



SACRED HEART COLLEGE (AUTONOMOUS)

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Ready for
Every Good Work

A Don Bosco Institution of Higher Education, Founded in 1951 * Affiliated to Thiruvalluvar University, Vellore * Autonomous since 1987

Accredited by NAAC (4th Cycle – under RAF) with CGPA of 3.31 / 4 at 'A+' Grade

Sacred Heart College (Autonomous), Tirupattur District

1.2.1 List of New Courses

PGDDS

(PG Diploma in Data Science)

Semester	Code	Title of the Subject	L	TCP	P	IM	SM	TM	CD
I	CADD101	Optimization Techniques	4			50	50	100	4
	CADD102	Introduction to Data Science	4			50	50	100	4
	CADD103	Introduction to Data warehouse and Data Mining	4			50	50	100	4
	CADD104	Applied Probability and Statistics	4	1		50	50	100	4
			16	1		200	200	400	16
II	CADD201	Introduction to Data Analytics	4			50	50	100	4
	CADD202	Machine Learning	3	1		50	50	100	4
	CADD203	Deep Learning	4			50	50	100	4
	CADD204	Technologies for Data Science	3	1		50	50	100	4
	CADD205	Big Data in Internet of Things	3	1		50	50	100	4
	CADD206J	Internship			10	50	50	100	9
			17	3	10	300	300	600	29
Total Credits									45

Sacred Heart College (Autonomous), Tirupattur District

1.2.1 List of New Courses

Department: PGDDS

S.No	Course Code	Course Name
1.	CADD101	Optimization Techniques
2.	CADD102	Introduction to Data Science
3.	CADD103	Introduction to Data warehouse and Data Mining
4.	CADD104	Applied Probability and Statistics
5.	CADD201	Introduction to Data Analytics
6.	CADD202	Machine Learning
7.	CADD203	Deep Learning
8.	CADD204	Technologies for Data Science
9.	CADD205	Big Data in Internet of Things

SEMESTER-I

Optimization Techniques

CADD101

OPTIMIZATION TECHNIQUES

4-0-0:100

OBJECTIVES

- To understand the basics of optimization.
- To learn about linear programming, randomized optimization and genetic algorithms.

Course Outcomes

At the end of the course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO1	Generalize and Formulate linear programming problems.	K2,K6
CO2	Choose, Draft and Formulate transportation problems.	K3,K5,K6
CO3	Classify and Design assignment problems.	K3,K6
CO4	Devise , Build and Design inventory models.	K3,K5,K6
CO5	Elicit and Design queuing models	K3, K6
CO6	Define, Build and Formulate project management and Game theory problems.	K1,K2,K6

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	3	2	2	3	3	2	2	2	2.4
CO2	3	3	3	3	2	3	3	2	2	2	2.6
CO3	2	3	2	3	2	3	3	3	3	2	2.6
CO4	3	3	3	2	2	3	3	2	2	2	2.5
CO5	2	3	2	3	3	2	2	2	3	2	2.4
CO6	3	3	3	2	2	2	2	2	2	2	2.3
Mean Overall Score											2.5
Result											High

SEMESTER-I

Introduction to Data Science

CADD102

INTRODUCTION TO DATA SCIENCE

4-0-0:100

OBJECTIVES

- To learning the founding principles of Datascience.
- To learn Artificial intelligence concepts, searching and learning algorithms.

Course Outcomes

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Discover and Discuss the various technologies used in data science	K1,K2
CO 2	Recognize and Elicit the founding principles of Data Science.	K1,K2
CO 3	Identify, compare and correlate the Artificial intelligence concepts, searching and learning algorithms.	K1,K2,K4
CO 4	Identify and illustrate the methods and techniques commonly used in data science.	K1,K3
CO 5	Analyze and Evaluate how data analysis, inferential statistics, modeling, machine learning, and statistical computing can be utilized in an integrated capacity.	K4,K5
CO 6	Observe and Demonstrate the ability to clean and prepare data for analysis and assemble data from a variety of sources.	K1,K5

Mapping of CO with PO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	2	2	2	3	3	2	2	2	2.4
CO2	3	3	2	2	2	3	3	2	2	2	2.4
CO3	3	3	2	2	2	3	3	2	2	2	2.4
CO4	3	3	2	2	2	3	3	2	2	2	2.4
CO5	3	3	3	2	2	3	3	2	2	2	2.5
CO6	3	3	3	2	2	3	3	2	2	2	2.5
Mean Overall Score											2.4
Result											High

SEMESTER-I

Introduction to Data warehouse and Data Mining

CADD103 INTRODUCTION TO DATA WAREHOUSE AND DATA MINING 4-0-0:100

OBJECTIVES

- To learn about the basics of Data warehouse and data mining.
- To understand clustering and web mining.

