

Pandit Deendayal Petroleum University (PDPU), Gandhinagar

Department of Computer Science & Engineering

M.Tech. in Data Science

About the Program

Data Science (DS) is a new, exponentially growing field, which consists of a set of tools and techniques used to extract useful information from data. It is an interdisciplinary, problem-solving oriented course that learns to apply statistical techniques to practical problems. The program aims at building strong foundation of data science concepts along with its specific tools and techniques that can be applied to solve some real-world problem for a specific domain. It also features a project-based approach to learning and encourages the pragmatic application of a variety of different tools and methods to solve complex problems.

At the end of the course, the Graduates of the program will be able to:

- Understand and analyse large datasets;
- Apply data exploration techniques to make it suitable for further processing;
- Apply suitable data mining, statistical analysis, and machine learning techniques to detect hidden patterns
- Analyze unknown patterns and make predictions;
- Design visualizations and effectively communicate findings; and
- Understand the data security and privacy preservation issues.

Proposal

Department of Computer Science & Engineering has envisioned the need of data scientists in current market and incubated a proposal to start two-year PG program as M. Tech in Data Science. This program aims to cater the need of current demand of data analyst/engineer and numerous opportunities across organizations. The course orients on basic theoretical information along with hands-on experience with modern data analysis and visualization tools.

Who is eligible to apply?

Graduate degree in engineering B.E. /B. Tech. or equivalent in CSE/IT/ICT/ECE/EEE/EE or MCA*, MSc* (Mathematics/Computer Science/IT)* with minimum 60% or CPI/CGPA of 6.5 on a 10 point scale are eligible to apply for M.Tech. Data Science programme under Department of Computer Science and Engineering.

50% seats will be filled through candidates with valid GATE score in "Computer Science & Engineering" and remaining 50% seats will be filled through Non GATE candidates. In case, if 50% GATE seats do not get filled up through eligible candidates, it would be filled up through non GATE candidates.

*M.C.A and M.Sc. candidates must be GATE qualified in Computer Science & Engineering to become eligible for the admission or As per PDPU Norms.

Pre-requisite:

Students are expected to have good background in mathematics, statistics, and data structures. Any programming experience would be an added advantage.

About Curriculum

The curriculum for the course has been designed by referring the curriculum of reputed Indian & Foreign Universities. It is further fine-tuned as per the industry requirement.

The curriculum has been structured in three phases:

1. Core Courses: The core courses are essential to provide critical understanding of theoretical and practical issues relating to data science. The core courses include foundation course on data science, statistical techniques, data exploration and analysis, identifying hidden patterns in data, and effectively visualizing and communicating data.
2. Elective Courses: The elective courses are induced to provide an industry or research-oriented path for students.
3. Capstone project: The objective is to equip the students with hands-on experience to solve an industry specific problem in one of the domains (BFSI, Security, Healthcare, Natural Language Processing, Computer Vision, etc) using advanced data science tools and techniques. It will also cement the skills learned throughout the course.