

**PERIYAR MANIAMMAI INSTITUTE OF SCIENCE & TECHNOLOGY**  
**FACULTY OF COMPUTING SCIENCE AND APPLICATIONS**  
**DEPARTMENT OF COMPUTER APPLICATIONS**  
**Bachelor of Computer Applications (BCA)**  
**CURRICULUM - REGULATIONS 2024**

Category of courses and minimum credit requirement as per the guidelines of AICTE / UGC for BCA programme are outlined below:

Sl. No.	Category of Courses	Credits	
		UG 3-Years	UG 4-Years
1.	Major (Core)	60	80
2.	Minor Stream	24	32
3.	Multidisciplinary	09	09
4.	Ability Enhancement Courses	08	08
5.	Skill Enhancement Courses	09	09
6.	Value Added Courses	06 - 08	06 – 08
7.	Internship	02 - 04	02 – 04
8.	Research Project / Dissertation	-	12
<b>Total Credits</b>		120	160

**SEMESTER I**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24TA101	□□□□□□□□□□ (General Tamil)	3	0	0	3
	U24TA102	□□□□□□□□□□ □□□□□ (Foundational Tamil)				
2	U24EN102	English for Communication – I	3	0	0	3
3	U24MA101	Matrices and Differential Calculus	3	1	0	4
4	U24CO101	Information Technology Essentials	3	1	0	4
5	U24PH103	Physical Science	3	0	0	3
6	U24EM101	Coding Techniques	3	0	0	3
<b>Practical</b>						
7	U24EM102	Coding Techniques Laboratory	0	0	2	1
8	U24EM103	Speech Communication Laboratory	0	0	2	1
<b>Total</b>			18	2	4	22

**SEMESTER II**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24TA151	ஐஐஐஐஐஐஐஐ ஐஐஐஐஐஐ (Scientific Tamil)	3	0	0	3
	U24TA152	ஐஐஐஐஐஐஐஐஐஐஐஐ (Beginners Tamil)				
2	U24EN152	English for Communication – II	3	0	0	3
3	U24MA152	Vector Calculus	3	1	0	4
4	U24CO151	Scripting Paradigms	3	1	0	4
5	U24EM151	Programming in Practice	3	0	0	3
6	U24VA002	Universal Human Values	2	1	0	3
<b>Practical</b>						
7	U24CO152	Scripting Paradigms Laboratory	0	0	2	1
8	U24EM152	Programming in Practice Laboratory	0	0	2	1
<b>Total</b>			17	3	4	22

**SEMESTER III**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24TA201	ஊடுகணக்கியல் (Computing Tamil)	3	0	0	3
2	U24EN201	English for Communication – III	3	0	0	3
3	U24MA203	Discrete Mathematical Structures	3	1	0	4
4	U24CA201	Data Structures and Algorithms	3	0	0	3
5	U24CA202	Computer Architecture	3	0	0	3
6	U24CA203	Database Management Systems	3	0	0	3
7	U24VA001	Environmental Studies	2	0	0	2
<b>Practical</b>						
8	U24CA204	Data Structures and Algorithms Laboratory	0	0	2	1
9	U24CA205	Database Management Systems Laboratory	0	0	2	1
<b>Total</b>			20	1	4	23

**SEMESTER IV**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24TA251	தெχνிகல் தமிழ் (Technical Tamil)	3	0	0	3
2	U24EN251	English for Communication – IV	3	0	0	3
3	U24CA251	Data Science Fundamentals	3	0	0	3
4	U24CA252	Operating Systems	3	0	0	3
5	U24CA253	Java Programming	3	0	0	3
6	U24BB2XX	Management Strategies and Concepts	3	0	0	3
7	U24CA7XX	Open Elective – I (IKS)	3	0	0	3
<b>Practical</b>						
8	U24CA254	Operating Systems Laboratory	0	0	2	1
9	U24CA255	Java Programming Laboratory	0	0	2	1
10	U24EM256	Internship	0	0	0	2
<b>Total</b>			21	0	4	25

