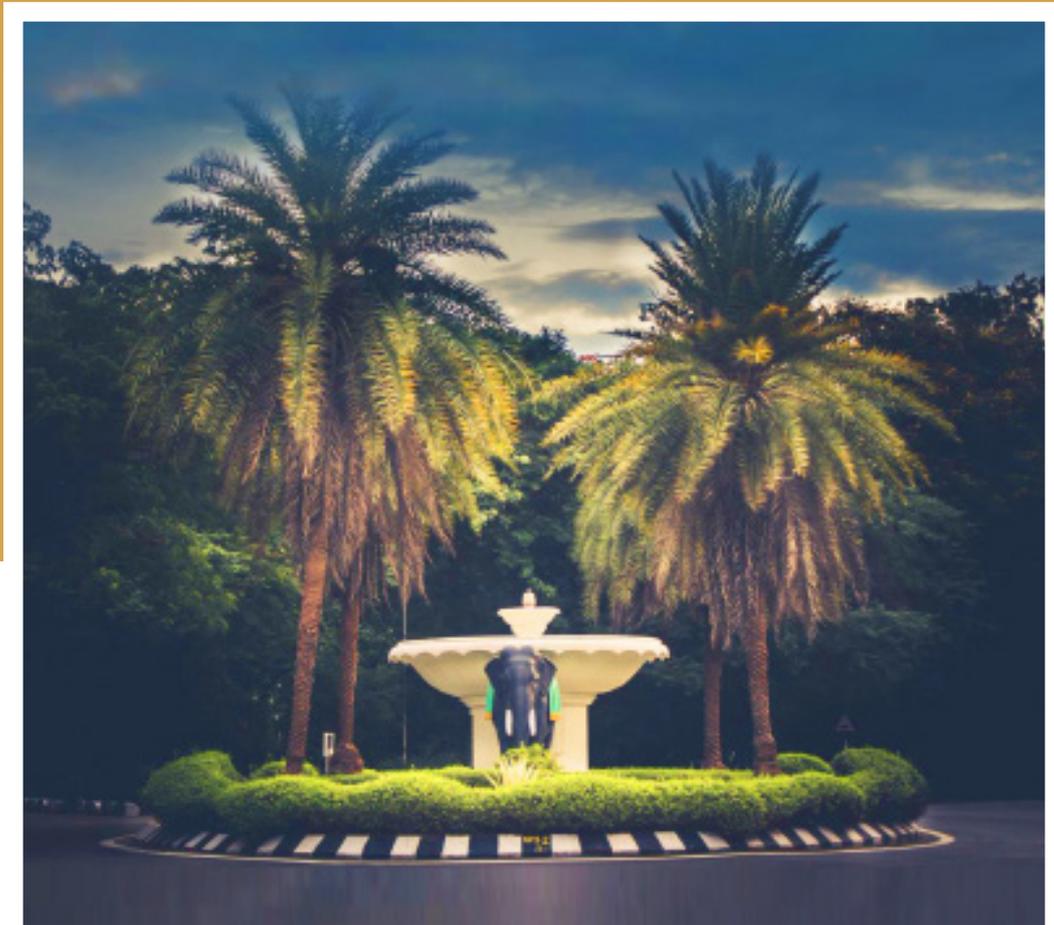


INTERNSHIP & PLACEMENT

BROCHURE - 2023

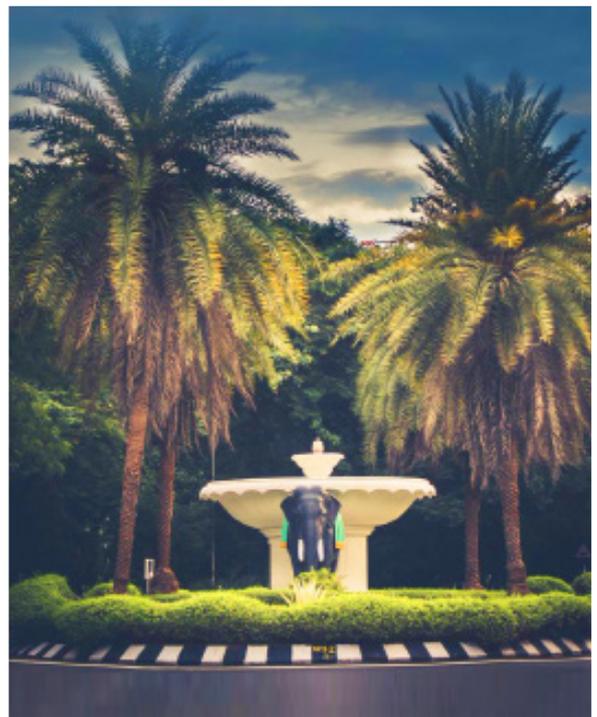


B.S. Degree
in Data Science and Applications

About IIT Madras

Indian Institute of Technology Madras (IITM) was established in 1959 by the Government of India as an 'Institute of National Importance'. The activities of the Institute in various fields of Engineering, Science, Technology, Management are carried out in 16 academic departments and several advanced interdisciplinary research academic centres.

- The Institute offers undergraduate and postgraduate programmes leading to B.Tech., B.Sc., M.Sc., M.B.A., M.Tech., M.S., and Ph.D.
- IITM is a residential institute with more than 600 faculty and 10,000 students. Students from 18 countries are enrolled here.
- IITM fosters an active entrepreneurial culture through the IITM Incubation Cell.
- IITM has been ranked No.1 in the 'Overall' category for four consecutive years by National Institutional Ranking Framework (NIRF), Ministry of Education, Govt. of India.
- The Institute has also been ranked No.1 in the 'Engineering Institutions' category in NIRF Rankings for seven consecutive years.



Message from **THE DIRECTOR**



Prof. V Kamakoti, Director, IIT Madras



IIT Madras started this unique B.S. program to provide access to IIT quality education to the learners across the country. Data Science is a growing field and the demand for skilled resources in the market is very high.

IIT Madras has a rich history of providing high-quality education and this program is designed to underline the fact that IIT is within the reach of everyone. This B.S. program is meticulously drafted and is aligned with the goals of the National Educational Policy. We are planning to make IIT Madras a 'Vishwaguru (Global Teacher)' through innovative approaches to enhance the quality of education. In order to encourage the students from financially disadvantaged backgrounds to pursue this program, scholarships are being provided.

