

**Ahmednagar Jilha Maratha Vidya Prasarak Samaj's
New Arts, Commerce, and Science College, Ahmednagar
(Autonomous)
(Affiliated to Savitribai Phule Pune University, Pune)**



**National Education Policy (NEP)
Choice Based Credit System (CBCS)**

**Programme Skeleton and Syllabus of
B.Sc. (Computer Science) (Major)**

Implemented from
Academic Year 2023-24

Credit Distribution: B.Sc. (Computer Science) (Major) including Minor and OE and other courses.

	Type of Courses	III Yr	IV Yrs (Honours)	IV Yrs Research
Major Computer Science	Discipline-Specific Courses (DSC)	46	74	66
	Discipline Specific Elective (DSE)	08	16	16
	Skill Enhancement Courses (SEC)	06	06	06
	Vocational Skill Courses (VSC)	08	08	08
	On-Job Training (OJT)	04	08	04
	Field Project (FP)	04	04	04
	Community Engagement and Service (CEP)	02	02	02
	Research project	00	00	12
	Research Methodology	00	04	04
	Indian Knowledge System	02	02	02
	Total (I, II and III Year)	80	124	124
Minor	Minor	20	20	20
Other Courses	Open Elective (OE)/ Multidisciplinary Courses	12	12	12
	Co-Curricular Courses	08	08	08
	Ability Enhancement Courses	08	08	08
	Value Education Courses	04	04	04
	Total	132	176	176

B. Sc. Programme Framework: Credit Distribution

Year	Semester	Level	Major										Minor	OE	CC	AEC	VEC	Total	
			DSC		DSE		SEC		VSC		FP/OJT /IN/CEP								IKS
I	I	4.5	T	P	T	P	T	P	T	P	T	P		T/P	-	-	-	-	-
I	II	4.5	4	2	-	-	2	-	-	-	-	-	2	03	3	2	2	2	22
			6	-	-	-	2	2	-	-	-	-		03	3	2	2	2	22
Exit Option: Award of UG Certificate in Major with 44 credits and an additional 4 credit core NSQF course /Internship or Continue with Major and Minor																			
II	III	5.0	6	2	-	-	2	-	-	-	2		03	3	2	2	-	-	22
II	IV	5.0	6	2	-	-	-	-	2	-	2		03	3	2	2	-	-	22
Exit Option: Award of UG Diploma in Major with 88 credits and an additional 4 credit core NSQF course /Internship or Continue with major and minor																			
III	V	5.5	8	2	2	2	-	-	-	2		2	04	-	-	-	-	-	22
III	VI	5.5	6	2	2	2	-	-	-	2		4	04	-	-	-	-	-	22
Exit Option: Award of UG Degree in Major and Minor with 132 credits or continue with Major for a 4-year Degree																			

IV	VII	6.0	8	6	2	2	RM-4	-	-	-	-	-	-	-	-	-	-	22
IV	VII I	6.0	8	6	2	2	-	-	-	-	-	4	-	-	-	-	-	22
Four Year UG Degree(Honours) with Major and Minor with 176 credits																		
IV	VII	6.0	6	4	2	2	RM-4	-	-	-	4	-	-	-	-	-	-	22
IV	VII I	6.0	6	4	2	2	-	-	0	-	-	8	-	-	-	-	-	22
Four Year UG Degree (Honours with Research) with Major and Minor with 176 credits																		

B. Sc. Programme Framework: Course Distribution

Year	Semester	Level	Major										Minor	OE	CC	AEC	VEC	Total			
			DSC		DSE		SEC		VSC		FP/OJT /IN/CEP								IKS		
I	-	-	T	P	T	P	T	P	T	P	T	P	T	P	T	P	-	-		-	-
I	I	4.5	2	1	-	-	1	-	-	-	-	-	1	1	1	1	1	1	1	1	10
	II	4.5	2	-	-	-	1	1	-	-	-	-	1	1	1	1	1	1	1	1	09
Exit Option: Award of UG Certificate in Major with 44 credits and an additional 4 credit core NSQF course /Internship or Continue with major and minor																					
II	III	5.0	2	1	-	-	1	-	-	-	1	-	1	1	1	1	1	1	-	-	09
II	IV	5.0	2	1	-	-	-	-	1	-	1	-	1	1	1	1	1	1	-	-	09
Exit Option: Award of UG Diploma in Major with 88 credits and an \additional 4 credit core NSQF course /Internship or Continue with major and minor																					
III	V	5.5	2	1	1	1	-	-	-	1	-	1	1	-	-	-	-	-	-	-	08
III	VI	5.5	2	1	1	1	-	-	-	1	-	1	1	-	-	-	-	-	-	-	08
Exit Option: Award of UG Degree in Major and Minor with 132 credits or continue with Major for a 4-year Degree																					
IV	VII	6.0	3	3	1	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	09
IV	VIII	6.0	3	3	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	09
Four Year UG Degree(Honours) with Major and Minor with 176 credits																					
IV	VII	6.0	2	2	1	1	0	1	-	-	-	1	-	-	-	-	-	-	-	-	08
IV	VIII	6.0	2	2	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	07
Four Year UG Degree (Honours with Research) with Major and Minor with 176 credits																					

