCATRP 1	Research Project in Computer Application – I	04
Total				22
Semester VIII				
Sr.	Components	Course Code	Course Title	Credits
1	Major	BCAT 481	Advance Operating System	04
2	Major	BCAT 482	Android and Ios Application Development	04
3	Electives	BCAT 484 E - I	Blockchain Technology and Application	04
		BCAT 484 E - II	ReactJS	
4	Major Lab	BCAP 485	Lab Based on BCAT 481 & BCAT 482	02
5	RP	BCATRP 2	Research Project in Computer Application – II	08
Total				22
Award of Four-year UG Honors Degree in Major and Minor with 176 credits.				

Chairman
BoS in Computer Application

Secretary
Academic Council

Chairman
Academic Council