

MAEER'S  
**MIT** | Arts, Commerce  
& Science College

Affiliated to Savitribai Phule Pune University

Accredited by NAAC with "A" Grade

MIT Arts, Commerce  
& Science College

Academic Year

2024-25

# Bachelor of Computer Application - Science

Syllabus as per the National Education Policy (NEP)

## About Us

MIT Arts, Commerce and Science College established by Prof. (Dr.) Vishwanath Karad in 2007 under the aegis of Maharashtra Academy of Engineering and Educational Research (MAEER) Pune, affiliated with Savitribai Phule Pune University and recognised by the Government of Maharashtra has emerged as a prominent institute emphasizing on quality education, research opportunities and exposure to advancing academic innovation and engaging students, staff, alumni, and other stakeholders to achieve its educational goals. Located in a peaceful and nurturing environment, the college is Equipped with top- notch infrastructure with latest technological advancements and excellent library facilities for seamless academic activities. Research and academic programmes are driven by our highly qualified and experienced faculty members who foster in-depth knowledge and practical skills through active learning, field visits, expert guidance, training programs, research support, and continuous assessment. We have the Training and Placement Cell who facilitates the process of campus placement, strives to help students in improving communication and employment- seeking skills and assist to explore the various job opportunities thus leading to best placements amongst educational institute in Pune.

### Awards, Affiliations and Recognition:

- ❖ MIT ACSC College is Accredited by NAAC with a CGPA of 3.21 on a Four point scale at 'A' Grade.
- ❖ Affiliated to Savitribai Phule Pune University and recognised by the Government of Maharashtra.
- ❖ Our educational institution in Pune, Maharashtra, has received the Education Excellence Award for achieving outstanding placements amongst other regional institutions.
- ❖ We are proud to have received the Best College Award in Rural Area for two consecutive years (2015-16 & 2016-17) from Savitribai Phule Pune University. We recognise our commitment to providing quality education in underserved areas.
- ❖ Our efforts towards student development have been acknowledged with the University Level Best College Award for 2017-18 by Savitribai Phule Pune University, underscoring our dedication to nurturing well-rounded individuals.
- ❖ We are ranked among the top colleges in India by India Today MDRA Best Colleges Ranking for 2018, 2019, 2020, and 2022, attesting to our reputation for excellence in education.
- ❖ MITACSC has secured the 3rd position in the prestigious TOP 10 EMERGING COLLEGES 2022, recognizing colleges established in or after 2010 for outstanding performance. The college is proud of its accomplishments and advancements and is committed to owning its promising future.

## MIT ACSC offers a wide range of Undergraduate and Postgraduate programs:

### Undergraduate Programs

- ❖ B.Com. ( Bachelor of Commerce)
- ❖ BBA ( Bachelor of Business Administration)
- ❖ BBA ( International Business)
- ❖ BBA ( Computer Application)
- ❖ BCA ( Science )
- ❖ B.Sc. ( Artificial Intelligence & Machine Learning )
- ❖ B.Sc. ( Data Science )
- ❖ B.Sc. ( Animation )
- ❖ B.Sc. ( Computer Science )
- ❖ B.Sc. ( Cyber & Digital Science )
- ❖ B.Sc. ( Information Technology )
- ❖ B.Sc. (Industrial Mathematics with Computer Application)

### Postgraduate Programs

- ❖ M.Sc. (Computer Science)
- ❖ M.Sc. (Data Science)
- ❖ M.Sc. ( Information Technology )
- ❖ M.Sc. (Computer Application)
- ❖ M.Sc. (Industrial Mathematics with Computer Application)
- ❖ M.Sc. ( Cyber & Digital Science )

### Ph.D.

- ❖ Ph.D. - Mathematics



# BCA Sci

## Bachelor of Computer Application-Science

### About the Course

The BCA programme equips the students with the required skills to design and develop different kinds of software systems. The students make use of their in-depth knowledge and innovative ideas, with different types of interactive applications that can reduce manual labor to a great extent.

