THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, NBA & NAAC Accredited Autonomous Institution
Affiliated to Anna University)

68 YEARS 1957-2025 Celebrating Academic Excellence

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

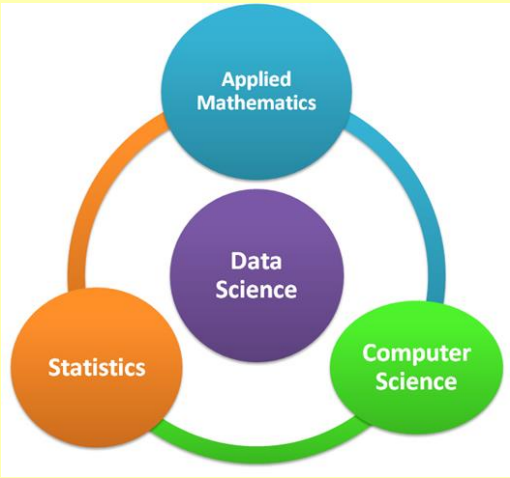
We at TCE shall strive continuously to

- 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, 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**

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M.Sc (Data Science)

Program Structure

Semester I	Semester II
Calculus Foundations of Data Science Digital Electronics and Computer Organization Problem Solving using C Programming Discrete Structures C Programming Lab Professional English	Theory of Probability Applied Statistics Graph Theory Object Oriented Programming Organizational Theory and Behaviour Python Programming and Applied Statistics Lab Object Oriented Programming Lab

Semester III	Semester IV
Partial Differential Equations and Transforms Abstract Algebra Data Structures Database Management Operating Systems Data Structures Lab Relational Database Lab	Linear Algebra Predictive Analytics Design and Analysis of Algorithms Advanced Data Structures Software Engineering Predictive Analytics Lab Java Programming Lab

Semester V	Semester VI
Numerical Methods Optimization Techniques Web Technology Machine Learning Computer Networks Web Technology Lab Mini Project	Deep Learning Data Mining Big Data Systems Ethics for Data Science Professional Elective I Deep Learning Lab Big Database Systems Lab

Semester VII	Semester VIII
Project Work I Industry / Research Project	Reinforcement Learning Data Visualization Business Analytics Professional Elective-II Professional Elective-III Mathematical Computing Lab Business Analytics and Visualization Lab

M.Sc (Data Science)

Program Structure

Semester IX	Semester X
Web Analytics Natural Language Processing Computer Vision Professional Elective–IV Professional Elective–V Web Analytics Lab Natural Language Processing Lab	Project Work II Industry / Research Project

Professional Electives	
High performance computing	Social media analytics
Mobile application development	Cloud computing
Parallel and distributed computing	Data visualization
Embedded system	Computational finance
Marketing analytics	Enterprise information system
Graphical models	Randomized algorithms
Soft computing	Principles of management
Mathematical modeling	Accounting and financial management
Graph algorithms	Wireless networks
Explainable Artificial Intelligence	Network science
Game theory	Information retrieval

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