MAEER'S

MIT | Arts, Commerce & Science College

Affiliated to Savitribai Phule Pune University

Accredited by NAAC with "A" Grade

Academic Year

2024-25

B.Sc. (Industrial Mathematics with Computer Applications)

(As per National Education Policy- 2020)

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**

B.Sc.

Industrial Mathematics with Computer Applications

About the Course

B.Sc. (Industrial Mathematics with Computer Applications) is designed to meet the growing demand for professionals who possess a deep understanding of mathematical principles coupled with proficiency in computer applications. This interdisciplinary program provides students with a unique opportunity to explore the dynamic intersection of mathematics and computer science. The program is meticulously crafted to equip students with a strong foundation in mathematical theory, computational techniques, and practical problem-solving skills. Through a blend of rigorous academic coursework, hands-on laboratory exercises, and real-world applications, students develop the expertise necessary to tackle complex challenges in today's data-driven world. Furthermore, the integration of computer applications into the curriculum enables students to harness the power of technology to analyze data, optimize processes, and make informed decisions.

Objectives of M.Sc (Industrial Mathematics with Computer Applications)

- Strong foundation in mathematical principles, theories, and techniques essential for analyzing and solving complex industrial problems.
- Develop student's proficiency in utilizing computer applications, algorithms, and programming languages relevant to industrial mathematics, fostering the integration of computational techniques with mathematical modeling.
- Cultivate student's ability to apply mathematical and computational methods to address real-world challenges encountered in various industrial sectors.
- Promote critical thinking and analytical skills necessary for students to evaluate, interpret, and optimize industrial processes, systems, and data through mathematical modeling and computational analysis.
- Encourage students to engage in research activities and innovation projects, fostering creativity and the exploration.
- To empower graduates with a comprehensive skill set and mindset necessary to thrive in diverse industrial environments, contributing to innovation, optimization,and sustainable development across various sectors through the application of mathematical and computational principles.

Why choose MIT ACSC?

The course structure offered by MIT ACSC incorporates subjects related to the most advanced and latest developments in software and information technology. The curriculum includes in-demand courses such as python programming, android programming, and Django. Hence, it helps students upgrade their knowledge and understanding of the discipline.The institute has a history of producing outstanding software professionals who have found a place in top companies. The college collaborates with several companies that offer internships and campus placements to start their careers. The institute offers various skill development courses that help improve their skills and enhance their competence. These courses boost their confidence to face the real world through interactive sessions and hands-on training in several technical and personal skills.

Eligibility

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

OR

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

How to Apply?

An eligible student has to apply through the college application form for the entrance examination conducted by college. Admissions will be offered to the students on the basis of their Entrance Exam score.

Program Structure

B.Sc. (Industrial Mathematics with Computer Applications)

B.Sc. (IMCA): SEM 1 | Level 4.5

Course Code	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA1MCT1	Subject-1	Calculus-I	3	-	-	20	30	50	2	-	-	2
U24/IMCA1MCP1		Lab on Calculus-I and Algebra	-	-	4	20	30	50	-	-	2	2
U24/IMCA1MCT2	Subject-2	Database Management System	3	-	-	20	30	50	2	-	-	2
U24/IMCA1MCP2		Lab on Database Management System	-	-	4	20	30	50	-	-	2	2
U24/IMCA1MCT3	Subject-3	Descriptive Statistics	3	-	-	20	30	50	2	-	-	2
U24/IMCA1MCP3		Lab on Descriptive Statistics	-	-	4	20	30	50	-	-	2	2
	Open Elective	College Basket	3	-	-	20	30	50	2	-	-	2
U24/IMCA1SECT1	Skill Enhancement Course (SEC)	Algebra	3	-	-	20	30	50	2	-	-	2
U24/IMCA1IKST1	Indian Knowledge System (IKS)	(Generic)	3	-	-	20	30	50	2	-	-	2
U24/IMCA1AECT1	Ability Enhancement Course (AEC)	English language Communication-I	3	-	-	20	30	50	2	-	-	2
U24/IMCA1VECT1	Value Education Course (VEC)	Environmental Awareness	3	-	-	20	30	50	2	-	-	2
Total			24	0	12	220	330	550	16	0	6	22

