

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
Approved by Government of Tamil Nadu and Accredited by NAAC A++ Grade (3rd Cycle- 3.64 CGPA)
Dr. N.G.P.-Kalapatti Road, Coimbatore-641048, Tamil Nadu, India
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BoS

9th

Board of Studies Meeting

Department of Computer Science with Data Analytics

The minutes of the 9th meeting of Board of Studies held on 16.10.2023 at 10.00 am at the Seminar Hall 3.

Members Present:

S.No.	Name	Category
1	Dr. V. Pream Sudha	Chairman
2	Dr. J. Satheeshkumar	Subject Expert
3	Dr. S. Bharathidasan	Subject Expert
4	Ms.Jennifer Xavier	Industrial Expert
5	Dr. A C Sountharraj	Member
6	Dr.R. Suganthi	Member
7	Ms. Bharathi Anbarasan	Member
8	Ms. C. Karpagam	Member
9	Mrs. S. Shenbaha	Member
10	Mrs.R.Ranjani	Member
11	Ms.S.Govardhini	Member
12	Mr.C.Anbarasan	Member
13	Ms. A. Roselin	Member
14	Dr.D.Parasakthi	Co-opted Member
15	Dr. R. Sowrirajan	Co-opted Member
16	Dr. R. Vithya Prabha	Co-opted Member
17	Dr. N. Kuppuchamy D.	Co-opted Member
18	Sanjai S (232DA027)	Student Representative- PG

The HoD and Chairman of the department of CS with Data Analytics welcomed and introduced all the members and appreciated them for their continuous support, contribution for the development of academic standard and enrichment of the syllabus.

Further, Chairman informed the inability of the following members to attend the meeting and requested to grant leave of absence.

1. Dr. Malar B - Subject Expert
2. Mr. A. M. Sabarish - Alumni
3. Dr.S.Mohan- Co-opted Member

The items of the agenda were taken one by one for discussion and the following resolutions were passed.

Item 9.1

To review and approve the minutes of the previous meeting held on 09.06.2023.

The chairman of the Board presented the minutes of the previous meeting held on 09.06.2023 and requested the members to approve. After brief discussion the following resolution was passed.

Resolution:

Resolved to approve the minutes of the previous meeting held on 09.06.2023.

Item 9.1(a): To consider and approve the syllabi for II semester for the students admitted during the academic year 2023-24.

The chairman presented the detailed scheme and syllabus for the II semester for the students admitted from the academic year 2023-24 onwards. The details of changes made also presented as follows.

Changes Made:

B.Sc Computer Science with Data Analytics : NIL

M.Sc. Computer Science with Data Analytics : NIL

B.Sc Computer Science with Data Analytics		
Course	Code	Reason
NIL	NIL	NIL
M.Sc. Computer Science with Data Analytics		
Course	Code	Reason
Core Practical : Data Analytics using R	234DA2A2CP	Included programs to implement the concepts of Natural Language Processing using R

New Courses Introduced:

B.Sc Computer Science with Data Analytics : NIL

M.Sc. Computer Science with Data Analytics : 3

B.Sc Computer Science with Data Analytics		
Course	Code	Reason
NIL	NIL	NIL
M.Sc. Computer Science with Data Analytics		
Course	Code	Reason
Core : Data Mining	234DA2A2CB	To familiarize the classical models and algorithms in data mining for extracting information from a dataset.
Core Practical : Data Mining	234DA2A2CQ	To provide the skills needed for implementing Data Mining Algorithms
EDC :Digital Marketing Analytics	235BA2A2EA	To provide techniques for leveraging web analytics data to shape marketing strategy

Courses Removed:**B.Sc Computer Science with Data Analytics :****M.Sc. Computer Science with Data Analytics : 3**

B.Sc. Computer Science with Data Analytics		
Course	Code	Reason
NIL	NIL	NIL
M.Sc. Computer Science with Data Analytics		
Core: Advanced Database Management Systems	224DA2A2CB	Overlapping contents in DSE Modern Databases
Core Practical : Advanced Database Management Systems	224DA2A2CQ	NoSQL related programs included in Big Data Analytics lab
EDC : Supply Chain Management	225IB2A2EA	To be replaced by Digital marketing analytics as it is much needed to explore data from the digital landscape used by majority users

IDC Offered

Course	Code	Department
Business Analytics	234DA2A2EA	M.Com, M.Com.IB, M.Com.CS, M.Com CA
Foundations of Data Analytics	234DA2A2EB	M.Sc Mathematics
Introduction to Data Science	234DA1A2EB	B.Sc. Mathematics

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the II semester for the students admitted from the academic year 2023-24 onwards.

Item 9.1(b) : To consider and approve the changes, if any, in the syllabi for IV semester for the students admitted during the academic year 2022-23.

