



THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, NBA & NAAC Accredited Autonomous Institution)

Affiliated to Anna University)

Madurai 625 015

Where Quality and Ethics Matter



**DEPARTMENT OF APPLIED MATHEMATICS AND
COMPUTATIONAL SCIENCE**

**5 YEAR INTEGRATED
M.Sc (DATA SCIENCE)
Degree Programme**



INFORMATION BROCHURE

2025 – 2030

ABOUT TCE

Thiagarajar College of Engineering (TCE), Madurai, affiliated to Anna University, is one among the several educational and philanthropic institutions founded by philanthropist and industrialist Late. Shri. Karumuthu Thiagarajan Chettiar. TCE was established in the year 1957 and granted Autonomy in the year 1987. TCE is funded by Central, State Governments and the Management. TCE offers 11 UG Programmes, 7 PG Programmes and Doctoral Programmes in Engineering, Sciences and Architecture. The courses offered in TCE are approved by the All India Council for Technical Education, New Delhi. TCE campus is designed with world class academic and research facilities, state-of-art laboratories & libraries which foster innovative teaching and learning and provide personal care to students. TCE is involved in national and international ranking frameworks, showcasing its commitment to excellence and quality in education. The institution's programs have been accredited by NBA since 1998, indicating compliance with quality standards in technical education. The programmes offered at our institution have garnered numerous accolades, including accreditation by NAAC with a CGPA of 3.56 (out of 4.0) with A++ Grade in Cycle 2.

VISION

World class quality technical education with strong ethical values.

MISSION

We at TCE shall strive continuously to

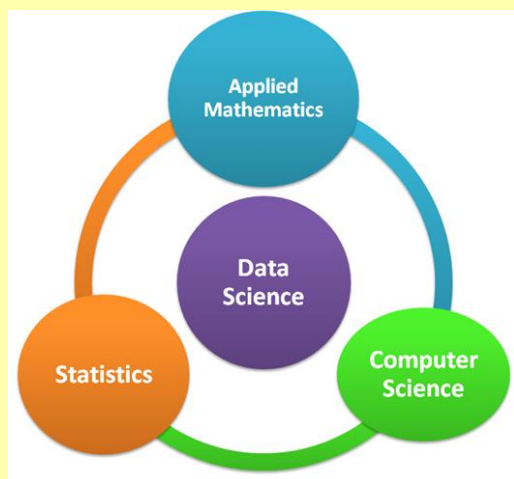
- Achieve Academic excellence in Science, Engineering and Technology through dedication to duty, commitment to research, innovation in learning and faith in human values.
- Enable the students to develop into outstanding professionals with high ethical standards capable of creating, developing and managing global engineering enterprises.
- Fulfill the expectations of the society and industry by equipping students with the state of art technology resources for developing sustainable solutions.

Achieve these through team efforts, making Thiagarajar College of Engineering a socially diligent trend setter in technical education.

About the Programme

The M.Sc., (Data Science) is a 5 Year Integrated Degree Programme offered by the Department of Applied Mathematics and Computational Science of our college from the academic year 2019-2020. This is an inter-disciplinary programme covering Applied Mathematics, Statistics and Computer Science. The curriculum of this programme comprises of Theory, Theory cum Practical and Practical Courses. The programme has foundation courses, professional core courses, professional elective courses and employability enhancement courses. The courses are designed by qualified faculty members of our college with the support of professors from Indian Institute of Technology (IIT) Madras, Institute of Mathematical Science (IMS), Chennai and experts from leading software industries. This programme will enable the students of Data Science to apply suitable techniques and tools to real-time applications drawing on appropriate and relevant concepts and models from the computational sciences. These students will be positioned to pioneer new developments in this field, and to be leaders in Information Technology industry, the public sector, and academia.

Highlights



- Qualified faculty members with Industry experience.
- MoU with IBM, Conversight.AI and JioVio Healthcare Analytics to offer industry supported courses and internships/projects.
- Students' research internship at IISC, IIMs, IITs, CSIR, ISRO and CDAC Research Laboratory and Indian National Science Academy, New Delhi and IT industries.
- 3 students from MSc (Data Science) [2022-2027] grabbed an internship offer from KLA with a stipend of Rs.1.25 Lakhs per Month.
- Collaborative teaching by Professors from IMS, IITs, IIITs, IIST and IIMs.
- Mentoring students for National Level Hackathon, technical contests, symposium, ACM and IEEE conferences.
- Webinars on specialized topics in Data Science by Professors from IITs, IIMs, IITs, IIST and research labs from industries such as IBM, and Microsoft.

5 Year Integrated M.Sc (Data Science)

Eligibility and Admission Procedure

Candidates with their subjects of study as Mathematics, Physics and Chemistry in HSC (Plus Two) are eligible to apply. **Admission will be based on the performance of the candidate in the Higher Secondary Examination (Aggregate Score of Mathematics, Physics and Chemistry).** The candidates shall also be required to satisfy all other conditions of admission prescribed by the College, University and Government to Tamil Nadu from time to time.

Please keep visiting our website www.tce.edu for all the updates on admission to this programme.

How to Apply

- Application form shall be submitted (**ONLY**) **ONLINE** through our website www.tce.edu
- Last Date for submission of Application Form is **31st May 2025**.
- Incomplete Applications will not be registered.

Fee Details: Rs.1,50,000 (per year).

Contact Details:

Phone: 0452-2482240, 41

Fax: 0452-2483427

www.tce.edu

E-mail: tceoffice@tce.edu



M.Sc (Data Science)

Program Structure

Semester I

Calculus
Applied Physics
Digital Electronics
Problem solving using C Programming
Discrete Structures
C Programming Lab
Professional Communication

Semester II

Theory of Probability
Transforms and their Applications
Data Structures
Object Oriented Programming
Graph Theory
Object Oriented Programming Lab
Data Structures Lab

Semester III

Applied Statistics
Linear Algebra
Organizational Theory and Behaviour
Advanced Data Structures
Computer Organization
Applied Statistics and Python
Programming Lab
Advanced Data Structures Lab

Semester IV

Abstract Algebra
Database Management
Design and Analysis of Algorithms
Operating Systems
Predictive Analytics
Relational Database Lab
Design and Analysis of Algorithms Lab

Semester V

Numerical Methods
Web Technology
Computer Networks
Machine Learning
Professional Elective-I
Java Programming Lab
Web Technology Lab

Semester VI

Deep Learning
Data Mining
Big Data Systems
Optimization Techniques
Professional Elective II
Big Database Systems Lab
Deep Learning Lab

Semester VII

Project Work I

Industry / Research Project

Semester VIII

Reinforcement Learning
Information Security
Business Analytics
Professional Elective III
Professional Elective IV
Mathematical Computing Lab
Information Security Lab

M.Sc (Data Science)

Program Structure

Semester IX

Web Analytics
Natural Language Processing
Computer Vision
Professional Elective V
Professional Elective VI
Natural Language Processing Lab
Web Analytics Lab

Semester X

Project Work II

Industry / Research Project

Professional Electives

High Performance Computing
Mobile Application development
Parallel and Distributed Computing
Embedded System
Marketing Analytics
Graphical Models
Soft Computing
Mathematical Modeling
Software Engineering
Graph Algorithms
Artificial Intelligence
Game Theory

Social Media Analytics
Cloud Computing
Data Visualization
Computational Finance
Enterprise Information System
Randomized Algorithms
Principles of Management
Accounting and Financial Management
Wireless Networks
Network Science
Information Retrieval
Ethics for Data Science