B.Sc. (IMCA): SEM 2 | Level 4.5

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA2MCT1	Subject-1	Calculus-II	3	-	-	20	30	50	2	-	-	2
U24/IMCA2MCP1		Lab on Calculus-II and Discrete Mathematics	-	-	4	20	30	50	-	-	2	2
U24/IMCA2MCT2	Subject-2	Problem Solving using C Programming	3	-	-	20	30	50	2	-	-	2
U24/IMCA2MCP2		Lab on Problem Solving using C Programming	-	-	4	20	30	50	-	-	2	2
U24/IMCA2MCT3	Subject-3	Python Programming	3	-	-	20	30	50	2	-	-	2
U24/IMCA2MCP3		Lab on Python Programming	-	-	4	20	30	50	-	-	2	2
	Open Elective	College Basket	-	-	4	20	30	50	-	-	2	2
U24/IMCA2SECT1	Skill Enhancement Course (SEC)	Discrete Mathematics	3	-	-	20	30	50	2	-	-	
U24/IMCA2AECT1	Ability Enhance-ment Course (AEC)	English language Communication-II	3	-	-	20	30	50	2	-	-	2
U24/IMCA2VECT1	Value Education Course (VEC)	Democracy, Election and Governance	3	-	-	20	30	50	2	-	-	2
	Co-Curricular Courses (CC)	NSS/NCC/Yoga Education/Sports/ Cultural/ Health and Wellness-I	-	-	-	-	-	-	-	-	-	2
Total			18	0	16	200	300	500	12	0	8	22

Exit option: Award of UG Certification in Major with 44 credits and an additional 4 credits core NSQF course / Internship in industry/organization/on-campus of 120 Hrs or after successful completion of Certification course by Swayam/ NPTEL MOOC Course.

Program Structure

B.Sc. (Industrial Mathematics with Computer Applications)

B.Sc. (IMCA): SEM 3 I Level 5

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA3MCT1	Major Core	Linear Algebra-I	3	-	-	20	30	50	2	-	-	2
		Ordinary Differential Equations	3	-	-	20	30	50	2	-	-	2
U24/IMCA3MCT2		Lab on Linear Algebra-I & Ordinary Differential Equations	-	-	4	20	30	50	-	-	2	2
U24/IMCA3MCP1												
U24/IMCA3VSCT1	Vocational Skill Development Course (VSC) (Practical)	Software Engineering	3	-	-	20	30	50	2	-	-	2
U24/IMCA3FPP1	Field Project (FP)	Field Project	-	-	2	20	30	50	-	-	2	2
U24/IMCA3MNT1	Minor	Advanced C Programming	3	-	-	20	30	50	2	-	-	2
U24/IMCA3MNP1		Lab on Advanced C Programming	-	-	4	20	30	50	-	-	2	2
		OR										
U24/IMCA3MNT2B		Probability and Distribution	3									
U24/MCA3MNP2B		Lab on Probability &Distribution	-									
	Open Elective	College Basket	3	-	-	20	30	50	2	-	-	2
U24/IMCA3IKST1	Indian Knowledge System (IKS) (Major Subject Specific)	Ancient Indian Mathematics	3	-	-	20	30	50	2	-	-	2
U24/IMCA3AECT1	Ability Enhancement Course (AEC)	Hindi-I/Marathi-I/Sanskrit-I	3			20	30	50	2	-	-	2
	Co-Curricular Courses (CC)	NSS/NCC/Yoga Education/ Sports/ Cultural/ Health and Wellness-II	-	-	-	-	-	-	-	-	-	2
Total			21	0	10	200	300	500	14	0	6	22

B.Sc. (IMCA): SEM 4 I Level 5

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA4MCT1	Major Core	Linear Algebra-II	3	-	-	20	30	50	2	-	-	2
U24/IMCA4MCT2		Numerical Methods	3	-	-	20	30	50	2	-	-	2
U24/IMCA4MCP1		Lab on Linear Algebra-II and Numerical Methods	-	-	4	20	30	50	-	-	2	2
U24/IMCA4VSCT1	Vocational Skill Development Course VSC)	Graph Theory	3	-	-	20	30	50	2	-	-	2
U24/IMCA4FPP1	Community Engagement and Service (CEP)	Community Engagement & Service	-	-	2	20	30	50	-	-	2	2
U24/IMCA4MNT1A	Minor	Data Structure	3	-	-	20	30	50	2	-	-	2
U24/MCA4MNP1A		Lab on Data Structure	-	-	4	20	30	50	-	-	2	2
		OR										
U24/IMCA4MNT2B		Data Analytics										
U24/MCA4MNP2B		Lab on Data Analytics										
	Open Elective	College Basket	-	-	4	20	30	50	-	-	2	2
U24/IMCA4SECP1	Skill Enhancement Course (SEC)	Latex	-	-	4	20	30	50	-	2	-	2
U24/IMCA4AECT1	Ability Enhancement Course (AEC)	Hindi-I/Marathi-I/ Sanskrit-II	3			20	30	50	2	-	-	2
	Co-Curricular Courses (CC)	NSS/NCC/Yoga Education/ Sports/ Cultural/ Health & Wellness-II	-	-	-	-	-	-	-	-	2	
Total			15	0	18	200	300	500	10	0	10	22

Exit option: Award of UG Diploma in major and minor with 88 credits and an additional 4 credits core NSQF course / Internship in industry/ organization or continue with major and minor.