### Course Objectives

- Demonstrate analytical and design skills including the ability to generate creative solutions and support team-oriented professionalism through effective communication in their careers.
- Implement structured and hands-on approaches to software development, utilizing a variety of programming languages and design principles across national and international contexts.
- Demonstrate societal advancement by implementing critical thinking and problem-solving skills in professional practices to uplift health, safety, and other societal issues, while tackling social, technical, and business challenges.

### Why Choose Computer Application from MIT ACSC?

- Various opportunities in terms of Post Graduate courses are available such as MCA and MBA.
- The remunerations are higher than graduates from other fields.
- 100% placement assistance concerning various academic programmes.
- Offers career advancement opportunities in various fields including software development, database management, web development, networking, software testing, cyber security, digital marketing, Android programming, and Python.
- Dedicated courses as per the industrial requirements.
- Internship opportunities following completion of the second year of the course.
- Inculcating application development skills for better prospective opportunities.



## Eligibility

H.S.C. (10 + 2) with Science stream

OR

Three years diploma course after S.S.C. (10th std.) of Board of Technical Education conducted by Government of Maharashtra or its equivalent.



## How to Apply?

An eligible candidate has to apply directly to the college through the college admission application form. Admission will be offered to the students on the basis of H.S.C. / 12th percentage.

## Future Prospects

The graduates in Computer Applications can witness effective career progression in web development, software development, database, digital marketing, cyber security, etc. So, they have ample job opportunities to shape their careers. There are numerous postgraduate programs accessible both in India and abroad. These jobs will aid them in defining their goals and enhance their practical skills.



# Program Structure

## Bachelor of Computer Application

BCA (Sci): SEM 1 | Level 4.5

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits		
			TH	PR	CE	EE	Total	TH	PR	Total
U24/BCA1 MCT1	Subject 1	Problem Solving Using 'C' Programming	03	--	15	35	50	02	--	02
U24/BCA1 MCP1		Problem Solving Using 'C' Programming Laboratory	--	04	15	35	50	--	02	02
U24/BCA1 MCT2	Subject 2	Database Management System	03	--	15	35	50	02	--	02
U24/BCA1 MCP2		Database Management System Laboratory	--	04	15	35	50	--	02	02
U24/BCA1 MCT3	Subject 3	Digital Electronics & Computer Organization	03	--	15	35	50	02	--	02
U24/BCA1 MCP3		Web Development Using HTML and CSS Laboratory	--	04	15	35	50	--	02	02
	GE/ OE	To be selected from college Bucket	03	--	15	35	50	02	--	02
U24/BCA1SECP1	SEC	Digital Electronics & Computer Organization Laboratory	--	04	15	35	50	--	02	02
U24/BCA1 IKST1	IKS Generic	Computing Science in Ancient India	03	--	15	35	50	02	--	02
U24/BCA1 AECT1	AEC	English Communication-I	03	--	15	35	50	02	--	02
U24/BCA1 VECT1	Value Education Course	Democracy and Election	03	--	15	35	50	02	--	02
Total			21	16	165	385	550	14	08	22

BCA (Sci): SEM 2 | Level 4.5

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits		
			TH	PR	CE	EE	Total	TH	PR	Total
U24/BCA2MCT1	Subject 1	Object Oriented Concepts using C++	03	--	15	35	50	02	--	02
U24/BCA2MCP1		Object Oriented Concepts using C++ Laboratory	--	04	15	35	50	--	02	02
U24/BCA2MCT2	Subject 2	Web Development Using Java Script	03	--	15	35	50	02	--	02
U24/BCA2 MCP2		Web Development Using Java Script Laboratory	--	04	15	35	50	--	02	02
U24/BCA2MCT3	Subject 3	Applied Mathematics	03	--	15	35	50	02	--	02
U24/BCA2 MCP3		Relational Database Management System Laboratory	--	04	15	35	50	--	02	02
	GE/ OE	To be selected from College Bucket	--	04	15	35	50	--	02	02
U24/BCA2SECP1	SEC	Applied Mathematics Laboratory	--	04	15	35	50	--	02	02
U24/BCA2 AECT1	AEC	English Communication-II	03	--	15	35	50	02	--	02
U24/BCA2 VECT1	Value Education Course	Environmental Science	03	--	15	35	50	02	--	02
	CC	To be selected from College Bucket	03	--	15	35	50	02	--	02
Total			18	20	165	385	550	12	10	22