The Chairman presented the detailed syllabus for the IV semester for the students admitted from the academic year 2022-23 onwards. The details of changes made also presented as follows:

Changes Made:

B.Sc. Computer Science with Data Analytics		
Course	Code	Reason
Core: Foundations of Artificial Intelligence	224AI1A4CA	Common course offered by AIML department has been replaced for Artificial Intelligence
Core: Software Engineering	224IT1A4CA	Common course offered by IT department has been replaced
M.Sc. Computer Science with Data Analytics		
Course	Course	Course
NIL	NIL	NIL

New Courses Introduced:

B.Sc. Computer Science with Data Analytics		
Course	Code	Reason
Core : Python for Data Science	224DA1A4EP	To master the concepts of Python programming for implementing data science process
M.Sc. Computer Science with Data Analytics		
Course	Course	Course
NIL	NIL	NIL

Courses Removed: NIL

Course	Code	Reason
B.Sc. Computer Science with Data Analytics		
Course	Course	Course
NIL	NIL	NIL
M.Sc. Computer Science with Data Analytics		
Course	Course	Course
NIL	NIL	NIL

IDC Offered

Course	Code	Department
NIL	NIL	NIL

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the IV semester for the students admitted from the academic year 2022-23 onwards.

Item 9.2: To approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-24.

The Chairman presented the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-24.

Resolution:

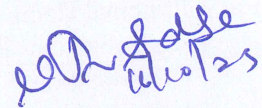
Resolved to approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-2024.

Item 9.3: To consider and approve any other item brought forward by the Chairman and the members of the board.

No other item was brought forward.

Finally the Chairman thanked all the members for their cooperation and contribution in enriching the syllabus with active participation in the meeting and sought the same spirit in the future also. The meeting was closed with formal vote of thanks proposed by Dr. V. Pream Sudha, Head and Chairman- Computer Science with Data Analytics BoS.

Date 16-10-23

A handwritten signature in blue ink, appearing to read 'Dr. V. Pream Sudha', written in a cursive style.

Signature

Syllabus Revision
Faculty: Computer Science with Data Analytics Board: CSDA
Programme: PG
Course Code/ Name: 234DA2A2CB - Core : Data Mining

Semester: II

Unit	Course Contents
I	Introduction to Data Mining Introduction: Data Mining - Database Data – Data Mining Technologies - Data Objects and Attribute types - Measuring Data Similarity and Dissimilarity: Proximity Measures for Nominal Attributes - Proximity Measures for Binary Attributes - Minkowski Distance - Data Preprocessing: Data Cleaning - Data Integration - Data Reduction: Wavelet Transforms - Principal Components Analysis - Regression Models - Data Transformation by Normalization - Discretization: Binning – Histogram
II	Classification Introduction - Decision Tree Induction: Attribute Selection Measures - Tree Pruning - Bayes Classification Methods: Naïve Bayesian Classification - Rule Based Classification - Model Evaluation and Selection: Metrics for Evaluating Classifier performance - Techniques to improve Classification accuracy: Ensemble Methods - Bagging - Boosting - Random Forests - Advanced Methods: Support Vector Machines - K-Nearest Neighbor Classifiers
III	Cluster Analysis Introduction - Partitioning Methods - Hierarchical Methods: Agglomerative - Hierarchical - Distance measures in Algorithmic methods -BIRCH - Density Based Methods: DBSCAN - Grid Based Methods: STING - Evaluation of Clustering: Determining the Number of Clusters - Measuring Clustering Quality - Clustering high dimensional data: Problems - Challenges - Methodologies - Clustering graph and network data.
IV	Outlier Analysis, Mining Frequent Patterns, Associations and Correlations Outlier Detection: Outlier and Outlier analysis - statistical approaches - proximity based approaches - Clustering based approaches - Mining Frequent Patterns, Associations and Correlations: Market Basket Analysis - Apriori Algorithm - Association Rules from frequent itemsets - Advanced Pattern Mining: Pattern Mining in Multilevel, Multidimensional Space
V	Data Mining Trends and Research Mining Complex data types - Other methodologies of data mining - Data Mining Applications: Financial Data Analysis - Retail and Telecommunication Industries - Science and Engineering - Intrusion Detection and Prevention - Data Mining and Recommender Systems - Data Mining and Society.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

<input checked="" type="checkbox"/>	Skill Development	<input type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input type="checkbox"/>	Innovations
<input type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
<input type="checkbox"/>	Social Awareness/ Environment	<input type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science with Data Analytics Board: CSDA

Programme: PG

Semester: II

Course Code/ Name: 234DA2A2CQ - Core Practical : Data Mining

Unit	List of Programs
1	Program to implement Linear regression for house price prediction
2	Program to implement SVM for .Sentiment analysis of reviews
3	Program to implement KNN for phishing website detection
4	Program to implement Bayesian classification for Credit card fraud detection
5	Program to implement Density based clustering
6	Program to implement Outlier detection
7	Program to implement customer segmentation
8	Program to implement Text mining
9	Program to implement Financial Data Analysis
10	Program to implement Multimedia data mining
11	Program to implement Movie recommender systems
12	Program to implement clickstream mining

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

<input checked="" type="checkbox"/>	Skill Development	<input type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input type="checkbox"/>	Innovations
<input type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
<input type="checkbox"/>	Social Awareness/ Environment	<input type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science with Data Analytics Board: CSDA