**SEMESTER V**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24CA301	Immersive Technologies	3	0	0	3
2	U24CA302	Software Engineering	3	0	0	3
3	U24CA303	Data Communication and Networking	3	0	0	3
4	U24CA304	Machine Learning Fundamentals	3	0	2	4
5	U24CA8XX	Online Course	3	0	0	3
6	U24CA9XX	Professional Elective – I	3	0	0	3
<b>Practical</b>						
7	U24CA305	Immersive Technologies Laboratory	0	0	2	1
8	U24CA306	Computer Networking Laboratory	0	0	2	1
9	U24EM301	Community Engagement and Social Responsibility	1	0	2	2
<b>Audit Course</b>						
10	U24AU001	Disaster Management	--	--	--	--
<b>Total</b>			19	0	8	23

## SEMESTER VI

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24CA351	Deep Learning Fundamentals	3	0	0	3
2	U24CA352	Cloud Computing and Virtualization	3	0	0	3
3	U24CA353	Data Visualization Techniques	3	0	0	3
4	U24CA354	Internet of Things and Applications	3	0	2	4
5	U24CA9XX	Professional Elective – II	3	0	0	3
6	U24CA7XX	Open Elective – II	3	0	0	3
<b>Practical</b>						
7	U24CA355	Deep Learning Laboratory	0	0	2	1
8	U24CA356	Cloud Computing and Virtualization Laboratory	0	0	2	1
9	U24CA357	Capstone Project	0	0	8	4
<b>Audit Course</b>						
10	U24AU003	Cyber Security	--	--	--	--
<b>Total</b>			18	0	14	25

## SEMESTER VII

### BCA (Honours)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24CA401	Exploratory Data Analysis	3	0	2	4
2	U24CA402	Generative AI Models	3	0	2	4
3	U24CA403	Data Modeling and Programming	3	0	2	4
4	U24CA404	Software Testing and Quality Assurance	3	0	2	4
5	U24CA405	DevOps	3	0	2	4
<b>Total</b>			15	0	8	20

**SEMESTER VIII****BCA (Honours)**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24CA451	Predictive Analytics	3	0	2	4
2	U24CA452	Blockchain Technology	3	0	2	4
<b>Practical</b>						
3	U24CA453	Project / Dissertation	0	0	24	12
<b>Total</b>			6	0	28	20

**SEMESTER VII****BCA (Honours with Research)**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24CA401	Exploratory Data Analysis	3	0	2	4
2	U24CA402	Generative AI Models	3	0	2	4
3	U24CA403	Data Modelling and Programming	3	0	2	4
4	U24CA406	IPR and Research Methodology	3	1	0	4
<b>Research Project</b>						
5	U24CA407	Applicative Research	0	0	8	4
<b>Total</b>			12	2	12	20

## SEMESTER VIII

### BCA (Honours with Research)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24CA454	Research / Dissertation (with SCOPUS / SCI Publication)	0	0	40	20
<b>Total</b>			0	0	40	20

Actual Credit allotment for the course categories as per the AICTE / UGC / TANSCHÉ guidelines for the Computer Applications (BCA) programme are given below:

Sl. No.	Category of Courses	Credits		
		3 Years	4 Years (Honours)	4 Years (Honours with Research)
1.	Major (Core)	62	82	74
2.	Minor Stream	24	32	32
3.	Multidisciplinary	09	09	09
4.	Ability Enhancement Courses	24	24	24
5.	Skill Enhancement Courses	09	09	09
6.	Value Added Courses	08	08	08
7.	Internship	04	04	04
8.	Research Project / Dissertation	-	12	20
<b>Total Credits</b>		140	180	180

**Semester wise Credit Distribution (In all Categories of Courses)**

**BCA - 3 Years**

<b>Sl. No.</b>	<b>Category of Courses</b>	<b>Credits</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>
1.	Major (Core)	62	-	5	11	11	14	21
2.	Minor Stream	24	8	4	4	-	4	4
3.	Multidisciplinary	09	3	-	-	3	3	-
4.	Ability Enhancement Courses	24	6	6	6	6	-	-
5.	Skill Enhancement Courses	09	5	4	-	-	-	-
6.	Value Added Courses	08	-	3	2	3	-	-
7.	Internship	04	-	-	-	2	2	-
8.	Project / Dissertation	-	-	-	-	-	-	-
<b>Total Credits</b>		140	22	22	23	25	23	25

