MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
(Formerly West Bengal University of Technology)
Syllabus of B. Sc. in IT
(Effective from 2023-24 Academic Sessions)

Graduate Attribute:

The Bachelor of Science in Information Technology (B.Sc. IT) program is meticulously crafted to provide students with a comprehensive and contemporary understanding of the multifaceted field of information technology. The associated Graduate Attributes (GAs) encompass a broad spectrum of knowledge, competencies, values, and skills intended to foster holistic development and contribute meaningfully to society. Through a blend of rigorous academic coursework and practical experiences, students acquire a well-rounded skill set that extends beyond theoretical concepts. The GAs, cultivated through curricular, co-curricular, and extra-curricular initiatives, are designed to be transferrable globally, preparing graduates to navigate diverse professional landscapes and tackle the complex challenges posed by the dynamic and ever-evolving field of information technology.

1. **Technical Competence:**
   Graduates will possess a strong foundation in computer science concepts, programming languages, software development methodologies, and technical tools commonly used in the industry.
2. **Problem-Solving Skills:**
   Graduates will be adept at analyzing complex problems, designing effective solutions, and implementing these solutions using appropriate programming languages and technologies.
3. **Software Development:**
   Graduates will be skilled in the entire software development lifecycle, including requirements analysis, design, implementation, testing, deployment, and maintenance of software applications.
4. **Programming Proficiency:**
   Graduates will demonstrate expertise in at least one or more programming languages and the ability to write efficient, maintainable, and well-documented code.
5. **Database Management:**
   Graduates will understand database design principles, be familiar with database management systems, and be capable of designing and managing databases for various applications.
6. **Communication Skills:**
   Graduates will possess effective communication skills, including the ability to articulate technical concepts clearly to both technical and non-technical stakeholders.
7. **Teamwork and Collaboration:**
   Graduates will work effectively as part of a team, demonstrating the ability to collaborate, share ideas, and contribute positively to group projects.
8. **Ethical and Professional Behavior:**
   Graduates will understand the ethical implications of technology and demonstrate professional conduct in their work, respecting intellectual property rights, privacy, and security considerations.
9. **Continuous Learning:**
   Graduates will recognize the dynamic nature of the field and the need for ongoing learning and skill development to stay up-to-date with emerging technologies and industry trends.
10. **Adaptability:**
    Graduates will be adaptable to changing technological landscapes and capable of applying their foundational knowledge to new and evolving challenges.
11. **Critical Thinking:**
    Graduates will be capable of evaluating information critically, making informed decisions, and applying logical reasoning to solve complex problems.
12. **Project Management:**
    Graduates will have a basic understanding of project management principles, enabling them to manage time, resources, and tasks effectively within software development projects.
13. **User-Centered Design:**
    Graduates will appreciate the importance of designing software applications with user experience in mind, ensuring usability, accessibility, and user satisfaction.

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Curriculum Structure

SEM-1

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM101 BSCITM191	Fundamental of Programming using C Fundamental of Programming using C lab	3	0	2	5
2.		BSCITM102 BSCITM192	Introduction to Digital Electronics Digital Electronics Lab	3	0	2	5
3.	**Minor**	MIM101	Principles of Management	3	0	0	3
4.	**GE**		Anyone from GE Basket A or D	3	0	0	3
5.	**AECC**	AECC101	English & Professional Communication	2	0	0	2
6.	**SEC**	SEC101	Life Skills & Personality Development	2	0	0	2
7.	**VAC**	VAC181A VAC181B VAC181C	Yoga Health & Wellness Sports	2	0	0	2
Total Credit							22

SEM-2

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM201 BSCITM 291	Programming with Python Programming with Python Lab	3	0	2	5
2.		BSCITM202	Study of Computer Architecture and organization	5	0	0	5
3.	**Minor**	MIM201	Organization Behavior	3	0	0	3
4.	**GE**		Any one from GE Basket B or E	3	0	0	3
5.	**AECC**	AECC201	Modern Indian Languages and Literature	2	0	0	2
6.	**SEC**	SEC201	IT Tools for Business	2	0	0	2
7.	**VAC**	VAC281A VAC281B VAC281C VAC281D	Critical Thinking NSS Mental Health Environmental Studies	2	0	0	2
Total Credit							22

