M.Sc. (Data Science)

Program Outcome:

- To develop admissible programming abilities.
- To exhibit the skill with statistical analysis of data.
- To develop the ability to build data-based models and tools.
- To apply data science concepts and methods to solve problems in real-world contexts.

Program Specific Outcome:

- Apply quantitative modeling and data analysis techniques to solve the real-world business problem and present results effectively using data visualization techniques.
- Apply ethical practices in business activities.
- Make well-reasoned ethical business and data management decisions.
- Demonstrate Knowledge of statistical data analysis techniques utilized in business decision-making.
- Apply algorithms to build machine intelligence to solve real-world problems of decision making.

Semester-I

Course Title: DSUT101 Computational Statistics
Course Outcomes:

- Develop relevant programming abilities.
- Can execute statistical analysis with professional statistical software.
- Able to demonstrate skill in data management.
- Develop the ability to build and assess data-based models.
- Able to understand subject-related concepts.
- Develop problem-solving and logical thinking abilities.

Course Title: DSUT102 Python Programming
Course Outcomes:

- Able to manipulate datasets.
- To perform data analysis to find hidden patterns from data sets.
- To visualize datasets in terms of different charts.
- To implement different machine learning algorithms.

Course Title: Practical based on DSUT102 (Python Programming)
Course Outcomes:

- Able to learn and understand Python programming basics and paradigms.
- Understand how to use Python IDE such as PyChram, Jupyter, and Spyder.
- To learn the basic process of data science.
- To learn and understand how to manipulate datasets.
- To learn how to effectively visualize results.
- To learn Basic statistical analysis and machine learning methods.

Course Title: DSUT103 Data Preparation and Analysis
Course Outcomes:

- Apply ETL process with ETL tools to datasets for data processing.
- Prepare conditioned and pre-processed datasets using the normalization method for data.
- Demonstrate the use of visualization tools for data preparation and analysis.
- Collect and integrate data and perform pre-processing to analyze it.

Course Title: DSUT105Fundamentals of Data Science
Course Outcomes:

- Able to understand the basics of Big data and write case studies in Business Analytics.
- To apply mathematical models using statistics for Business Analytics and Intelligence applications.
- To Critically analyze problems and identify analytical solutions using R Programming & Regression techniques.
- To gain knowledge on Pyspark using Scala programming.
- To understand the Data Visualization techniques and tools.
- To gain knowledge on Hadoop-related tools such as HBase, Hive, and Mahout for big data analytics.

Course Title: DSUT105(B)Fundamentals of Data Science Practical
Course Outcomes:

- Apply data visualization in big-data analytics.
- Utilise EDA techniques.
- Apply data pre-processing techniques.
- Understand the basics of R programming in terms of constructs, control statements, string functions.
- Understand the use of R for Big Data analytics.
- Able to appreciate and apply the R programming from a statistical perspective.

Semester-II

Course Title: DSUT201 Artificial Intelligence for Data Science
Course Outcomes:

- Understand formal methods of knowledge Representations,Logic, and reasoning.
- Understand foundational principles, mathematical tools programs paradigms of Artificial Intelligence.
- Apply AI algorithms to solve real-world problems.

Course Title:DSUT202:- MACHINE LEARNING
Course Outcomes:

- Able to estimate Machine Learning models efficiency using suitable metrics.

- Design application using machine learning techniques.

Course Title: DSUT203: Predictive Analysis
Course Outcomes:

- Use technical skills in predictive modeling to support business decision-making.
- Describe various techniques for predictive analysis.
- Fit predictive models for the sample data.

Course Title: DSUT204: Soft Computing
Course Outcomes:

- Ability to comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory.
- Able to understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic.
- Able to understand the concept of Neural Network and Genetic Algorithm.

Course Title: DSUT205:- Web Analytics
Course Outcomes:

- Apply basic concepts of web analytics, its goals, key terminologies, various data collection methods for analysis.
- Perform qualitative analysis using heuristic evaluation, site visits, and surveys.
- Acquire knowledge about Google Analytics and how it works.

Course Title: DSUT206:- Distributed Database
Course Outcomes:

- Able to find the difference between Centralized and Distributed DBMS.
- Able to design DDBMS Architecture.
- Ability to understand how query gets processed and optimized.
- Understand the concepts of Transactions and Concurrency Control in DDBMS.

Course Title: DSUT207 Natural Language Processing
Course Outcomes:

- Able to analyze Natural language text.
- Students will be able to apply information retrieval techniques.