Message from THE COORDINATORS



Prof. Andrew Thangaraj, Coodinator, IIT Madras



“Through this program, we wish to ensure that high-quality education is accessible to anyone who dreams to study at an IIT or build a career in Programming and Data Science. This program, we hope, will be a game changer in the field of education paving the way for many other large scale programs to be offered by us and other institutes”.



Prof. Vignesh Muthuvijayan, Coodinator, IIT Madras



“The B.S. Program opens the door to the world of Data Science and Programming where the demand for skilled resources is very high to anyone from any background and of any age group. This tailor-made program now admits students who qualify to write JEE Advanced, providing them with an option to fulfil their dream of studying from an IIT and ensuring their hard work and toil is rewarded”.

Accreditation & Awards

The Wharton-QS Reimagine Education Awards, also known as **"The Oscars of Education,"** gave significant recognition to the Indian Institute of Technology, Madras (IITM). The B.S. in Data Science and Applications was awarded silver in the 'Best Online Program' category.

B.S. Program

Silver in the Best Online Program category



**Bachelor of Science in Data Science and Applications
Indian Institute of Technology Madras**

SILVER WINNER

for the category

Best Online Program Award

The QS-Wharton Reimagine Education Awards celebrate and reward the world's most successful educational innovations enhancing student learning outcomes and employability.