Programme Framework (Course Distribution): B.Sc. (Computer Science) (Major)

Year	Semester	Level	Major											Total	
			DSC		DSE		SEC		VSC		FP/OJT /IN/CEP/PR		IKS		
			T	P	T	P	T	P	T	P	T	P	T	T	P/PR
I	I	4.5	2	1	-	-	1	-	-	-	-	-	01	03	02
I	II	4.5	2	-	-	-	1	1	-	-	-	-		02	02
II	III	5.0	2	1	-	-	1	-	-	-	1		02	03	
II	IV	5.0	2	1	-	-	-	-	1	-	1		02	03	
III	V	5.5	2	1	1	1	-	-	-	1		1	03	04	
III	VI	5.5	2	1	1	1	-	-	-	1		1	03	04	
B.Sc. Honours															
IV	VII	6.0	3	3	1	1	RM-1	-	-	-	-		05	04	
IV	VIII	6.0	3	3	1	1	-	-	-	-	1		04	05	
B.Sc. Honours with Research															
IV	VII	6.0	2	2	1	1	RM-1	-	-	-	1		04	04	
IV	VIII	6.0	2	2	1	1	-	-	-	-	1		03	04	

Programme Framework (Credit Distribution): B.Sc. (Computer Science) (Major)

Year	Semester	Level	Major											Total
			DSC		DSE		SEC		VSC		FP/OJT /IN/CEP/RP		IKS	
			T	P	T	P	T	P	T	P	T	P	T	
I	I	4.5	4	2	-	-	2	-	-	-	-	-	02	10
I	II	4.5	6	-	-	-	2	2	-	-	-	-		10
II	III	5.0	6	2	-	-	2	-	-	-	2		12	
II	IV	5.0	6	2	-	-	-	-	2	-	2		12	
III	V	5.5	8	2	2	2	-	-	-	2		2	18	
III	VI	5.5	6	2	2	2	-	-	-	2		4	18	
IV	VII	6.0	8	6	2	2	RM-4	-	-	-	-		22	
IV	VIII	6.0	8	6	2	2	-	-	-	-	4		22	
IV	VII	6.0	6	4	2	2	RM-4	-	-	-	4		22	
IV	VIII	6.0	6	4	2	2	-	-	-	-	8		22	

Programme Framework (Courses and Credits): B.Sc. (Computer Science) (Major)

Sr. No.	Year	Semester	Level	Course Type	Course Code	Title	Credits
1.	I	I	4.5	DSC-1	BS-CS111T	Problem Solving using Computer and 'C' Programming	02
2.	I	I	4.5	DSC-2	BS- CS112T	Database Management Systems	02
3.	I	I	4.5	DSC-3	BS- CS113P	Lab Course on C Programming & DBMS	02
4.	I	I	4.5	SEC-1	BS- CS114T	Analog Electronics	02
5.	I	I	4.5	IKS-1	BS- CS115T	Science and Technology in Ancient India	02
6.	I	II	4.5	DSC-4	BS-CS121T	Advanced 'C' Programming	03
7.	I	II	4.5	DSC-5	BS- CS122T	Relational Database Management Systems	03
8.	I	II	4.5	SEC-2	BS- CS123P	Lab Course on Advanced C Programming & RDBMS	02
9.	I	II	4.5	VSC-1	BS- CS124 T	Digital Electronics	02
10.	II	III	5.0	DSC-6	BS- CS 231T	Data Structures and Algorithms	03
11.	II	III	5.0	DSC-7	BS- CS 232T	Software Engineering	03
12.	II	III	5.0	DSC-8	BS- CS 233P	Lab course on Data Structures and Algorithms	02
13.	II	III	5.0	SEC-3	BS- CS 234P	Mini Project on Software Engineering	02
14.	II	III	5.0	FP-01	BS- CS235P	Project	02
15.	II	IV	5.0	DSC-9	BS- CS242T	Object Oriented Concepts using C++	03
16.	II	IV	5.0	DSC-10	BS- CS242T	NoSQL	03
17.	II	IV	5.0	DSC-11	BS- CS243P	Lab course on Object Oriented C++	02

Department of Computer Science, New Arts, Commerce and Science College, Ahmednagar

