

**Gandhinagar Institute Technology**  
**Post Graduate Program in Engineering/Technology**

Master of Technology (Software Engineering)

Master of Technology (Thermal Engineering)

Master of Technology (CAD-CAM)

**Master of Technology Computer Engineering (Cyber Security)**

**Academic Regulations**

**R.1 ADMISSION**

A candidate for admission to the two-year Master of Technology (M.Tech.) must have eligibility as per the AICTE/Gujarat Government/ACPC/UGC rules for the program.

**R.2 PROGRAMME OF STUDY**

A student shall follow the prescribed programme set out in the programme of study enclosed at Annexure – 1 to 4 for the respective programme.

**R.3 EXEMPTIONS**

Exemptions are not applicable for the MTech. Program.

**R.4 REGISTRATION**

Subject registration is required only for the elective subjects offered in the respective programme for enrolled students in the respective regular program/course.

A student shall not be permitted to attend any classes without completing his/her 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**

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

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

Grading in each subject are assigned based on earned marks. The performance of a student in a subject is judged through (i) Continuous Internal Evaluation of theory and practical (ii) End-Semester Theory and practical Examinations. The minimum passing criteria in each subject is 50%.

Continuous internal evaluation component may be done through written tests (MSE/RMSE) and/or quizzes, Seminar, assignment etc. in case of theory and practical performance in lab/case study/viva in case of practical.

External Viva-voce 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 (Theory and Practical) 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 **60:40**.

## **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:

AA	10	CC	06
AB	09	CD	05
BB	08	DD	04
BC	07	FF	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 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 a 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**

A total of **70** credits as prescribed under the programme of studies.

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:

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

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

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.

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 Valuation degree is decided by final CGPA as under.

DISTINCTION -  $\text{CGPA} \geq 7.5$

FIRST CLASS -  $\text{CGPA} \geq 6.0$

SECOND CLASS -  $\text{CGPA} \geq 5.0$

PASS CLASS -  $\text{CGPA} < 5.0$

#### **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 respective programme are given at M.Tech. SE-Annexure 1, CAD-CAM Annexure 2 and Thermal Engineering Annexure 3.

## MTech. (Cyber Security) Annexure 1.

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<b>Program Name: Master of Technology (02)</b>							<b>Program Code: CE (007) Software Engineering</b>					
<b>Semester / Year : Second Year Master of Technology - Semester III</b>							<b>Effective From Academic Year: 2023-24</b>					
Subject Code	Course Type	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
				L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
10070301	Internal Review	Internal Review I	2	0	0	4	4	0	0	0	100	100
10070302	Dissertation	Dissertation Phase I	14	0	0	28	28	0	0	100	0	100
			16				32					200
<b>Semester / Year : Second Year Master of Technology - Semester IV</b>							<b>Effective From Academic Year: 2023-24</b>					
Subject Code	Course Type	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
				L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
10070401	Internal Review	Internal Review II	2	0	0	4	4	0	0	0	100	100
10070402	Dissertation	Dissertation Phase II	14	0	0	28	28	0	0	100	0	100
			16				32					200

## Annexure 2: MTech. CAD-CAM

Program Name: Master of Technology (02)							Program Code: ME CAD-CAM (008)						
Semester / Year : First Year Master of Technology - Semester I							Effective From Academic Year: 2022-23						
Subject Code	Course Type	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)	
				L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment		
10000152	Audit Course	Disaster Management	0	2	0	0	2	0	50	0	0	50	
10000151	MLC	Research Methodology and IPR	3	1	1	2	4	0	0	80	20	100	
10080109	Core-1	Applied Mathematics for Engineers	4	4	0	0	4	60	40	0	0	100	
10080101	Core-2	Computer Aided Tools for Manufacturing	4	3	0	2	5	60	40	30	20	150	
10080102	Core-3	Computer Application in Design	5	3	0	4	7	60	40	30	20	150	
	Program Elective I	-	5	4	0	2	6	60	40	30	20	150	
			21				26					700	
10080111	Program Elective I	Rapid Prototyping											
10080112	Program Elective I	Advanced Finite element Analysis											
10080113	Program Elective I	Design of Manufacturing Systems											