Nunzio Quacquarelli
President,
QS Quacquarelli Symonds

Jerry Wind
Professor Emeritus,
The Wharton School



B.S. Degree

in Data Science and Applications IIT Madras

IIT Madras, India's premier technology institute, is proud to present the world's inaugural B.S. Degree program in Data Science and Applications, providing learners with a comprehensive educational experience spanning four stages: 1. Foundation level, 2. Diploma level, 3. B.Sc. Degree level and 4. B.S. Degree level. This innovative curriculum will enable students to cultivate expertise in programming and data science.

Highlights

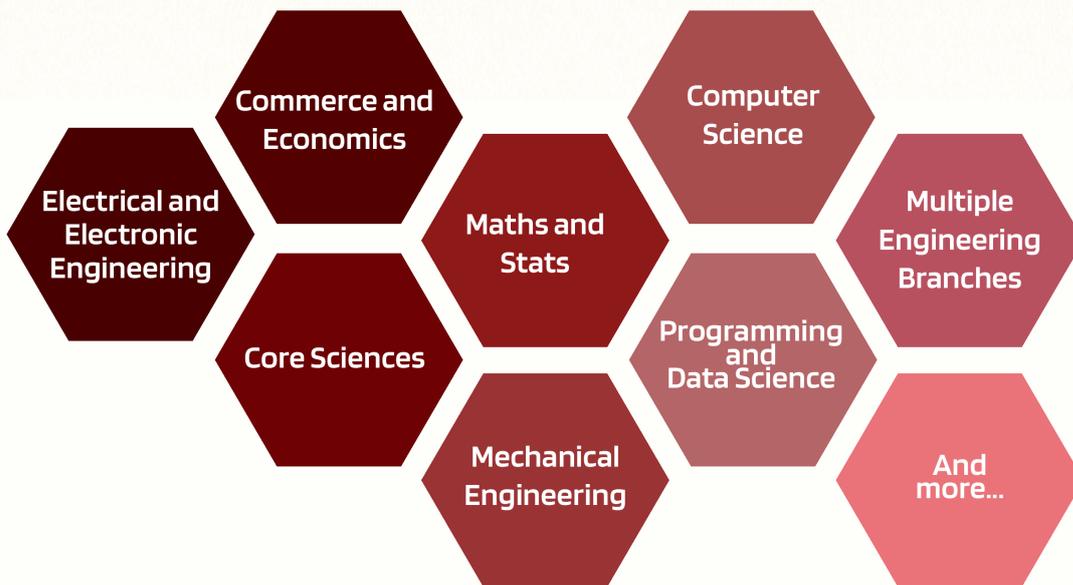
- The academic rigour is on par with the on-campus programs.
- Courses are offered online with maximum flexibility.
- Placement drive to be held thrice in a year.
- In-person quizzes and end term exams.
- Our students will be available for Internships and Placements from May 2023.

For more details about the B.S. Degree Program, please visit <https://study.iitm.ac.in/ds>