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SEM-3

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM301 BSCITM391	Study of Data structure and Algorithms Data structure lab Using C/Python	3	0	2	5
2.		BSCITM302 BSCITM392	Database Management System Database management System Lab	3	0	2	5
3.	**Minor**	MIM301	Principal of Marketing	4	0	0	4
4.	**GE**		Any one from GE Basket C or F	3	0	0	3
5.	**AECC**	AECC301	The Constitution, Human Rights and Law	2	0	0	2
6.	**SEC**	SEC301	Understanding basics of Cyber Security	2	0	0	2
Total Credit							21

SEM-4

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM401	Principles of Software Engineering	4	0	0	4
2.		BSCITM402 BSCITM492	Operating System with UNIX UNIX lab	3	0	1	4
3.		BSCITM403 BSCITM493	OOPs with JAVA OOPs with JAVA lab	3	0	2	5
4.	**Minor**	MIM401	Human resource Management	3	1	0	4
5.		MIM402	A. Sales and distribution management B. E-commerce	3	1	0	4
6.	**AECC**	AECC401	Society Culture and Human Behavior	2	0	0	2
Total Credit							23

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SEM-5

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM501 BSCITM591	Computer Networking Computer Networking Lab	3	0	2	5
2.		BSCITM502	Data Warehousing and Data Mining	5	0	0	5
3.	**Minor**	MIM501	Financial Management	4	0	0	4
4.		MIM502	Entrepreneurship	4	0	0	4
5.	**SEC**	SEC581	Internship	0	0	4	4
Total Credit							22

SEM-6

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM601	Artificial Intelligence	5	0	0	5
2.		BSCITM602	Information and Cyber security	4	0	0	4
3.		BSCITM603 BSCITM691	Web Technology Web Technology Lab	3	0	2	5
4.	**Minor**	MIM601	Customer relationship management	4	0	0	4
5.		MIM602	Career planning and Management	4	0	0	4
Total Credit							22

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BSC-IT (Honours)

SEM-7

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM701 BSCITM791	Computer Graphics Computer Graphics lab	3	0	2	5
2.		BSCITM702	Research Methodology	4	1	0	5
3.		BSCITM703-A/-B	A. Theory of Computation B. Cloud Computing	3	1	0	4
4.	**Minor**	MIM701	Consumer behavior	4	0	0	4
5.		MIM702	Strategic management	4	0	0	4
Total Credit							22

SEM-8

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM801	IOT and its Application	4	1	0	5
2.		BSCITM802 BSCITM892	Distributed Database Management System Distributed Database Management System Lab	3	0	2	5
3.	**DSE1**	BSCITM803-A/-B/-C	A. Introduction to Data Science B. Machine Learning C. Neural Network and Deep Learning	3	0	0	3
4.	**DSE2**	BSCITM804-A/-B/-C	A. Big Data Analytics B. Data Security & Privacy C. Data Visualization	3	0	0	3
5.	**SEC**	SEC881	Major Project	0	0	6	6
Total Credit							22

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BSC-IT (Honours with Research)

SEM-7

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM701 BSCITM791	Computer Graphics Computer Graphics lab	3	0	2	5
2.		BSCITM702	Research Methodology	4	1	0	5
3.		BSCITM703-A/-B	A. Theory of Computation B. Cloud Computing	3	1	0	4
4		BSCITM704	Dissertation work [Evaluation in VIII semester]	-	-	-	-
5.	**Minor**	MIM701	Consumer behavior	4	0	0	4
6.		MIM702	Strategic management	4	0	0	4
Total Credit							22

SEM-8

Sl.	Subject Type	Code	Subject Name	Credits			Total Credits
				L	T	P	
1.	**Major**	BSCITM801	IOT and its Application	4	1	0	5
2.		BSCITM802 BSCITM892	Distributed Database Management System Distributed Database Management System Lab	3	0	2	5
3.	**SEC**	SEC882	Dissertation [started in VII semester]*	0	0	12	12
Total Credit							22

***The Dissertation work will start from the beginning of fourth year of BSC-IT (Honours with Research) Program.**