Course Outcomes

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Remember, Understand and explain the fundamentals of Data Warehouse and Data Mining	K1, K2, K4
CO 2	Apply the concepts of association mining, clustering classification and Regression	K2, K3
CO 3	Analyze and choose a suitable data mining task for a specific problem and support the choice of approach adopted.	K4, K5
CO 4	Compare and Correlate the results various data mining techniques for a specific problem.	K2,K4
CO 5	Identify and Apply real-world problems in business and scientific information using data mining techniques	K1,K5
CO 6	Draft and Build statistical predictive models using various techniques such as neural networks, decision trees and logistic regression.	K4,K6

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	2	2	2	2	1	2	2	2	2.1
CO2	3	3	3	3	3	3	2	3	2	2	2.7
CO3	3	3	3	3	3	3	2	2	3	2	2.7
CO4	3	3	3	3	3	3	2	2	3	3	2.8
CO5	3	3	3	2	3	3	2	3	2	2	2.6
CO6	3	3	3	3	3	3	2	3	3	3	2.9
Mean Overall Score											2.6
Result											High

SEMESTER-I

Applied Probability and Statistics

CADD104

APPLIED PROBABILITY AND STATISTICS

4-1-0:100

OBJECTIVES

- To learn the basics of probability.
- To learn the basics of statistics.

Course Outcomes

At the end of the course the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Be acquaint with the basic concepts and applications of statistics data	K2,
CO 2	Apply probability and linear regression methods to solve the simple / complex real world problems.	K3
CO 3	Correlate and use the Multiple Linear regression approach to determine the mathematical relationship among random variables.	K4
CO 4	Understand the process of developing a probabilistic model that best describes the relationship between dependent and independent variables.	K1, K5
CO 5	Examine the differences between all the variable use in the experiment	K2, K4
CO 6	Perform ANOVA test and infer the conclusion for a given data set	K6, K3

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	2	2	1	3	2	3	1	1	2
CO2	3	3	2	3	1	3	3	2	1	2	2.3
CO3	3	2	1	2	1	3	3	3	1	1	2
CO4	3	3	1	2	1	3	3	2	1	1	2
CO5	3	2	1	2	1	3	3	2	1	1	1.9
CO6	3	3	2	3	1	3	3	3	2	2	2.5
Mean Overall Score											2.1

SEMESTER-II**Introduction to Data Analytics****CADD201****INTRODUCTION TO DATA ANALYTICS****4-0-0:100****OBJECTIVES**

- To Learn the basics of Data Analytics.
- To understand the Data Analytics Techniques.

Course Outcomes

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Observe and Discuss the relevance of python in Data Analytics.	K1,K2
CO 2	Recognize and Use the numpy package in python for data analytics.	K1, K3
CO 3	Observe, Draft and Develop data manipulation applications using pandas.	K1,K4,K6
CO 4	Enumerate and Practice hierarchical indexing in pandas.	K1,K3
CO 5	Devise and Create data visualization with MATPLOTLIB.	K1,K6
CO 6	Identify and Integrate various components of python to perform data analytics.	K1, K6

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	2	2	3	3	2	2	2	2.5
CO2	2	3	2	3	2	3	3	2	2	3	2.5
CO3	2	3	2	3	2	3	3	3	2	2	2.5
CO4	3	3	3	2	2	3	3	2	2	3	2.6
CO5	2	3	2	3	2	3	2	2	2	2	2.3
CO6	3	3	3	2	2	3	3	2	2	2	2.5
Mean Overall Score											2.5

SEMESTER-II**Machine Learning**

CADD202

MACHINE LEARNING

3-1-0:100

OBJECTIVES

- To learn the concepts of machine learning.
- To understand association rules, classification and prediction techniques.