**Semester wise Credit Distribution (In all Categories of Courses)**

**BCA (Honours) - 4 Years**

<b>Sl. No.</b>	<b>Category of Courses</b>	<b>Credits</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>	<b>VII</b>	<b>VIII</b>
1.	Major (Core)	82	-	5	11	11	14	21	12	8
2.	Minor Stream	32	8	4	4	-	4	4	8	-
3.	Multidisciplinary	09	3	-	-	3	3	-	-	-
4.	Ability Enhancement Courses	24	6	6	6	6	-	-	-	-
5.	Skill Enhancement Courses	09	5	4	-	-	-	-	-	-
6.	Value Added Courses	08	-	3	2	3	-	-	-	-
7.	Internship	04	-	-	-	2	2	-	-	-
8.	Project / Dissertation	12	-	-	-	-	-	-	-	12
<b>Total Credits</b>		<b>180</b>	<b>22</b>	<b>22</b>	<b>23</b>	<b>25</b>	<b>23</b>	<b>25</b>	<b>20</b>	<b>20</b>

**Semester wise Credit Distribution (In all Categories of Courses)**

**BCA (Honours with Research) - 4 Years**

<b>Sl. No.</b>	<b>Category of Courses</b>	<b>Credits</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>	<b>VII</b>	<b>VIII</b>
1.	Major (Core)	74	-	5	11	11	14	21	12	-
2.	Minor Stream	32	8	4	4	-	4	4	8	-
3.	Multidisciplinary	09	3	-	-	3	3	-	-	-
4.	Ability Enhancement Courses	24	6	6	6	6	-	-	-	-
5.	Skill Enhancement Courses	09	5	4	-	-	-	-	-	-
6.	Value Added Courses	08	-	3	2	3	-	-	-	-
7.	Internship	04	-	-	-	2	2	-	-	-
8.	Project / Dissertation	20	-	-	-	-	-	-	-	20
<b>Total Credits</b>		180	22	22	23	25	23	25	20	20

The number of credits in each semester is summarized as follows:

<b>Programme</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>	<b>VII</b>	<b>VIII</b>
Bachelor of Computer Applications (BCA)	22	22	23	25	23	25	20	20

### Suggested List of Courses for Professional Elective - I

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24CA901	Neural Networks	3	0	0	3
2.	U24CA902	Natural Language Processing	3	0	0	3
3.	U24CA903	Full Stack Application Development	3	0	0	3
4.	U24CA904	Data Mining	3	0	0	3
5.	U24CA905	Cryptography and Network Security	3	0	0	3

### Suggested List of Courses for Professional Elective - II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24CA951	Prompt Engineering	3	0	0	3
2.	U24CA952	Human Computer Interaction	3	0	0	3
3.	U24CA953	Big Data Analytics	3	0	0	3
4.	U24CA954	Visual Programming	3	0	0	3
5.	U24CA955	Robotics and Intelligent Systems	3	0	0	3

## List of Courses under each Category

### Major (Core)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24CO151	Scripting Paradigms	3	1	0	4
2.	U24CO152	Scripting Paradigms Laboratory	0	0	2	1
3.	U24CA201	Data Structures and Algorithms	3	0	0	3
4.	U24CA202	Computer Architecture	3	0	0	3
5.	U24CA203	Database Management Systems	3	0	0	3
6.	U24CA204	Data Structures and Algorithms Laboratory	0	0	2	1
7.	U24CA205	Database Management Systems Laboratory	0	0	2	1
8.	U24CA251	Data Science Fundamentals	3	0	0	3
9.	U24CA252	Operating Systems	3	0	0	3
10.	U24CA253	Java Programming	3	0	0	3
11.	U24CA254	Operating Systems Laboratory	0	0	2	1
12.	U24CA255	Java Programming Laboratory	0	0	2	1
13.	U24CA302	Software Engineering	3	0	0	3
14.	U24CA303	Data Communication and Networking	3	0	0	3
15.	U24CA304	Machine Learning Fundamentals	3	0	2	4
16.	U24CA9XX	Professional Elective - I	3	0	0	3
17.	U24CA306	Computer Networking Laboratory	0	0	2	1
18.	U24CA351	Deep Learning Fundamentals	3	0	0	3
19.	U24CA352	Cloud Computing and Virtualization	3	0	0	3
20.	U24CA353	Data Visualization Techniques	3	0	0	3
21.	U24CA8XX	Online Course	3	0	0	3