# Program Structure

## Bachelor of Computer Application

BCA (Sci): SEM 3 | Level 5

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits			
			TH	PR	CE	EE	Total	TH	PR	Total	
U24/BCA3MCT1	MJ	Data Structures using C++	03	--	15	35	50	02	--	02	
U24/BCA3MCT2		Software Engineering	03	--	15	35	50	02	--	02	
U24/BCA3 MCP1		Data Structures using C++ Laboratory	--	04	15	35	50	--	02	02	
U24/BCA3VSCP1	VSC	R-Programming	--	04	15	35	50	--	02	02	
U24/BCA3FPP1	FP	Field Project	--	04	15	35	50	--	02	02	
U24/BCA3MNT1A	MN	HBase and NoSQL	03	--	15	35	50	02	--	02	
U24/BCA3MNP1A		HBase and NoSQL Laboratory	--	04	15	35	50	--	02	02	
OR											
U24/BCA3 MNT1B		Web Development Using PHP	03	--	15	35	50	02	--	02	
U24/BCA3 MNP1B		Web Development Using PHP Laboratory	--	04	15	35	50	--	02	02	
	GE/ OE	To be selected from College Bucket	03	--	15	35	50	02	--	02	
U24/BCA3IKST1	IKS	Indian Knowledge system	03	--	15	35	50	02	--	02	
U24/BCA3AECT1	AEC	Sanskrit-I / Marathi-I / Hindi-I	03	--	15	35	50	02	--	02	
	CC	To be selected from College Bucket	03	--	15	35	50	02	--	02	
Total			21	16	165	385	550	14	8	22	

BCA (Sci): SEM 4 | Level 5

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits			
			TH	PR	CE	EE	Total	TH	PR	Total	
U24/BCA4MCT1	MJ	Core JAVA	03	--	15	35	50	02	--	02	
U24/BCA4MCT2		Object Oriented Software Engineering	03	--	15	35	50	02	--	02	
U24/BCA4 MCP1		Core JAVA Laboratory	--	04	15	35	50	--	02	02	
U24/BCA4 VSCP1	VSC	Go Programming	--	04	15	35	50	--	02	02	
U24/BCA4 CEPP1	CEP	Community Engagement Program	--	04	15	35	50	--	02	02	
U24/BCA4 MNT1A	MN	MongoDB	03	--	15	35	50	02	--	02	
U24/BCA4 MNT1A		MongoDB Laboratory	--	04	15	35	50	--	02	02	
OR											
U24/BCA4 MNT1B		React Web Framework	03	--	15	35	50	02	--	02	
U24/BCA4 MNP1B		React Web Framework Laboratory	--	04	15	35	50	--	02	02	
	GE/ OE	To be selected from College Bucket		04	15	35	50	--	02	02	
U24/BCA4AECT1	SEC	Power BI OR Open AI	03	04	15	35	50	--	02	02	
U24/CA4A ECT1	AEC	Sanskrit-II / Marathi-II / Hindi-II	03	--	15	35	50	02	--	02	
	CC	To be selected from College Bucket		--	15	35	50	02	--	02	
Total			15	24	165	385	550	10	12	22	