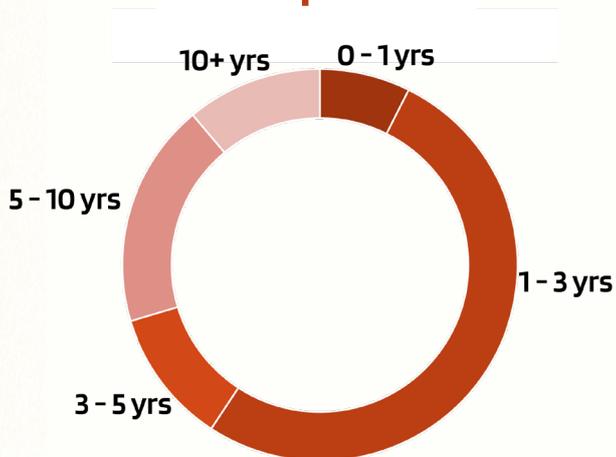


Batch Profile

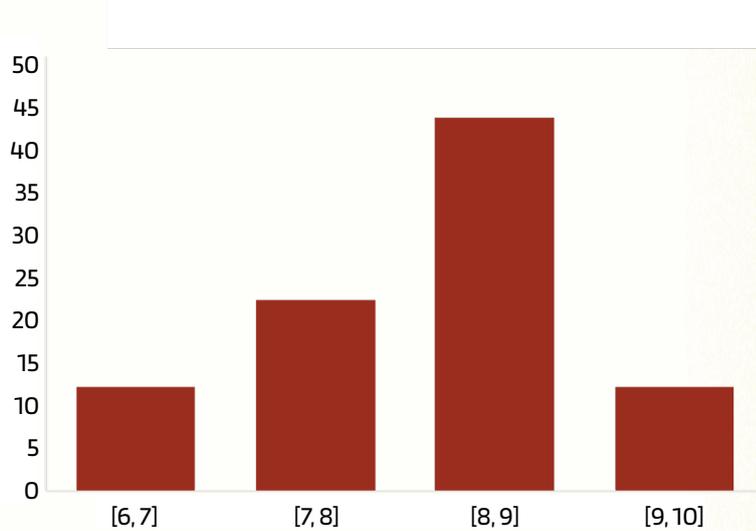
Specializations



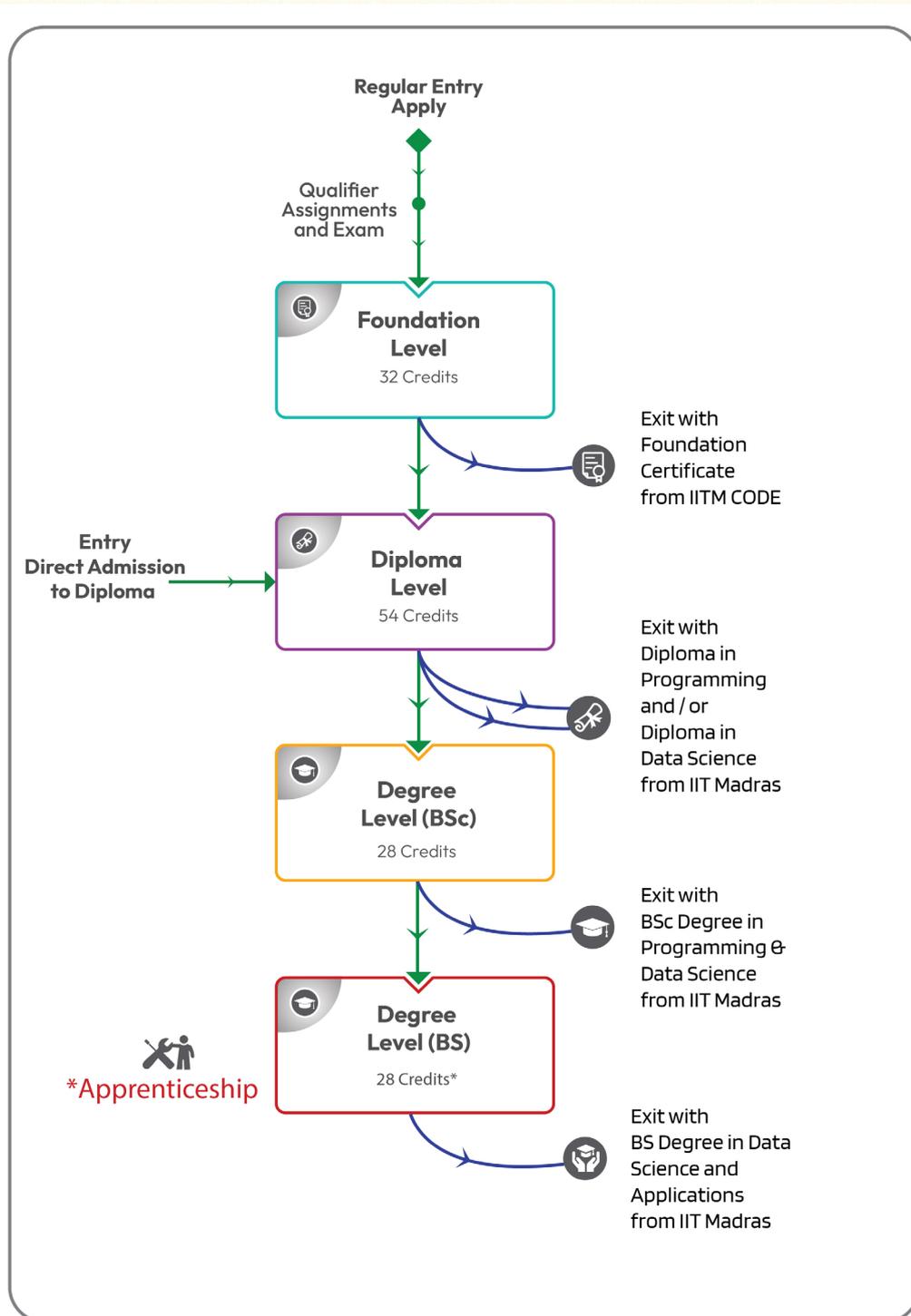
Work Experience



GPA Distribution in IITM-BS Degree Program



Structure of the Program



Courses in the Program

Foundation Level	
Mathematics for Data Science I	Mathematics for Data Science II
Statistics for Data Science I	Statistics for Data Science II
Computational Thinking	Programming in Python
English I	English II

Diploma in Programming	Diploma in Data Science
Database Management Systems	Machine Learning Foundations
Programming, Data Structures and Algorithms using Python	Machine Learning Techniques
Modern Application Development I	Machine Learning Practice
Modern Application Development II	Business Data Management
Programming Concepts using Java	Business Analytics
System Commands	Tools in Data Science
Modern Application Development I- Project	Business Data Management- Project
Modern Application Development II- Project	Machine Learning Practice- Project

Degree Level	
Software Testing (<i>Core Course</i>)	Thematic Ideas in Data Science
Software Engineering (<i>Core Course</i>)	Speech Technology
AI: Search Methods for Problem Solving (<i>Course Course</i>)	Design Thinking for Data-Driven App Development
Deep Learning (<i>Core Course</i>)	Industry 4.0
Strategies for Professional Growth (<i>Mandatory Course</i>)	Sequential Decision Making
Algorithmic Thinking in Bioinformatics	Market Research