22.	U24CA9XX	Professional Elective – II	3	0	0	3
23.	U24CA355	Deep Learning Laboratory	0	0	2	1
24.	U24CA356	Cloud Computing and Virtualization Laboratory	0	0	2	1
25.	U24CA357	Capstone Project	0	0	8	4
<b>Total</b>			48	1	26	62
<b>Additional Major (Core) for 4 years BCA (Honours)</b>						
26.	U24CA401	Exploratory Data Analysis	3	0	2	4
27.	U24CA402	Generative AI Models	3	0	2	4
28.	U24CA405	DevOps	3	0	2	4
29.	U24CA451	Predictive Analytics	3	0	2	4
30.	U24CA452	Blockchain Technology	3	0	2	4
<b>Total</b>			15	0	10	20
<b>Additional Major (Core) for 4 years BCA(Honours with Research)</b>						
31.	U24CA401	Exploratory Data Analysis	3	0	2	4
32.	U24CA402	Generative AI Models	3	0	2	4
33.	U24CA407	Applicative Research	0	0	8	4
<b>Total</b>			6	0	12	12

**Minor (Core)**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24CA101	Information Technology Essentials	3	1	0	4
2.	U24MA101	Matrices and Differential Calculus	3	1	0	4
3.	U24MA152	Vector Calculus	3	1	0	4
4.	U24MA203	Discrete Mathematical Structures	3	1	0	4
5.	U24CA301	Immersive Technologies	3	0	0	3
6.	U24CA305	Immersive Technologies Laboratory	0	0	2	1
7.	U24CA354	Internet of Things and Applications	3	0	2	4
<b>Total</b>			18	4	4	24
<b>Additional Minor (Core) for 4 years BCA (Honours)</b>						
8.	U24CA403	Data Modeling and Programming	3	0	2	4
9.	U24CA404	Software Testing and Quality Assurance	3	0	2	4
<b>Total</b>			6	0	4	8
<b>Additional Minor (Core) for 4 years BCA (Honours with Research)</b>						
10.	U24CA403	Data Modeling and Programming	3	0	2	4
11.	U24CA406	IPR and Research Methodology	3	1	0	4
<b>Total</b>			6	1	2	8

## Multidisciplinary

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24PH103	Physical Science	3	0	0	3
2.	U24BB2XX	Management Strategies and Concepts	3	0	0	3
3.	U24CA7XX	Open Elective – II	3	0	0	3
<b>Total</b>			9	0	0	9

## Ability Enhancement Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24TA101	□□□□□□□□□□ (General Tamil)	3	0	0	3
	U24TA102	□□□□□□□□□□□□□□□□ (Foundational Tamil)	3	0	0	3
2.	U24EN102	English for Communication – I	3	0	0	3
3.	U24TA151	அறிவியல் தமிழ் (Scientific Tamil)	3	0	0	3
	U24TA152	வளர்தமிழ் (Beginners Tamil)	3	0	0	3
4.	U24EN152	English for Communication – II	3	0	0	3
5.	U24TA201	கணிணித்தமிழ் (Computing Tamil)	3	0	0	3
6.	U24EN201	English for Communication – III	3	0	0	3
7.	U24TA251	தொழில்நுட்பத்தமிழ் (Technical Tamil)	3	0	0	3
8.	U24EN251	English for Communication – IV	3	0	0	3
<b>Total</b>			24	0	0	24

### Skill Enhancement Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24EM101	Coding Techniques	3	0	0	3
2.	U24EM102	Coding Techniques Laboratory	0	0	2	1
3.	U24EM103	Speech Communication Laboratory	0	0	2	1
4.	U24EM151	Programming in Practice	3	0	0	3
5.	U24EM152	Programming in Practice Laboratory	0	0	2	1
<b>Total</b>			6	0	6	9

### Value Added Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24VA002	Universal Human Values	2	1	0	3
2.	U24VA001	Environmental Studies	2	0	0	2
3.	U24CA751	Computing in Thirukkral (Open Elective - I)	3	0	0	3
<b>Total</b>			7	1	0	8

### Internship

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1.	U24EM256	Internship	0	0	0	2
2.	U24EM301	Community Engagement and Social Responsibility	1	0	2	2
<b>Total</b>			1	0	2	4

**Research Project / Dissertation (Honours)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>			
			<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	U24CA453	Project / Dissertation	0	0	24	12

**Research Project / Dissertation (Honours with Research)**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>			
			<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	U24CA454	Research / Dissertation (with SCOPUS / SCI Publication)	0	0	40	20

**Audit Course**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>			
			<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
1.	U24AU001	Disaster Management	-	-	-	-
2.	U24AU003	Cyber Security	-	-	-	-