18.	II	IV	5.0	VSC-2	BS- CS244P	Lab course on NoSQL	02
19.	II	IV	5.0	CEP-01	BS- CS245P	Project	02
20.	III	V	5.5	DSC-12	BS- CS351T	Operating System	04
21.	III	V	5.5	DSC-13	BS- CS352T	Computer Network	04
22.	III	V	5.5	DSC-14	BS- CS353P	Lab Course on Operating System	02
23.	III	V	5.5	DSE-01	BS- CS355T	Web Tech	02
24.	III	V	5.5	DSE-02	BS- CS356P	Lab Course on Computer Network	02
25.	III	V	5.5	VSC-3	BS- CS357P	Lab Course on Web Tech	02
26.	III	V	5.5	FP-02	BS- CS358P	Project	02
27.	III	VI	5.5	DSC-15	BS- CS361T	Foundation of Data Science	03
28.	III	VI	5.5	DSC-16	BS- CS362T	Object Oriented Programming using Java	03
29.	III	VI	5.5	DSC-17	BS- CS363P	Lab Course on Foundation of Data Science	02
30.	III	VI	5.5	DSE-03	BS- CS364T	Python Programming	02
31.	III	VI	5.5	DSE-04	BS- CS365P	Lab Course on Object Oriented Programming using Java	02
32.	III	VI	5.5	VSC-4	BS- CS366P	Lab Course on Python Programming	02
33.	III	VI	5.5	OJT-01	BS- CS367P	Project	04

B.Sc. (Computer Science) (Major with Honours)

34.	IV	VII	6.0	DSC-18	BS- CS471T	Paradigm of Programming Languages	03
35.	IV	VII	6.0	DSC-19	BS- CS472T	Database Technologies	03
36.	IV	VII	6.0	DSC-20	BS- CS473T	Artificial Intelligence	02
37.	IV	VII	6.0	DSC-21	BS- CS474P	Lab Course on Paradigm of Programming Languages	02
38.	IV	VII	6.0	DSC-22	BS- CS475P	Lab Course on Database Technologies	02
39.	IV	VII	6.0	DSC-23	BS- CS476P	Lab Course on Artificial Intelligence	02
40.	IV	VII	6.0	DSE-05	BS- CS477T (A) OR BS- CS477T (B)	Web Technology OR Design and Analysis of Algorithms	02
41.	IV	VII	6.0	DSE-06	BS- CS478P (A) OR BS- CS478P (B)	Lab Course on Web Technology OR Lab Course based on Design and Analysis of Algorithms	02
42.	IV	VII	6.0	RM-01	BS- CS479T/P	Project	04
43.	IV	VIII	6.0	DSC-24	BS- CS481T	Advanced Operating Systems	03
44.	IV	VIII	6.0	DSC-25	BS- CS482T	Information System Security	03
45.	IV	VIII	6.0	DSC-26	BS- CS483T	Mobile Technologies	02
46.	IV	VIII	6.0	DSC-27	BS- CS484P	Lab Course on Advanced Operating Systems	02
47.	IV	VIII	6.0	DSC-28	BS- CS485P	Lab Course on	02

						Information System Security	
48.	IV	VIII	6.0	DSC-29	BS- CS486P	Lab Course on Mobile Technologies	02
49.	IV	VIII	6.0	DSE-07	BS- CS487T (A) OR BS- CS487T (B) OR BS- CS487T (C)	Dot Net OR Cloud Computing OR Network Cyber Security	02
50.	IV	VIII	6.0	DSE-08	BS- CS488P (A) OR BS- CS488P (B) OR BS- CS486P (C)	Lab Course on Dot Net OR Lab Course on Cloud Computing OR Lab Course on Network Cyber Security	02
51.	IV	VIII	6.0	OJT-02	BS- CS489P	Project	04

B.Sc. (Computer Science) (Major Honours with Research)

34.	IV	VII	6.0	DSC-20	BS- CS471T	KLM	03
35.	IV	VII	6.0	DSC-21	BS- CS472T	NOP	03
36.	IV	VII	6.0	DSC-22	BS- CS473P	TUV	02
37.	IV	VII	6.0	DSC-23	BS- CS474P	WXY	02
38.	IV	VII	6.0	DSE-05	BS- CS475T	WXY	02
39.	IV	VII	6.0	DSE-06	BS- CS476P	YXZ	02
40.	IV	VII	6.0	RM-01	BS- CS477T/P	ZAB	04
41.	IV	VII	6.0	RP-01	BS- CS488P	AAA	04
42.	IV	VIII	6.0	DSC-20	BS- CS481	KLM	03
43.	IV	VIII	6.0	DSC-21	BS- CS482	NOP	03
44.	IV	VIII	6.0	DSC-22	BS- CS483	TUV	02
45.	IV	VIII	6.0	DSC-23	BS- CS484	WXY	02
46.	IV	VIII	6.0	DSE-07	BS- CS485	WXY	02
47.	IV	VIII	6.0	DSE-08	BS- CS486	YXZ	02
48.	IV	VIII	6.0	RP-02	BS- CS487	AAA	08