Program Name: Master of Technology (02)								Program Code: ME CAD-CAM (008)					
Semester / Year : First Year Master of Technology - Semester II								Effective From Academic Year: 2022-23					
Subject Code	Course Type	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)	
				L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment		
10000251	Audit Course	Technical Writing	0	2	0	0	2	0	50	0	0	50	
10080201	Core-4	Mechanism Design and Analysis	3	3	0	0	3	60	40	0	0	100	
10080202	Core-5	CNC Technology	4	3	0	2	5	60	40	30	20	150	
	Program Elective II	-	5	4	0	2	6	60	40	30	20	150	
	Program Elective III	-	6	4	2	0	6	60	40	0	0	100	
10080209	Core	Research Review & Seminar	3	0	0	6	6	0	0	0	100	100	
	Program Elective IV	-	2	2	0	0	2	60	40	0	0	100	
			23				30					750	
10080211	Program Elective II		Mechanical Behaviour of Material										
10080212	Program Elective II		Design for Manufacturing and Assembly										
10080213	Program Elective II		Lean and Advanced Manufacturing System										
10080221	Program Elective III		Computer Control and Process Planning										
10080222	Program Elective III		Quality Management										
10080223	Program Elective III		Industrial Robotics										
10080231	Program Elective IV		Cost Management of Engineering Projects										
10080232	Program Elective IV		Industrial Safety										
10080233	Program Elective IV		Composite Materials										

<b>Program Name: Master of Technology (02)</b>				<b>Program Code: ME CAD-CAM (008)</b>								
<b>Semester / Year : Second Year Master of Technology - Semester III</b>				<b>Effective From Academic Year:</b>								
Subject Code	Course Type	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
				L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
10080301	Internal Review	Internal Review I	2	0	0	4	4	0	0	0	100	100
10080302	Dissertation	Dissertation Phase I	14	0	0	28	28	0	0	100	0	100
			16				32					200

<b>Program Name: Master of Technology (02)</b>				<b>Program Code: ME CAD-CAM (008)</b>								
<b>Semester / Year : Second Year Master of Technology - Semester IV</b>				<b>Effective From Academic Year:</b>								
Subject Code	Course Type	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
				L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
10080401	Internal Review	Internal Review II	2	0	0	4	4	0	0	0	100	100
10080402	Dissertation	Dissertation Phase II	14	0	0	28	28	0	0	100	0	100
			16				32					200

### **Annexure 3: MTech. (Thermal Engineering)**

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Program Name: Master of Technology (02)								Program Code: ME TE (009)				
Semester / Year : First Year Master of Technology - Semester II								Effective From Academic Year: 2022-23				
Subject Code	Course Type	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
				L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
10000251	Audit Course	Technical Writing	0	2	0	0	2	0	50	0	0	50
10090201	Core-4	Design of Heat Exchanger	4	3	0	2	5	60	40	30	20	150
10090202	Core-5	Energy Management in Thermal system	4	3	1	0	4	60	40	0	0	100
	Program Elective II	-	4	3	0	2	5	60	40	30	20	150
	Program Elective III	-	4	3	0	2	5	60	40	30	20	150
10090209	Core	Research Review & Seminar	3	0	0	6	6	0	0	0	100	100
	Program Elective IV	-	2	2	0	0	2	60	40	0	0	100
			21				29					800

10090211	Program Elective II	Advanced Internal Combustion Engine
10090212	Program Elective II	Computational Fluid Dynamics
10090213	Program Elective II	Design and Optimization of Thermal Systems
10090221	Program Elective III	Advanced Air Conditioning
10090222	Program Elective III	Solar Energy Engineering Advanced Thermal Turbo
10090223	Program Elective III	Machines
10080231	Program Elective IV	Cost Management of Engineering Projects
10080232	Program Elective IV	Industrial Safety
10080233	Program Elective IV	Composite Materials

