# M.TECH - COMPUTER SCIENCE AND ENGINEERING

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# ABOUT PROGRAM


1. M.Tech (CSE) in Data Science, AI And ML
2. M.Tech (CSE) in IoT & Automation

Augmenting cutting edge skills is the core determination of GSFC University. To supplement and nourish these skills, strong industrial support is a vital agent. Students at GSFC University receive a unique opportunity in the form of hands-on training at industries besides the classroom learning that empower them for their career development in multiple ways. The M.Tech Computer Science and Engineering program at GSFC University emphasizes on providing core fundamental knowledge along with practical and hands-on experience and an exposure to industrial centric dissertation projects.

To impart the cutting edge knowledge Computer Science & Engineering program has revamped and offers three specializations in:

State-of-the-art Research Laboratories such as, 1. Supercomputer Lab (PARAM Shavak DL-GPU) & Design IoT Lab, sponsored and supported by Gujarat Council on Science & Technology (GUJCOST), Department of Science & Technology ( DST), 2. Robotics & Automation Lab, 3. e-Yantra Lab setup in collaboration with IIT Bombay.

Specialized laboratories for each specializations opted as elective along with the laboratories for core subjects.

Digital Campus System and Digital Library to access e-resources. High Tech classrooms with Digital Podium and Well-Equipped Laboratories

# PROGRAM OBJECTIVES

Prepare students to pursue a career in Research and Development, Academics, and as Computer Science professional.

Provide students a deep insight on various cutting edge technologies & tools to create diverse career opportunities.

Making students industry ready to solve real world challenges related to Computer science domain.

Enhance technological competence to withstand the challenges in the volatile IT industry by developing expertise in the contemporary software engineering principles and paradigms.

Provide students with engineering project management skills, catering to the changing industry needs and constraints across the advancing domains of computing.

To prepare students for careers in academia, research and development, and industry, including positions in technology companies, government agencies, and other organizations.

# PROGRAM USP

**Industry Collaboration: I**ndustry driven M.Tech program in collaboration with industry partners, will lead to better job prospects. Dissertation work will be carried out in an industry or in collaboration with an industry and students will work on IDP as a part of their dissertation work.

**Research Labs:**Exposure of working on industrial problems in the State of the art Research labs developed such as Supercomputer Lab (PARAM Shavak DL-GPU) & Design IoT Lab, sponsored and supported by Gujarat Council on Science & Technology (GUJCOST), Department of Science & Technology ( DST).

**Hands on Sessions:**Hands-on learning through lab sessions on Python, SQL, Tableau, and other Data Science tools & techniques, Arduino, Raspberry pie, penetration testing etc. for students overall development to be Industry-ready.

**Student Centric Approach:**At GSFC University, we follow student- centric approach where pedagogy and curricular choices are designed to make learning meaningful, relevant, engaging, and responsive to students' needs.

**Strong industry linkages:**Expert talks, Symposiums, Projects and Hands on experience from industry resources which is a result of strong industry connects. MoUs are

pipeline.

**Support for startup and innovation:** Inculcating innovation, funding support for innovative projects and extending support for startups through GUIITAR (GSFC University Incubation Innovation Technology and Applied Research) Council.

# PROGRAM STRUCTURE

The MTech Computer Science and Engineering Program is of two-years duration. Each year is called an academic year and is divided into two semesters. Thus, there will be a total of four semesters. Each semester consists of fifteen weeks of teaching. In the last two semesters, the students will undergo a Dissertation Project focused on Industrial or Research Problems. The teaching learning process involves theory classes of an hour duration and practical classes of two hours duration. The curriculum will be delivered through various methods including chalk and talk, laboratories, powerpoint presentations, audio, video tools, E-learning / E-content, virtual laboratories, simulations, field trips/ Industry visits, seminars, workshops, projects, models, class discussions and industrial dissertation project.

## EVALUATION

The assessment broadly comprises Internal Assessment (Continuous Evaluation Component) and External Assessment i.e., End Semester Examination. Each course carries 100 marks for theory with 50 marks for Internal Assessment and 50 for End Semester Examination and practical course carries additional 50 marks. The internal assessment will be through MCQ, Classroom Test, Assignment, Oral Presentation and Projects.

# COURSE STRUCTURE

Semester I Semester II Semester III Semester IV

**Semester I (IoT)**

| Sr. No. | Course Code | Course Title | L | T | P | C | Marks |
|---|---|---|---|---|---|---|---|
| 1 | MTCS101 | Mathematics and Statistical Foundations | 3 | 0 | 0 | 3 | |
| 2 | MTCS102 | Advanced Data Structure and Algorithm | 3 | 0 | 4 | 5 | |
| 3 | MTCS106 | IoT Architecture,Process and Platforms | 3 | 0 | 4 | 5 | |
| 4 | MTCS107 | Introduction to Machine Learning | 3 | 0 | 0 | 3 | |
| 5 | MTCS105 | Research Methodology and Intellectual Property | 2 | 0 | 0 | 2 | |
| **Total** | | | | | | **18** | |

**Semester I (AI/ML)**

| Sr. No. | Course Code | Course Title | L | T | P | C | Marks |
|---|---|---|---|---|---|---|---|
| 1 | MTCS101 | Mathematics and Statistical Foundations | 3 | 0 | 0 | 3 | |
| 2 | MTCS102 | Advanced Data Structure and Algorithm | 3 | 0 | 2 | 4 | |
| 3 | MTCS103 | Fundamentals of Artificial Intelligence and Machine learning | 3 | 0 | 2 | 4 | |
| 4 | MTCS104 | Data Science for Engineers | 3 | 0 | 0 | 3 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5 | MTCS105 | and Intellectual Property | 2 | 0 | 0 | 2 | |
| **Total** | | | | | | **16** | |

# ADMISSION PROCESS

## TOTAL INTAKE

18 Seats

## MODE OF ADMISSION

Through Admission Committee for Professional Courses(ACPC)

## FEES

Rs 1,10,000 (One lakh ten thousand rupees ) per year

## ELIGIBILITY FOR ADMISSION

Candidates should have passed in B.Tech/B.E.(CSE) with a minimum of 50% in engineering and for SC/ST Category candidates 45% engineering.

Candidate should have GATE qualified in the relevant discipline(CSE)

In case the candidate does not have a valid GATE Score Card, the candidate can appear in PGCET conducted by ACPC ,Gujarat.

## SEAT ALLOCATION

The state quota seats of the M. Tech Program will be filled through Gujarat Post Graduate Common Entrance Test, conducted by Admission Committee for Professional Courses (ACPC), Govt. of Gujarat.

The All-India quota Seats of the M. Tech Program will be filled by GSFC University with the following eligibility criteria:

- Seats (All out of the state applications) will be filled from the all-India candidates (Including Gujarat) on the basis of GATE score

- 50% of seats will be allocated through Admission Committee for Professional Courses(ACPC) and 50% seats will be allocated through Management Quota

- Admission announcement for these seats will be posted at the University's website.

- If seats are not filled under specified GATE & PGCET, vacant seats will be transferred to either of the category.

The registration fee for submitting an online application form is Rs. 1000 (One thousand rupees) which is to be paid online.

# CONTACT CO-ORDINATOR

# E-CENTRE

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## Enroute to GSFC University


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