



ALVA'S COLLEGE

(AUTONOMOUS)

A Unit of Alva's Education Foundation (R.)
Affiliated to Mangalore University



STATE EDUCATION POLICY – 2024

[SEP-2024]

CURRICULUM STRUCTURE

FOR

BACHELOR OF COMPUTER APPLICATIONS (BCA) -

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Suggested programme structure for the Under Graduate Programmes

[BCA, BCA (A.I & M.L, BCA (D.A)]

Semester	Course 1	Course 2	Course 3	Elective / Optional	Course	Language	Compulsory	Total Credit	Total Working hour
I	5 (3T+2P)	5 (3T+2P)	5 T			3+3	2	23	4+4+4+4+5+4+4+2=31
II	5 (3T+2P)	5 (3T+2P)	5T			3+3	2	23	4+4+4+4+5+4+4+2=31
III	5 (3T+2P)	5 (3T+2P)	5T	2		3+3		23	4+4+4+4+5+4+4+2=31
IV	5 (3T+2P)	5 (3T+2P)	5T	2		3+3	2	25	4+4+4+4+5+2+4+4+2=33
V	8 [(2x3T) + 2P]	8 [(2x3T) + 2P]	8 [(2x3T) + 2P]				2	26	3+3+4+3+3+4+3+3+4+2=32
VI	3T	3T	3T		3T	Project work 12		24	3+3+3+3+24=36
144									

Note:

- **Course1 and Course2: I to IV Semester: Theory 3 credit=4 contact hours & Practical 2 credit=4 contact hours**
- **Course3: I to IV Semester: Theory 5 credit=5 contact hours**
- **Course1, Course2 and Course3: V and VI Semester: Theory 3 credit=3 contact hours & Practical 2 credit=4 contact hours**
- **Elective/Optional: 2 credit=2 contact hours**
- **Languages: 3 credit=4 contact hours**
- **Compulsory: 2 credit=2 contact hours**

**CURRICULUM STRUCTURE FOR BCA –
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

Semester I								
Sl. No	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1	BCA - AIML – 1.1	Fundamentals of Information Technology	Theory	4	80	20	100	3
2	BCA - AIML – 1.2	Fundamentals of Information Technology Lab	Practical	4	40	10	50	2
3	BCA - AIML – 1.3	Problem Solving using C	Theory	4	80	20	100	3
4	BCA - AIML – 1.5	C Programming Lab	Practical	4	40	10	50	2
5	BCA - AIML – 1.5	Computational Mathematics	Theory	5	80	20	100	5
6		Language-I	Lang	4	80	20	100	3
7		Language-II	Lang	4	80	20	100	3
8		Constitutional Values	Compulsory	3	40	10	50	2
Sub - Total				32	520	130	650	23

Semester II								
Sl. No	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1	BCA - AIML -2.1	Data Structure using C	Theory	4	80	20	100	3
2	BCA - AIML -2.2	Data Structures Lab	Practical	4	40	10	50	2
3	BCA - AIML -2.3	Database Management System	Theory	4	80	20	100	3
4	BCA - AIML -2.4	Database Management Lab	Practical	4	40	10	50	2
5	BCA - AIML -2.5	Computer Architecture	Theory	5	80	20	100	5
6		Language-I	Lang	4	80	20	100	3
7		Language-II	Lang	4	80	20	100	3
8		Environmental Studies	Compulsory	3	40	10	50	2
Sub - Total				32	520	130	650	23

Semester III								
Sl. No	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1		Language-I	Lang	4	80	20	100	3
2		Language-II	Lang	4	80	20	100	3
3	BCA - AIML -3.1	Object Oriented Programming using Java	Core	4	80	20	100	3
4	BCA- AIML -3.2	Operating Systems	Core	4	80	20	100	3
5	BCA- AIML- 3.3	Computer Networks	Core	5	80	20	100	5
6	BCA- AIML- 3.4	Object Oriented Programming Lab	Practical	4	40	10	50	2
7	BCA- AIML-3.5	Operating Systems Lab	Practical	4	40	10	50	2
8	BCA- AIML-3.6	A) Digital Marketing B) Web Content Management System C) DEVOPS	Elective	2	40	10	50	2
Sub - Total				31	520	130	650	23

Semester IV								
Sl. No	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1		Language-I	Lang	4	80	20	100	3
2		Language-II	Lang	4	80	20	100	3
3	BCA – AIML-4.1	Artificial Intelligence-I	Core	4	80	20	100	3
4	BCA- AIML -4.2	Python Programming	Core	4	80	20	100	3
5	BCA – AIML-4.3	Software Engineering	Core	5	80	20	100	5
6	BCA- AIML-4.4	Artificial Intelligence-I Lab	Practical	4	40	10	50	2
7	BCA- AIML-4.5	Python Programming Lab	Practical	4	40	10	50	2
8	BCA – AIML-4.6	A) Cloud Computing B) Object Oriented Analysis and Design C) Digital Image Processing	Elective	2	40	10	50	2
9	BCA – AIML-4.7	Internet Basics	Compulsory	2	40	10	50	2
Sub - Total				33	640	160	800	25

Semester V								
Sl. No	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1	BCA - AIML –5.1	Machine Learning Techniques	Core	3	80	20	100	3
2	BCA- AIML –5.2	Web Development	Core	3	80	20	100	3
3	BCA - AIML –5.3	Data Analytics Using R	Core	3	80	20	100	3
4	BCA - AIML –5.4	Internet Of Things	Core	3	80	20	100	3
5	BCA- AIML –5.5	Artificial Intelligence -II	Core	3	80	20	100	3
6	BCA- AIML –5.6	Natural Language Processing	Core	3	80	20	100	3
7	BCA- AIML –5.7	Web Development Lab	Practical	4	40	10	50	2
8	BCA- AIML –5.8	Data Analytics Lab	Practical	4	40	10	50	2
9	BCA- AIML –5.9	Machine Learning and IOT Lab	Practical	4	40	10	50	2
10	BCA- AIML-5.10	AI Tools and Techniques	Compulsory	2	40	10	50	2
Sub - Total				32	640	160	800	26

Semester VI								
Sl. No	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1	BCA-AIML -6.1	Artificial Neural Network	Core	3	80	20	100	3
2	BCA-AIML -6.2	Deep Learning	Core	3	80	20	100	3
3	BCA-AIML -6.3	Principles of Cyber Security	Core	3	80	20	100	3
3	BCA-AIML -6.4	Computer Vision	Core	3	80	20	100	3
4	BCA-AIML -6.5	Project Work	Project Work	24	300	100	400	12
Sub - Total				36	620	180	800	24