



## Program Structure of Master of Science in Information Technology

<b>Institution</b>	:	Department of Information Technology	
<b>Programme Title</b>	:	M.Sc. – Information Technology	
<b>Batch</b>	:	2024-26	
<b>Duration of the program (in Yrs):</b>	3		<b>Level – PG</b>
<b>Semesters</b>	:	2	

### 1. Programme Mission:

This proposal outlines the structure and curriculum of the MSc IT program, which is designed to provide advanced knowledge and skills in Information Technology. The program includes a blend of core courses, industry-specific electives, internships, and projects, ensuring that students are well-prepared for both academic and industry challenges. Additionally, students have the flexibility to enroll in open platform courses aligned with their industry internships.

### 2. Programme Educational Objectives/Goals:

- i. Students will be able to apply concepts of mathematics, science and computing in the domain of computer science and applications.
- ii. Students will be able to design and develop interdisciplinary and innovative systems.
- iii. Student will be able to inculcate effective communication skills, teamwork, ethics, leadership in preparation for a successful career in industry and R&D organizations.

### 3. Programme Operational Objective(POOs)

- i. DITE intends to provide educational excellence in Teaching/Academic Delivery and Research.
- ii. DITE will facilitate an academically conducive environment for holistic development of the students who will further enhance themselves in being a good citizen.
- iii. DITE will facilitate environment for innovation and research excellence for the intellectual growth of the faculty so that they can inculcate the ethics and engage the students in life- long learning.
- iv. DITE will facilitate cultivation of 101 attributes of the university and ethical conduct amongst the students, faculty and staff.
- v. DITE will encourage the cultural diversity and a sense of social and environment responsibility through the various curricular, co-curricular and extension activities.
- vi. DITE will provide ample opportunities for international exposure to the faculty and students.
- vii. DITE will be involved in continual improvement of processes and system and aim to attain the national and international accreditations and university rankings.
- viii. DITE will build strong industry interaction by way of alumni networks and empanelment of expertise from Industry.
- ix. DITE will facilitate employment opportunities and also be instrumental to support students to start their own ventures.

- x. DITE will facilitate good governance and will show honesty in discharging the responsibilities and execution of policies and programs.

**Semester 1 (Taught at Tashkent Campus)**

S.No	Course Code	Course Name	Credits	L	T	P	S
1	CSE910	Advanced Artificial Intelligence and Machine Learning	6	3	0	2	4
2	IT602	Advanced Data Communication and Computer Networks	6	3	0	2	4
3	CSE633	Cloud Computing and Virtualization	6	3	0	2	4
4	NTCC	Industry Internship	4	-	-	-	4
5	-	Industry Specific Course I	5	3	0	2	2
<b>Total</b>			<b>27</b>				

**Semester 2 (Taught at Tashkent Campus)**

S.No	Course Code	Course Name	Credits	L	T	P	S
1	CSIT805	Cloud Infrastructure and Services	6	3	0	2	4
2	IT715	Data Science and Big Data Analytics	6	3	0	2	4
3	CSIT654	Network Security and Cryptography	6	3	0	2	4
4	NTCC	Industry Internship	4	-	-	-	4
5		Industry Specific Course II	5	3	0	2	2
<b>Total</b>			<b>27</b>				

**Semester 3 (Taught at Dubai Campus)**

S.No	Course Code	Course Name	Credits	L	T	P	S
1	CSIT816	Artificial Intelligence and Robotics	6	3	0	2	4
2	CSIT727	Internet of Everything	6	3	0	2	4
3	CSIT745	Research Methodologies	6	3	0	2	4
4	CSIT761	Business Intelligence and Analytics	6	3	0	2	4

5	NTCC	Minor Project	4	-	-	-	4
<b>Total</b>			<b>28</b>				

#### Semester 4 (Taught at Tashkent Campus)

S.No	Course Code	Course Name	Credits	L	T	P	S
1	NTCC	Major Project	20	-	-	-	20
<b>Total</b>			<b>20</b>				

#### 4. Industry-Specific Courses

To ensure that students gain relevant industry skills, the program includes industry-specific courses in the first and second semesters. These courses can be taken from any **open platform** that aligns with the student's internship and career goals. This flexibility allows students to tailor their learning experience to meet specific industry demands.

#### 5. Programme Learning Outcomes (PLOs)

- i. The student will apply knowledge of disruptive technology, mathematics, sciences and engineering to solve complex problems using concepts of computer science & Information Technology.
- ii. The student will identify, formulate research literature and analyze complex computer science & engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
- iii. The student will create solutions for computer science & engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, cultural, societal, and environmental considerations
- iv. The student will carry out investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid solution to industry 4.0.
- v. The student will create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modelling to different computer science and engineering activities with an understanding of the limitations.
- vi. The student will apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and consequent responsibilities relevant to the professional engineering practice
- vii. The student will recognize the impact of the professional engineering solutions in societal and environmental contexts and demonstrate the knowledge if and need for the sustainable development.
- viii. The student will apply ethical principles and practice professional ethics and responsibilities and norms of the engineering practice
- ix. The student will demonstrate effectiveness as an individual and as a member or leader of team assembled to undertake a common goal in multidisciplinary settings.

- x. The student will use effective communication to cater to both technical and non-technical audiences.
- xi. The student will demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team as well as to manage projects in multidisciplinary environments
- xii. The student will recognize the need for, and will engage in independent and life-long learning in the broadest context of technological change.