

Preamble

Welcome to the B.Sc.(Data Science) programme! This programme is designed to empower students with knowledge and skills required to thrive in an era of data science and technology. By choosing B.Sc. (Data Science) Programme, students enter into the dynamic field of data science and data analytics. Students will engage and build strong foundation in mathematics, statistics, computer science and ethical data practices. This programme not only equips students with technical expertise but also fosters a mindset of continuous learning, adaptability and ethical leadership.

As you navigate this syllabus, consider it a roadmap to your future in data science. Welcome to the world where data becomes insight and insight drives innovation.

Eligibility

- (a) Higher Secondary School Certificate (HSC) (10+2) with any stream or its equivalent examination having Mathematics/ Statistics/ Information Technology(IT) at 10+2 level.

Note: If candidates having Information Technology (IT) at 10+2 level and not offered Mathematics/Statistics as one of the subject then such candidates should have to complete the Bridge Course (Specified in the syllabus) before completion of semester-I.

OR for IT

- (b) Three Years Diploma Course after S.S.C. (10th standard) of Board of Technical Education conducted by Government of Maharashtra or its equivalent.

Programme Outcomes:

- PO 1: The programme seeks to develop strong foundation in Mathematics, Statistics and Computer Science that demonstrate proficiency in basic programming languages and tools.
- PO 2: The programme aims to understand the principles of data storage and retrieval by acquiring knowledge of data type structures and basic data manipulation techniques.
- PO 3: The programme helps to learn database management techniques with design and management of databases as well as executing SQL queries for data retrieval and manipulation.
- PO 4: By applying advanced statistical methods and machine learning techniques, the students can analyze complex datasets, interpret and communicate findings effectively.
- PO 5: The programme also aims to understand and work with big data technologies and apply these technologies to process and analyze large-scale datasets.
- PO 6: The students can create clear and effective data visualizations using various tools and communicate complex findings through visual representations.

- PO 7: The programme also seeks to develop comprehensive projects by applying data science techniques to solve real-world problems that will improve the ability of learner to integrate knowledge and skills acquired throughout the programme.
- PO 8: Through hands-on projects, practical assignments, and exposure to state-of-the-art tools and technologies, programme aim to develop the technical proficiency and problem-solving skills necessary for success in the professional world.
- PO 9: Depending on the chosen track, students can develop expertise in data analytics with areas such as Business, Social Media, HR, Financial, Healthcare, Supply Chain & Logistics and Big Data etc.
- PO 10: The program include On Job Training, internships and research work that provides learners with practical experience, applying their knowledge to real-world challenges.
- PO 11: Graduates will be adept at presenting complex technical concepts clearly and effectively, both in written and oral forms, to various audiences.
- PO 12: The programme places a strong emphasis on ethical considerations, responsible use of technology, and awareness of the societal impact of data science and computing solutions.
- PO 13: The programme aim to produce graduates who approach their work with integrity and a sense of social responsibility.
- PO 14: Acknowledging the dynamic nature of computer science, the programme aim to inspire students for continuous learning and professional development, empowering them to adapt and thrive in the face of technological advancements; prepared them to adapt to new technologies and methodologies throughout their careers.
- PO 15: The students will be encouraged to think creatively and innovatively, exploring new ideas and approaches to solve data science related problems and advance the state of the art in the field.