

**Gandhinagar Institute of Computer Science & Applications (GICSA)**  
**Postgraduate Program in Master of Science**  
Master of Science (Information Technology) (5 years Integrated)

**Academic Regulations**

**R.1 ADMISSION:**

A candidate for admission to the post-Graduate programme in M.Sc. (Information Technology) (Integrated) must have passed the 10+2 Examination in any stream or equivalent from a recognized board or an examination recognized as equivalent thereto.

**R.2 PROGRAMME OF STUDY:**

A student shall follow at a time any one of the prescribed programmes set out in the programme of study enclosed at Annexure – I.

**R.3 EXEMPTIONS:**

A candidate shall be eligible for exemption(s) for the subjects studied at the bachelor's degree Examination or at the Post Graduate Degree Examination. Exemptions shall be subject to approval by the Head of the GICSA and Vice Chancellor (Provost) of Gandhinagar University.

**R.4 REGISTRATION**

To earn subject credits in a semester a student must register for the subjects at the commencement of the semester.

A student shall not be permitted to attend any classes without completing his registration formalities. The registration formalities must be completed by the student in person or on e-Governance software of the Gandhinagar University.

**R.5 REQUIREMENTS FOR REGISTRATION**

A student can register for a subject provided following conditions are satisfied:

The student has successfully completed the pre-requisites for the subject, and the subject is being offered in the semester.

If a student is required to repeat one or more subjects due to inadequate performance, it is essential that he/she must register for these subjects in the earliest following semester in which the courses are offered.

Any registration which violates the above requirements will automatically be canceled and grades obtained, if any, shall be withdrawn.

**R.6 ASSESSMENT OF STUDENT PERFORMANCE IN SUBJECTS**

Grading in each subject is assigned based on earned marks. The performance of a student in a subject is judged through (i) Continuous Internal Evaluation of theory and (ii) End-Semester Theory Examinations. The minimum passing criteria in the end-semester theory examination (70 marks) in each subject is 40 %.

Continuous internal evaluation component (30 Marks) may be done through written tests (MSE/RMSE) and/or quizzes, Seminar, carry-home exercise etc.

The overall passing criteria in theory is 45% from total marks (100 marks).

**External Viva-voce, Project Work and Dissertation** will be conducted only at the end of the respective semester by the University and overall passing (out of total marks) will be 50%.

#### **R.7 EXAMINATIONS**

The end-semester examinations for all subjects offered in each semester of an academic year will be conducted by the University.

No student shall be permitted for the end semester examination if he/she has not completed the required term work as per the rules and regulations in force.

The ratio between the external and internal theory assessment will be **70:30**.

#### **R.8 LETTER GRADES**

The overall performance of a student in a course is represented by a letter grade with equivalent grade points as below:

<b>AA</b>	10	<b>CC</b>	06
<b>AB</b>	09	<b>CD</b>	05
<b>BB</b>	08	<b>DD</b>	04
<b>BC</b>	07	<b>FF</b>	00

A subject is completed successfully, i.e., credit is earned for a subject, when a letter grade **DD** or better is obtained in the subject.

#### **R.9 FAILURE IN A SUBJECT**

A student does not earn any credit for a subject when he/she gets a letter grade **FF** in the subject.

The letter grade **FF** obtained in a subject will be shown in the final transcript issued to the student whether he/she subsequently obtains another letter grade in a repeat attempt.

#### **R.10 PERFORMANCE EVALUATION (SGPA AND CGPA)**

The student's performance in a semester will be indicated by the semester grade point average (SGPA). The SGPA and CGPA (Cumulative grade point average) are calculated as below.

$$SGPA = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$

Where  $C_i$  is the number of credits of the course  $i$ ;  $G_i$  is the grade point for the course  $i$ ; where  $i= 1$  to  $n$ ,  $n$ = number of courses in a semester.

Performance at the end of two or more consecutive semesters will be indicated by the CGPA. CGPA is calculated as below.

$$CGPA = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$

Where  $C_i$  is the number of credits of the course  $i$ ;  $G_i$  is the grade point for the course  $i$ ; where  $i= 1$  to  $n$ ,  $n$ = number of courses of all semesters up to which CGPA is computed.

#### **R.11 DISCONTINUATION FROM REGULAR STUDY**

Students who have more than **4 backlog** up to the current semester excluding immediate previous semester are not eligible to continue study till the said criteria is fulfilled.

In such case student shall not be permitted for regular study of concerned next semester.

#### **R.12 REPEAT SUBJECTS**

A Subject which usually accounts for a higher rate of failure may be offered again as a repeat subject or subjects as the case may be in the following semester.

Repeat subjects are not offered to students as a matter of right. These subjects are offered subject to the availability of manpower and other facilities.