Big Data and Biological Networks	Privacy & Security in Online Social Media
Introduction to Cryptography and Cyber Security	Introduction to Big Data
Data Visualization Design	Financial Forensics
Special topics in Machine Learning	Linear Statistical Models

Technical skills imparted by the Program

Technical skills imparted by the program

For Foundation courses:

Strong Foundation in

- Linear Algebra
- Calculus
- Probability Distributions
- Hypotheses Testing

Hands-on familiarity with:

- Functional and Object Oriented Programming
- Exception Handling
- Data Structures and their Manipulation

Familiarity with ETL tools and practices:

- Data Cleansing
- Database Development and Administration
- Data Transformation Techniques

Fundamental and advanced Machine Learning skills:

- Supervised and Unsupervised Learning Methods
- Algorithms and Methods for Clustering and Classification
- Optimization Techniques
- Hyper Parameter Tuning

Hands-on Software Engineering skills:

- User Journey Mapping
- Agile Processes
- Full-Stack Development of Web App
- Unit and Stress Testing
- Version Control using Git

Exposure to tools and strategies for:

- Requirement and Strategy Analysis
- Business Intelligence
- Business Analytics

Tools and Packages:

Libraries/Modules - NumPy, Pandas, Matplotlib, Seaborn, Scikitlearn, Beautiful Soup, GeoPandas, GeoPy, QGIS, Tabula, Nominatim, Pillow, Trifacta, PyCaret, SpaCy, Keras, Apache Kafka, PySpark, PyTorch