<b>Program Name: Master of Technology (02)</b>				<b>Program Code: ME TE (009)</b>								
<b>Semester / Year: Second Year Master of Technology - Semester III</b>				<b>Effective From Academic Year:</b>								
<b>Subject Code</b>	<b>Course Type</b>	<b>Subject Name</b>	<b>Credit</b>	<b>Hours per week</b>				<b>Theory (Marks)</b>		<b>Practical (Marks)</b>		<b>Total (Marks)</b>
				<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
10090301	Internal Review	Internal Review I	2	0	0	4	4	0	0	0	100	100
10090302	Dissertation	Dissertation Phase I	14	0	0	28	28	0	0	100	0	100
			16				32					200

<b>Program Name: Master of Technology (02)</b>				<b>Program Code: ME TE (009)</b>								
<b>Semester / Year : Second Year Master of Technology - Semester IV</b>				<b>Effective From Academic Year:</b>								
<b>Subject Code</b>	<b>Course Type</b>	<b>Subject Name</b>	<b>Credit</b>	<b>Hours per week</b>				<b>Theory (Marks)</b>		<b>Practical (Marks)</b>		<b>Total (Marks)</b>
				<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
10090401	Internal Review	Internal Review II	2	0	0	4	4	0	0	0	100	100
10090402	Dissertation	Dissertation Phase II	14	0	0	28	28	0	0	100	0	100
			16				32					200

**MTech. Computer Engineering (Cyber Security) Annexure 4.**

<b>Program Name: Master of Technology (02)</b>							<b>Program Code:</b>				
<b>Semester / Year : First Year Master of Technology - Semester I</b>							<b>Effective From Academic Year: 2023-24</b>				
Subject Code	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
			L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
	Network Security Fundamentals	4	2	1	2	5	60	40	30	20	150
	Cryptography and Network Security	4	2	1	2	5	60	40	30	20	150
	Information Security Management	4	2	1	2	5	60	40	30	20	150
	Secure Software Development	4	2	1	2	5	60	40	30	20	150
	Legal and Ethical Aspects of Cybersecurity	4	2	1	2	5	60	40	30	20	150
		20				25					750
<b>Program Name: Master of Technology (02)</b>							<b>Program Code:</b>				
<b>Semester / Year : First Year Master of Technology - Semester II</b>							<b>Effective From Academic Year: 2023-24</b>				
Subject Code	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
			L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
	Advanced Network Security	4	2	1	2	5	60	40	30	20	150
	Web Application Security	4	2	1	2	5	60	40	30	20	150
	Intrusion Detection and Prevention Systems	4	2	1	2	5	60	40	30	20	150
	Secure System Design and Architecture	4	2	1	2	5	60	40	30	20	150
	Cyber Threat Intelligence	4	2	1	2	5	60	40	30	20	150
		20				25					750

<b>Program Name: Master of Technology (02)</b>							<b>Program Code:</b>				
<b>Semester / Year : First Year Master of Technology - Semester III</b>							<b>Effective From Academic Year: 2023-24</b>				
Subject Code	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
			L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
	Digital Forensics and Incident Response	3	1	1	2	4	60	40	30	20	150
	Wireless and Mobile Security	3	1	1	2	4	60	40	30	20	150
	Cloud Security	3	2	0	2	4	60	40	30	20	150
	Cybersecurity Risk Management	3	2	0	2	4	60	40	30	20	150
	Mini Project/Dissertation Phase-I	6	0	0	12	12	0	0	100	0	100
		18				28					850
<b>Program Name: Master of Technology (02)</b>							<b>Program Code:</b>				
<b>Semester / Year : First Year Master of Technology - Semester IV</b>							<b>Effective From Academic Year: 2023-24</b>				
Subject Code	Subject Name	Credit	Hours per week				Theory (Marks)		Practical (Marks)		Total (Marks)
			L	T	P	Total	University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
	Secure Coding and Software Testing	3	1	1	2	4	60	40	30	20	150
	Secure IoT (Internet of Things)	4	2	1	2	5	60	40	30	20	150
	Cybersecurity Audit and Compliance	4	2	1	2	5	60	40	30	20	150
	Mini Project /Dissertation Phase-II	6	0	0	12	12	0	0	100	0	100
		17				26					550