# Program Structure

## Bachelor of Computer Application

BCA (Sci): SEM 5 | Level 5.5

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits			
			TH	PR	CE	EE	Total	TH	PR	Total	
U24/BCA5MCT1	MJ	Advance Java	05	--	30	70	100	04	--	04	
U24/BCA5MCT2		Computer Network	03	--	15	35	50	02	--	02	
U24/BCA5MCP1		Advance Java Laboratory	--	04	15	35	50	--	02	02	
U24/BCA5MCT3		Python Programming	03	--	15	35	50	02	--	02	
U24/BCA5MCP2		Python Programming Laboratory	--	04	15	35	50	--	02	02	
U24/BCA5MET1A	ME	Android	03	--	15	35	50	--	--	02	
U24/BCA5MEP1A		Android Laboratory	--	04	15	35	50	--	02	02	
			O R								
U24/BCA5 MET1B		NET Programming	03	--	15	35	50	02	--	02	
U24/BCA5MEP1B		.NET Programming Laboratory	--	04	15	35	50	--	02	02	
U24/BCA5VSCP1	VSC	Scala Framework	--	04	15	35	50	--	02	02	
U24/BCA5FPP	FP	Field Project	--	04	15	35	50	--	02	02	
U24/BCA5MNT1A	MN	Big data	03	--	15	35	50	02	--	02	
			O R								
U24/BCA5MNT1B		Node JS and Express JS	03	--	15	35	50	02	--	02	
Total			17	20	165	385	550	10	10	22	

# Program Structure

## Business Administration Computer Application

BCA (Sci): SEM 6 | Level 5.5

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits		
			TH	PR	CE	EE	Total	TH	PR	Total
U24/BCA6MCT1	MJ	Artificial Intelligence	03	--	15	35	50	02	--	02
U24/BCA6MCT2		Cyber Security	03	--	15	35	50	02	--	02
U24/BCA6MCP1		Artificial Intelligence Laboratory	--	04	15	35	50	--	02	02
U24/BCA6MCT3		Operating System	05	--	30	70	100	04	--	04
U24/BCA6MCP2		Operating System Laboratory	--	04	15	35	50	--	02	02
U24/BCA6MET1A	ME	UI & UX	03	--	15	35	50	02	--	02
U24/BCA6MEP1A		UI & UX Laboratory	--	04	15	35	50	--	02	02
		OR								
U24/BCA6MET1B		Machine Learning	03	--	15	35	50	02	--	02
U24/BCA6MEP1B		Machine Learning Laboratory	--	04	15	35	50	--	02	02
U24/BCA6VSCP1	VSC	Spring Framework	--	04	15	35	50	--	02	02
U24/BCA6OJTP	OJT	On Job Training	--	08	30	70	100	--	04	04
Total			14	24	165	385	550	10	12	22

**Note:** Students are required to complete on-the-job training or internship in an industry, organization or on-campus for a total duration of 240 hours with 8 hours per day. This preferably takes place during winter vacations after the Semester V examinations and the commencement of Semester VI.

**Exit Option:** Upon completion of the specified requirements, students have two options: Award of UG Degree in Major with 132 Credits or Continue with Major or Minor.

OR

SEM 6 Hon. Deg. with Sem. long Internship | Level 5.5

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits		
			TH	PR	CE	EE	Total	TH	PR	Total
U24/BCA6MCT1	MJ	Artificial Intelligence	05	--	30	70	100	04	--	04
U24/BCA6MCT2		Cyber Security	05	--	30	70	100	04	--	04
U24/BCA6MCT3		Operating System	05	--	30	70	100	04	--	04
U24/BCA6MCT4		UI & UX OR Machine Learning	05	--	30	70	100	04	--	04
U24/BCA6MCT5		Spring Framework	03	--	15	35	50	02	--	02
	OR									
SLIP 24/BCA8MOOC		MOOC Online Courses	--	--	--	--	--	18	--	18
U24/BCA6SLIP	OJT	On Job Training	--	08	30	70	100	--	04	04
Total			23	08	165	385	550	18	04	22