CNNs - LeNet, AlexNet, ZF-Net, VGGNet, GoogLeNet, ResNet

Tools - Flourish, Kumu, Google DataStudio, OpenRefine, PowerBI, Tableau, Quill, Comicgen

Internships & Placements

The Industry Interaction Cell (IIC) serves as the Internship and Placement Cell for the IITM B.S. Degree Program. Our objective is to prepare students with industry-specific skills and the appropriate attitude, enabling them to leverage the best employment opportunities available in various industries.

a. **Connect with Companies:**

IIC proactively reaches out to companies to increase awareness about the new B.S. program and establish opportunities for interaction.

b. **Leadership Talk Series:**

IIC frequently hosts talks on the latest technology trends by industry leaders and invites notable company executives to engage with students, fostering meaningful interactions.

c. **Examiners for Project Vivas:**

IIC provides an opportunity for company employees to volunteer their time and effort as examiners for project evaluations at the Diploma level. The time commitment can be as little as 10 hours per month, and it can be adjusted to suit their availability. This role offers valuable insight into the skills acquired by students in the program.

d. **Training & Development:**

IIC is dedicated to helping students prepare for placement interviews. The comprehensive training program covers a range of areas such as aptitude tests, English proficiency, group discussions, and mock interviews, where students receive constructive feedback on their resumes and presentation skills. Additionally, students who need further support can receive specialized training.

e. **Recruitment:**

IIC serves as the primary point of contact for companies to communicate their resource requirements. Subsequently, IIC shares this information with potential students and manages the end-to-end recruitment process until hiring is completed and offers are extended.

f. **Apprenticeship Model:**

B.S. Degree level students have the option to undertake an 8-month apprenticeship at various companies, which can be credited for up to 12 credits at this level. IIC collaborates with companies across different domains to facilitate these opportunities for students, providing them with valuable practical experience. This program also presents an excellent opportunity for companies to convert these apprenticeships into pre-placement offers.

More details are available on the website.

Industry-Academia Interaction



← **Bengaluru Edition**
25 August 2022

Chennai Edition
28 September 2022



← **Mumbai Edition**
09 November 2022

Hyderabad Edition
14 December 2022



Our Recruiters

- Renault Nissan Technology & Business Centre India
- Aditya Birla Management Corporation
- Tata Communications
- Trinity Life Sciences
- Tardid Technologies
- Sabio Mobile India
- L & T Construction
- Einheit Design
- TCS Research
- Symphony AI
- Smart Joules
- Rebel Foods
- Dot9 Games
- In22Labs
- Syngenta
- Buckman
- Flutura
- Aspire
- Cargill
- VuNet
- Kyro
- EFI



Not in any particular order

Feedback from Recruiters

“The students we selected had a good understanding of the basics. The students have learning agility, good communication skills and clarity of concepts. They show good hold over tools like SQL, Python so far. IITM Online Degree Placements provides a stronger funneling of students as compared to other campuses”

- Trinity Life Sciences

“The BS students who have worked with us have shown strong logical sense, good analytical skills and their work suggests decent exposure to Data Science They’ve been punctual and hardworking and our overall experience with them has been good”

- In22labs

“Selected students nicely exhibit their skills in Python which enable them to work on actual use cases on large datasets”

- Aspire Digital Credit Card



Our Contact Details

Industry Interaction Cell:

industry-relations@study.iitm.ac.in

Prof. Balaji Srinivasan

Advisor, Internships & Placements, IIT Madras B.S. Degree Program

balajis@ee.iitm.ac.in

+91-44-22574426

Ms. Kamala Ramakrishnan

Head, Industry Relations, IIT Madras B.S. Degree Program

kamala@study.iitm.ac.in

+91-97908 35138

For more details about the B.S. degree program,
Please visit **<https://study.iitm.ac.in/ds>**

Industry Interaction Cell
B.S. Degree Program

3rd floor, IC&SR, IIT Madras.

 **industry-relations@study.iitm.ac.in**