Course Outcomes

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Understand and Comprehend the Machine Learning Concepts	K1, K2
CO 2	Identify the use cases of the supervised and unsupervised learning algorithms	K3
CO 3	Analyse the logic behind the execution of various classifiers	K4
CO 4	Compute and compare the performance of different algorithms for mining data	K2, K6
CO 5	Demonstrate and analyse the clustering methods	K3, K4
CO 6	Propose solution for real word problems	K5

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	2	2	1	3	2	3	1	1	2.1
CO2	3	3	3	3	1	3	2	3	2	1	2.4
CO3	3	2	1	3	1	3	2	3	1	1	2
CO4	3	3	3	2	1	3	2	2	1	1	2.1
CO5	3	3	3	2	1	3	1	2	1	1	2
CO6	3	3	3	2	1	3	3	2	1	1	2.2
Mean Overall Score											2.133333333
Result											High

SEMESTER-II

Deep Learning

CADD203

DEEP LEARNING

4-0-0:100

OBJECTIVES

- To understand Linear Regression and Regularization.
- To learn the concepts of Deep Learning and its applications.

Course Outcomes

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Observe and Apply the concepts of Deep Learning and its applications	K1,K3
CO 2	Identify and Use the configuration of Deep Feed Forward Networks	K1,K3
CO 3	Comparing and Correlating the Learning and Optimization Algorithms	K2,K4
CO 4	Identify and Practice Regularization for Deep Learning	K1,K3
CO 5	Observe and Discuss the concepts of Convolutional networks	K1,K2
CO 6	Identify, Analyze and Evaluate the applications of Deep Learning	K1,K4,K5

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	1	2	3	3	3	1	2	3	3	2.4
CO2	3	1	2	3	2	3	1	2	3	2	2.2
CO3	3	1	1	1	1	3	1	1	1	1	1.4
CO4	3	1	1	1	1	3	1	1	1	1	1.4
CO5	3	1	1	1	1	3	1	1	1	1	1.4
CO6	3	1	1	1	1	3	1	1	1	1	1.4

Mean Overall Score	2
Result	High

SEMESTER-II

Technologies for Data Science

CADD204

TECHNOLOGIES FOR DATA SCIENCE

3-1-0:100

OBJECTIVES

- To understand the technologies in data science.
- To learn the concepts of Hadoop, Map-Reduce, HIVE, SQOOP and PIG.

Course Outcomes

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Identify and Discover the various technologies used in Data Science	K1,K2
CO 2	Recognize and Discuss Big Data and its analytics in the real world	K1,K2
CO 3	Identify, Draft and Develop Big Data Solutions using Hadoop	K1,K4, K6
CO 4	List and Leverage Hadoop as a reliable, scalable MapReduce framework	K1,K3
CO 5	Demonstrate and Install and interact the HIVE, SQOOP and PIG tools	K2,K5
CO 6	Apply and Demonstrate the ability to clean and prepare data for analysis using HIVE, SQOOP and PIG tools	K3,K5

Mapping of CO with PO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	2	2	2	3	2	2	2	2	2.2
CO2	3	2	2	2	2	3	2	2	2	2	2.2
CO3	3	2	2	2	2	3	2	2	2	2	2.2
CO4	3	2	2	2	2	3	2	2	2	2	2.2
CO5	3	2	2	2	2	3	2	2	2	2	2.2

CO6	3	2	2	2	2	3	2	2	2	2	2.2
Mean Overall Score											2.2
Result											High

SEMESTER-II

Big Data in Internet of Things

CADD205

BIG DATA IN INTERNET OF THINGS

3-1-0:100

OBJECTIVES

- To Learn the role of Big Data in IoT.
- To understand the concepts of data in cloud and edge.

Course Outcomes

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Observe and Discuss the role of Big Data and IoT.	K1,K2
CO 2	Recognize and Correlate the Big Data and analytics in the real world.	K1,K4
CO 3	Observe, Analyze and Evaluate the Big Data framework like Hadoop and NOSQL to efficiently store and process Big Data to generate analytics.	K1,K4,K5
CO 4	Understand and Apply the application areas of IOT	K1,K3
CO 5	Determine and Justify the revolution of IoT Devices.	K3,K5
CO 6	Identify and Demonstrate the building blocks of Internet of Things and characteristics.	K1,K2

Mapping of CO with PO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	2	2	1	3	2	3	1	2	2.1
CO2	3	3	2	3	1	3	3	1	1	2	2.2
CO3	3	2	2	2	1	3	2	1	1	1	1.8
CO4	3	3	2	3	1	3	2	1	2	2	2.2
CO5	3	3	3	2	1	3	2	1	1	2	2.1

CO6	3	2	2	3	1	3	2	1	2	1	2
Mean Overall Score											2.1
Result											High