#### **R.13 REQUIREMENTS FOR THE AWARD OF DEGREE**

**To be eligible for award of the degree,**

- Total of at least **212** credits for M.Sc. Information Technology (Integrated), as prescribed under the programme of studies with **(subject to exemption granted for credits)**.
- A minimum Cumulative Grade Point Average (CGPA) of 4.00.
- No course with letter grade FF.
- A student who for whatever reason is not able to complete the programme within the normal period or the minimum duration prescribed for the programme, may be allowed two years period beyond the normal period to clear the backlogs to be qualified for the degree.

The general formula, therefore, should be as follows:

- a. **Time Span = N + 2years** for the completion of the programme.

Where N stands for the normal minimum duration prescribed for the completion of the programme.

- b. In exceptional circumstances a further extension of one more year may be granted upon the representation to Honorable Vice Chancellor (Provost) stating the reason for extension request with supporting documents.
- c. During the extended period student shall be considered as private candidate and also not eligible for ranking.

**R.14 AWARD OF CLASS**

The class awarded to a student with his Master of Science degree is decided by final **CGPA** as under.

DISTINCTION - CGPA  $\geq$  7.5

FIRST CLASS - CGPA  $\geq$  6.0

SECOND CLASS - CGPA  $\geq$  5.0

PASS CLASS - CGPA  $<$  5.0

**R.15 TRANSCRIPT:**

The Transcript issued to the student at the time of leaving the University will contain a consolidated record of all the courses taken by him, grades obtained, **SGPA, CGPA** etc.

**R.16 ATTENDANCE:**

A Student will be required to attend at least 75% of the total theory lectures organized in each subject during the semester.

The subjects to be covered in the syllabi of M.Sc. (Information Technology) (Integrated) are given at Annexure 1.

**Annexure 1**

M.Sc. (Information Technology)	Credit	M.Sc. (Information Technology)	Credit
<b>Subjects</b>		<b>Subjects</b>	
<b>First Semester</b>	<b>23</b>	<b>Sixth Semester</b>	<b>22</b>
Communication Skills in English	3	Software Engineering	3
Basic Mathematics	6	Advanced Mobile Application Development	4
Principles of Management	3	Building Web Services and Restful API	5
Computer Fundamentals	3	Advance Python for Data Analysis	3
Fundamentals of C	4	Software Quality Assurance	4
Web Fundamentals	4	(E1) Basics of Data Science	3
<b>Second Semester</b>	<b>22</b>	(E1) Data Visualization	
Environmental Studies	2	<b>Seventh Semester</b>	<b>21</b>
Basic Statistics and Discrete Mathematics	6	Design Pattern	3
Digital Electronics	4	Web Development Using Advance Java, Spring Boot & JDBC	5
Fundamentals of DBMS	5	Mobile Application Development Project	2
Advanced Programming in C	4	Design and Analysis of Algorithms	5
Seminar	1	(Elective 2) Introduction to IoT and Big Data	
<b>Third Semester</b>	<b>22</b>	(Elective 2) Big Data Analytics with Hadoop	3
Universal Human values	2	(Elective 3) SEO & Digital Media Marketing	3
Data structures	4	(Elective 3) Image Processing	
Advanced Database Management System	4	<b>Eighth Semester</b>	<b>21</b>
Object Oriented Programming with JAVA	5	Basics of NoSQL & MONGO DB	4
PHP and MySQL	5	Data Warehouse and Data Mining	4
UI/UX Design	2	Advanced Web Application Development Project for e-commerce	2
<b>Fourth Semester</b>	<b>23</b>	Machine Learning	5
Indian Constitution	2	Introduction to Cloud Computing	3
Fundamentals of Operating System	4	(Elective 4) Cryptography	3

Web Programming with PHP and LARAVEL	5	(Elective 4) Computer Vision	
Python Programming	5	<b>Ninth Semester</b>	<b>21</b>
Computer Networks	3	Dissertation / Technical Writing	4
Management Information System	4	DevOps Practices and Tools	5
<b>Fifth Semester</b>	<b>22</b>	Software Project Management	3
Mobile Application Development	4	Deep Learning with Artificial Neural Networks	6
Web Development for E-commerce	4	(Elective 5) Blockchain Technology	3
Cyber Security	4	(Elective 5) Virtual Reality and Augmented Reality	
Web Application Development Project II	2	(Elective 5) Agile Software Development Methodologies	
Advance Java	4	<b>Tenth Semester</b>	<b>15</b>
(Elective 2) Web Development Using Python and DJANGO	4	Internship / Software Project Development	15
( <u>Elective 2) Web Development using ASP.Net</u>			
<b>Total Credits</b>			<b>212</b>