# Program Structure

## Business Administration Computer Application

BCA (Sci) : Hon. Degree SEM 7 | Level 6

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits		
			TH	PR	CE	EE	Total	TH	PR	Total
U24/BCA7MCT1	MJ	Block chain	05	--	30	70	100	04	--	04
U24/BCA7MCT2		Cloud Technologies	05	--	30	70	100	04	--	04
U24/BCA7 MCP1		Cloud Technologies Laboratory	--	04	15	35	50	--	02	02
U24/BCA7 MCP2		Block chain Laboratory	--	04	15	35	50	--	02	02
U24/BCA7MCT3		DevOps	03	--	15	35	50	02	--	02
U24/BCA7MET1A	ME	Natural Language Processing	03	--	15	35	50	02	--	02
U24/BCA7MEP1A		Natural Language Processing Laboratory	--	04	15	35	50	--	02	02
		O R								
U24/BCA7MET1B		Django Web Framework	03	--	15	35	50	02	--	02
U24/BCA7MEP1B		Django Web Framework Laboratory	--	04	15	35	50	--	02	02
U24/BCA7RMT1	RM	Fundamentals of Research Methodology	05	--	30	70	100	04	--	04
Total			21	12	165	385	550	16	06	22

# Program Structure

## Business Administration Computer Application

BCA (Sci) : Hon. Degree SEM 8 | Level 6

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits		
			TH	PR	CE	EE	Total	TH	PR	Total
U24/BCA8MCT1	MJ	Data Science	02	--	15	35	50	02	--	02
U24/BCA8MCT2		Data Analytics	04	--	30	70	100	04	--	04
U24/BCA8MCT3		Deep Learning	04	--	30	70	100	04	--	04
U24/BCA8MCP1		Data Analytics Laboratory	--	04	15	35	50	--	02	02
U24/BCA8MCP2		Deep Learning Laboratory	--	04	15	35	50	--	02	02
U24/BCA8MET1A	ME	Data Mining and Data Warehousing	02	--	15	35	50	02	--	02
U24/BCA8MEP1A		DMDW Laboratory	--	04	15	35	50	--	02	02
		OR								
U24/BCA8MET1B		Computer Vision	02	--	15	35	50	02	--	02
U24/BCA8MEP1B		Computer Vision Laboratory	--	04	15	35	50	--	02	02
U24/BCA8OJT	OJT	On-Job Training/Internship*	--	08	30	70	100	--	04	04
Total			12	20	165	385	550	12	10	22

Award of Four years UG Honors Degree in Major and Minor with 176 credit

OR

SEM 8 Hon. Deg. with Sem. long Internship | Level 6

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week		Examination Scheme and Marks			Credits		
			TH	PR	CE	EE	Total	TH	PR	Total
U24/BCA8MCT1	MJ	Data Science	05	--	30	70	100	04	--	04
U24/BCA8MCT2		Data Analytics	05	--	30	70	100	04	--	04
U24/BCA8MCT3		Deep Learning	05	--	30	70	100	04	--	04
U24/BCA8MCT4		Data Mining and Data Warehousing / Computer Vision	05	--	30	70	100	04	--	04
U24/BCA8MCT5		Computer Vision	03	--	15	35	50	02	--	02
OR										
SLIP 24/BCA8MOOC		MOOC Online Courses	--	--	--	--	--	18	--	18
U24/BCA8OJT	OJT	On-Job Training/Internship*	--	08	30	70	100	--	04	04
Total			23	08	165	385	550	18	04	22

**Abbreviations:** MJ – Major Core | ME- Major Elective | MN-Minor | VSC- Vocational Skill Course | IKS - Indian Knowledge System  
 FP – Field Project | OJT – On Job Training | CEP – Community Engagement Program | GE / OE –Generic Elective / Open Elective  
 SEC- Skill Enhancement Course | AEC- Ability Enhancement Course | VEC –Value Education course | CC- Co-curricular Course  
 RM –Research Methodology | T- Theory | P-Practical

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# College campus



Computer Lab



Class Room



Canteen



Play Ground



Computer Lab



Indoor Sports



Class Room



Computer Lab



Library



Garden



Class Room



Play Ground



Electronics Lab



Laboratory



Laboratory



Class Room



Indoor Sports

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