

SIES College of Commerce and Economics (Autonomous)

Department of Data Science

M.SC (DS)

PROGRAM OUTCOMES

PO- 1: Learners will acquire proficiency in the field of Data Science.

PO- 2: Learners will upgrade and strengthen analytical and research skills.

PO- 3: Learners will apply acquired knowledge, tools, and techniques in an ethical and professional manner.

PO- 4: Learners will enhance future ready skills for Industry and Academics.

PO- 5: Learners will be trained in leadership skills and demonstrate social responsibilities with sensitivity towards sustainability.

Program: M.Sc. (Data Science)

Year: Part I

Semester: I

Course: Statistical Methods and Linear Programming

Course Code: MDC-MAJS1-501

Course Outcomes:

After completion of the course,

No	Course Outcome	PO Mapping
CO 1 (Remember)	the learner will be able to identify the fundamental concepts of expert system and its applications.	PO1, PO2, PO4
CO 2 (Understanding)	the learner will be able to understand the probability and concept of fuzzy sets for solving AI based problems.	PO1, PO2, PO4

CO 3 (Applying)	the learner will be able to apply Moments to calculate measures of skewness and kurtosis.	PO1, PO3, PO4, PO5
CO 4 (Analysing)	the learner will be able to analyse different Measures of Central Tendency.	PO1, PO2, PO4
CO 5 (Evaluating)	the learner will be able to compare solutions of Linear Programming Problems by graphical and simplex methods.	PO1, PO4, PO5
CO 6 (Creating)	the learner will be able to formulate LPP problems and designing solutions by various soft computing approaches for a given problem.	PO1, PO3, PO5

Program: M.Sc. (Data Science)

Year: Part I

Semester: I

Course: Advanced Database Management Systems

Course Code: MDC-MAJS1-503

Course Outcomes:

After completion of the course,

No	Course Outcome	PO Mapping
CO 1 (Remember)	the learner will be able to identify advance database concepts and database models.	PO1, PO2, PO3
CO 2 (Understanding)	the learner will be able to explain various terms related to transaction management.	PO1, PO2, PO3
CO 3 (Applying)	the learner will be able to apply queries on database.	PO1, PO3, PO4, PO5

CO 4 (Analysing)	the learner will be able to analyse the concept of object- relational database in development of various real time software.	PO1, PO2, PO4, PO5
CO 5 (Evaluating)	the learner will be able to evaluate different database designs and architecture.	PO1, PO2, PO3, PO4, PO5
CO 6 (Creating)	the learner will be able to create and manage different types of databases.	PO1, PO3, PO4, PO5

Program: M.Sc. (Data Science)

Year: Part I

Semester: I

Course: Research Methodology

Course Code: MDC-RMS1-505

After completion of the course,

No	Course Outcome	PO Mapping
CO 1 (Remember)	the learner will be able to define different methodologies and techniques used in research work.	PO-1, PO-2, PO-3
CO 2 (Understanding)	the learner will be able to extend basic computer skills necessary for the conduct of research.	PO-1, PO-2, PO-3
CO 3 (Applying)	the learner will be able to apply the basic function and working of analytical instruments used in research.	PO-1, PO-2, PO-3
CO 4 (Analysing)	the learner will be able to select the required numerical skills necessary to carry out research.	PO-1, PO-2, PO-4

CO 5 (Evaluating)	the learner will be able to summarize the research problem for appropriate research design and aligned with social and sustainability concerns.	PO-1, PO-2, PO-3, PO4, PO5
CO 6 (Creating)	the learner will be able to devise the procedures of sampling, data collection, analysis and reporting.	PO-1, PO-2, PO3, PO4

Program: M.Sc. (Data Science)

Year: Part I

Semester: I

Course: Data Science – I

Course Code: MDC-ELES1-507

Course Outcomes:

After completion of the course,

No	Course Outcome	PO Mapping
CO 1 (Remember)	the learner will be able to describe basics of R programming.	PO-1, PO-4
CO 2 (Understanding)	the learner will be able to explain interfaces of R, Vectorizing Matrix operations.	PO-1, PO-4
CO 3 (Applying)	the learner will be able to illustrate different control structures, functions and scoping rules of R and apply debugging in R.	PO-1, PO-3, PO-4
CO 4 (Analysing)	the learner will be able to analyse the coding standards of R	PO-1, PO-2, PO-3, PO-4
CO 5 (Evaluating)	the learner will be able to evaluate R programming with data analysis case study.	PO-1, PO-2, PO-4, PO5
CO 6 (Creating)	the learner will be able to design data analysis models using R programming.	PO-1, PO-2, PO-4, PO5

Program: M.Sc. (Data Science)

Year: Part I

Semester: II

Course: Advanced Statistical Methods

Course Code: MDC-MAJS2-501

After completion of the course,

No	Course Outcome	PO Mapping
CO 1 (Remember)	the learner will be able to identify the fundamental concepts of expert system and its applications.	PO-1, PO-2, PO-4
CO 2 (Understanding)	the learner will be able to demonstrate probability and concept of fuzzy sets for solving AI based problems.	PO-1, PO-2, PO-4
CO 3 (Applying)	the learner will be able to apply fuzzy system for solving problems.	PO-2, PO-3, PO-4
CO 4 (Analysing)	the learner will be able to analyse the applications of genetic algorithms in different problems related to artificial intelligence for society and different sectors.	PO-2, PO-3, PO-4, PO5
CO 5 (Evaluating)	the learner will be able to summarize knowledge representation techniques in natural language.	PO1, PO-2, PO-3, PO-4, PO5
CO 6 (Creating)	the learner will be able to plan and design solutions by various soft computing approaches for a given problem	PO1, PO-2, PO-3, PO-4, PO5

Program: M.Sc. (Data Science)

Year: Part I

Semester: II

Course: Machine Learning

Course Code: MDC-MAJS2-503

After completion of the course,

No	Course Outcome	PO Mapping
CO 1 (Remember)	the learner will be able to identify various patterns hidden in the data set and recognise useful data for Machine Learning Algorithms	PO-1, PO-2, PO3, PO-4
CO 2 (Understanding)	the learner will be able to demonstrate the concepts in python and necessary libraries for Machine Learning algorithms using python.	PO-2, PO3, PO-4
CO 3 (Applying)	the learner will be able to apply various algorithms to the model for accuracy.	PO-2, PO3, PO-4
CO 4 (Analysing)	the learner will be able to analyse various Machine Learning algorithms to test data.	PO-2, PO-4
CO 5 (Evaluating)	the learner will be able to evaluate the tests using dummy data sets and different models of Machine Learning	PO-2, PO-4, PO-3
CO 6 (Creating)	the learner will be able to organise machine learning data using model complexity.	PO-2, PO3, PO-4, PO-5

Program: M.Sc. (Data Science)

Year: Part I

Semester: II

Course: Data Mining for Business Intelligence

Course Code: MDC-ELES2-505

Course Outcomes:

After completion of the course,

No	Course Outcome	PO Mapping
CO 1 (Remember)	the learner will be able to identify various patterns hidden in the data and recognise usefulness of business intelligent systems.	PO-1, PO-2, PO3, PO-4
CO 2 (Understanding)	the learner will be able to demonstrate the Data Mining concepts and the necessary libraries to be used in algorithms in python.	PO1, PO-2, PO3, PO-4
CO 3 (Applying)	the learner will be able to apply the life cycle of Knowledge Discovery Process and calculate the accuracy of the model.	PO-2, PO-3, PO-4, PO5
CO 4 (Analysing)	the learner will be able to analyse the Data using various Data Mining algorithms and appraise new data sets.	PO1, PO-2, PO-3, PO-4
CO 5 (Evaluating)	the learner will be able to assess and evaluate theoretical concepts of Data Mining with their applications.	PO1, PO-2, PO-4, PO-5
CO 6 (Creating)	the learner will be able to compile strengths and weaknesses of popular approaches of Data Mining.	PO1, PO-2, PO3 PO-4, PO-5