Program Structure

B.Sc. (Industrial Mathematics with Computer Applications)

B.Sc. (IMCA): SEM 5 I Level 5.5

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA5MCT1	Major Core	Number Theory	3	-	-	20	30	50	2	-	-	2
		Real Analysis	3	-	-	20	30	50	2	-	-	2
U24/IMCA3MCT2		Lab on Number Theory and Real Analysis	-	-	4	20	30	50	-	-	2	2
U24/IMCA5MCP1												
U24/IMCA5MCT3		Operations Research	3	-	-	20	30	50	2	-	-	2
U24/IMCA5MCT4		Java	3	-	-	20	30	50	2	-	-	2
U24/IMCA5MCP2		Lab on Java	-	-	4	20	30	50	-	-	2	2
U24/IMCA5MET1A	Major Elective	Web Technology-I	3	-	-	20	30	50	2	-	-	2
U24/IMCA5MEP1A		Lab on Web Technology-I	-	-	4	20	30	50	-	-	2	2
		OR										
U24/IMCA5MET2B		Machine Learning	3	-	-	20	30	50	2	-	-	2
U24/IMCA5MEP2B		Lab on Machine Learning	-	-	4	20	30	50	-	-	2	2
U24/IMCA5VSCT1	Vocational Skill Development Course (VSC)	Coding Theory	-	-	4	20	30	50	-	-	2	2
U24/IMCA5FPP1	Field Project/ Community Engagement and Service (FP/CEP)	Field Project/ Community Engagement and Service	-	-	2	20	30	50	-	-	2	2
U24/IMCA5MNT1	Minor	Website Designing using HTML, CSS and Boot Strap	3	-	-	20	30	50	2	-	-	2
		OR										
U24/IMCA5MNT2		Data Visualization Tools	3	-	-	20	30	50	2	-	-	2
Total			18	0	18	220	330	550	12	0	10	22

Program Structure

B.Sc. (Industrial Mathematics with Computer Applications)

B.Sc. (IMCA): SEM 6 I Level 5.5

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA6MCT1	Major Core	Computational Geometry	3	-	-	20	30	50	2	-	-	2
		Group Theory	3	-	-	20	30	50	2	-	-	2
U24/IMCA6MCT2		Complex Analysis	3	-	-	20	30	50	2	-	-	2
U24/IMCA6MCT3												
U24/IMCA6MCP1		Lab on Group Theory and Complex Analysis	-	-	4	20	30	50	-	-	2	2
U24/IMCA6MCT4		Advanced Java	3	-	-	20	30	50	2	-	-	2
U24/IMCA6MCP2		Lab on Advanced Java	-	-	4	20	30	50	-	-	2	2
U24/IMCA6MET1A	Major Elective	Web Technology-II	3	-	-	20	30	50	2	-	-	2
U24/IMCA6MEP1A		Lab on Web Technology-II	-	-	4	20	30	50	-	-	2	2
		OR										
U24/IMCA6MET2B		Artificial Intelligence	3	-	-	20	30	50	2	-	-	2
U24/IMCA6MEP2B		Lab on Artificial Intelligence	-	-	4	20	30	50	-	-	2	2
U24/IMCA6VSCT1	Vocational Skill Development Course (VSC)	Metric Spaces	3	-	-	20	30	50	2	-	-	2
U24/IMCA6OJT	On Job Training	On Job Training	-	-	2	40	60	100	-		4	4
Total			18	0	14	220	330	550	12	0	10	22

Note: Students shall complete on-job training/Internship in industry/organization/on-campus for 120 hours during winter vacations after Semester V.

Exit option: Award of UG Degree in Major with 132 credits OR Continue with Major or Minor.

OR

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA6MCT1	Major Core	Computational Geometry	3	-	-	20	30	50	2	-	-	2
		Group Theory	3	-	-	20	30	50	2	-	-	2
U24/IMCA6MCT2		Complex Analysis	3	-	-	20	30	50	2	-	-	2
U24/IMCA6MCT3												
U24/IMCA6MCP1		Lab on Group Theory and Complex Analysis	-	-	4	20	30	50	-	-	2	2
U24/IMCA6MCT4		Advanced Java	3	-	-	20	30	50	2	-	-	2
U24/IMCA6MCP2		Lab on Advanced Java	-	-	4	20	30	50	-	-	2	2
U24/IMCA6SLI		Semester Long Internship	-	-	2	100	150	250	-	-	10	10
Total			12	0	10	220	330	550	8	0	14	22

Note: Students shall complete on-job training/Internship in industry/organization/on-campus for 120 hours during winter vacations after Semester V.

Exit option: Award of UG Degree in Major with 132 credits OR Continue with Major or Minor.

Program Structure

B.Sc. (Industrial Mathematics with Computer Applications)

B.Sc. (IMCA): SEM 7 I Level 6

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/MCA7MCT1	Major Core	Laplace Transform	3	-	-	20	30	50	2	-	-	2
		Ring Theory	3	-	-	20	30	50	2	-	-	2
U24/IMCA7MCT2		Partial Differential Equations	-	-	4	20	30	50	-	-	2	2
U24/IMCA7MCT3												
U24/IMCA7MCP1		Lab on Ring Theory and Partial Differential Equations	3	-	-	20	30	50	2	-	-	2
U24/IMCA7MCT4		Design and Analysis of Algorithms	5	-	-	20	30	50	4	-	-	4
U24/IMCA7MCP2		Lab on Design and Analysis of Algorithms	-	-	4	20	30	50	-	-	2	2
U24/IMCA7MET1A	Major Elective	C#.Net	3	-	-	20	30	50	2	-	-	2
U24/IMCA7MEP1A		Lab on C#.Net	-	-	4	20	30	50	-	-	2	2
		OR										
U24/IMCA7MET1B		Deep Learning	3	-	-	20	30	50	2	-	-	2
U24/IMCA7MEP1B		Lab on Deep Learning	-	-	4	20	30	50	-	-	2	2
U24/IMCA7RMT1	Minor	Research methodology	5	-	-	40	60	100	4	-	-	4
Total			22	0	12	200	300	500	16	0	6	22

Program Structure

B.Sc. (Industrial Mathematics with Computer Applications)

B.Sc. (IMCA): SEM 8 I Level 6

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA8MCT1	Major Core	Fourier Series and Fourier Transform	3	-	-	20	30	50	2	-	-	2
		Optimization Techniques	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MCT2		Lab on Fourier Series and Fourier Transform and Optimization Techniques	-	-	4	20	30	50	-	-	2	2
U24/IMCA8MCP1												
U24/IMCA8MCT3		Topology	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MCT4		Mobile Technology	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MCP2		Lab on Mobile Technology	-	-	4	20	30	50	-	-	2	2
U24/IMCA8MCT5		Block Chain Technology	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MET1A	Major Elective	ASP.Net	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MEP1A		Lab on ASP.Net	-	-	4	20	30	50	-	-	2	2
		OR										
U24/IMCA8MET1B		Computer Vision	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MEP1B		Lab on Computer Vision	-	-	4	20	30	50	-	-	2	2
U24/IMCA8OJTP1	On Job Training	On Job Training	-	-	2	40	60	100	-	-	4	4
Total			18	0	14	220	330	550	12	0	10	22

Award of Four years UG Honors with Research Degree in Major and Minor with 176 credits.

OR

Course	Course Type	Course Name	Teaching Scheme Hrs/Week			Examination Scheme and Marks			Credits			
			TH	TU	PR	CE	EE	Total	TH	TU	PR	Total
U24/IMCA8MCT1	Major Mandatory	Fourier Series and Fourier Transform	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MCT2		Optimization Techniques	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MCP1		Lab on Fourier Series and Fourier Transform and Optimization Techniques	-	-	4	20	30	50	-	-	2	2
U24/IMCA8MCT3		Topology	3	-	-	20	30	50	2	-	-	2
U24/IMCA8MCT4		Block Chain Technology	3	-	-	20	30	50	2	-	-	2
	Semester Long Internship	Semester Long Internship	-	-	2	120	180	300	-	-	12	12
Total			12	0	6	220	330	550	8	0	14	22

Award of Four years UG Honors with Research Degree in Major and Minor with 176 credits.

Our Eminent Recruiters

College Campus


Computer Lab

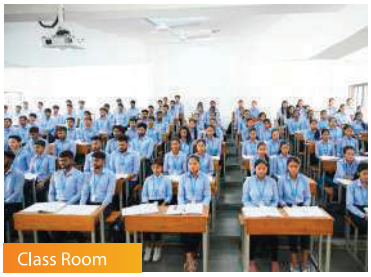

Class Room


Canteen


Play Ground


Computer Lab


Indoor Sports


Class Room


Computer Lab


Library


Garden


Class Room


Play Ground


Electronics Lab


Laboratory


Indoor Sports


Laboratory


Class Room

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