Programme: PG

Semester: II

Course Code/ Name: 234DA2A2CP - CORE PRACTICAL:R FOR DATA ANALYTICS

Unit	Existing	Changes
1	Program to perform Vectors in R	Programs to implement Text preprocessing in R
2	Program to perform Matrix Manipulation in R	Program to Implement Text Classification in R
3	Program for Operations on String and List in R	Programs to implement Term frequency and Inverse Document Frequency in R
4	Program to Implement Regression using R	
5	Program for Exploratory Data Analysis in R	
6	Program to Import data sets and Perform read and write in R	
7	Program to Implement Graphics in R	
8	Program to Implement Cluster analysis in R	
9	Program to Implement Time Series in R	
10	Program to perform operations on Factors in R	
11	Program to perform operations on Data Frame in R	
12	Program to Implement Classification in R	

PERCENTAGE OF SYLLABUS REVISED: 30%

COURSE FOCUSES ON:

<input checked="" type="checkbox"/>	Skill Development	<input type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input type="checkbox"/>	Innovations
<input type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
<input type="checkbox"/>	Social Awareness/ Environment	<input type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science with Data Analytics Board: CSDA

Programme: PG

Semester: II

Course Code/ Name: 235BA2A2EA - EDC :Digital Marketing Analytics

Unit	Course Contents
I	<p>Introduction to Digital Marketing Digital Marketing – Origin and Development – Meaning -Strategy – Digital Marketing plan – Ethical and Legal Framework – Skills Required in Digital Marketing – Carriers in Digital Marketing – Digital vs. Real Marketing – Digital Marketing Trends and Challenges in E-Commerce and Business Models- Steps In Digital Marketing Plan- Planning Using Decision Trees. Case Study on digital marketing strategy</p>
II	<p>Importance of SEO and Digital Marketing Channels Search Engine Optimization (SEO) – The Concept of SEO – On-Page and Off-page Optimization -Search Engine Marketing - Blogs – Social Media Reach – E-mail Marketing – You Tube Marketing – Website Design and Hosting – Pay per Click and Search Engine Marketing- Metrics and Digital Marketing Channels. Case Study on content marketing</p>
III	<p>Social Media Marketing The role of social media marketing - Goals and strategies - Identifying target audiences - Social media platforms and social network sites - Micro blogging - Video marketing - Social media monitoring and maintenance- Social media marketing plan- Social Media Analytics Case Study on social media marketing</p>
IV	<p>Types of Digital Promotions Digital Marketing and Advertising – PPC advertising - Display Advertisement - Types of Digital Promotions – Print Advertising - Display Screens - Content Marketing and Customization Strategies – Digital Marketing and Understanding Buyer Behavior – Digital Advertising Market in India- Market Research - Market Information System - Market Survey. Case Study on ethical challenges in digital marketing</p>
V	<p>Mobile Marketing and Web Analytics Mobile advertising – Mobile marketing toolkit – Mobile marketing features – Mobile marketing on social networks- Mobile analytics- Web analytics – Key metrics – Making web analytics actionable –Types of tracking codes. Case Study on Mobile Marketing</p>

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

<input checked="" type="checkbox"/>	Skill Development	<input type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input type="checkbox"/>	Innovations
<input type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
<input type="checkbox"/>	Social Awareness/ Environment	<input type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science with Data Analytics

Programme: UG

Course Code/ Name: 234DA1A4EP - Core : Python for Data Science

Board: CSDA

Semester: IV

Unit	Course Contents
I	Introduction to Data Analysis & Python An Introduction to Data Analysis: Data Analysis - Knowledge Domains of the Data Analyst - Understanding the Nature of the Data - The Data Analysis Process - Quantitative and Qualitative Data Analysis - Open Data - Introduction to the Python World: Python - The Programming Language - Data Structure - Functional Programming Practical a)Programs using functions. b)Programs using tuples. c)Programs using sets.
II	NumPy Library NumPy: N-dimensional array - Basic Operations - Indexing, Slicing, and Iterating - Conditions and Boolean Arrays - Shape and Array Manipulation - Copies of Objects - Vectorization - Broadcasting - Structured Arrays- Reading and Writing Array Data on Files. Practical a)Programs using aggregate functions. b)Programs for array manipulation. c)Programs for reading and writing in files.
III	Pandas Library Pandas: Pandas Data Structures: Series - DataFrame - Index Object - Functionalities on Indexes - Operations Between Data Structures - Function Application and Mapping - Sorting and Ranking - Correlation and Covariance - Not a Number Data - Hierarchical Indexing and Leveling Practical a)Programs using DataFrame b)Programs to deal with missing values c) Programs to find Correlation and Covariance
IV	Data Manipulation using Pandas Data Preparation - Concatenating - Data Transformation - Removing Duplicates- Mapping- Discretization and Binning - Permutation - String Manipulation - Built -in Methods - Regular Expressions - Data Aggregation - Group Iteration - Advanced Data Aggregation. Practical a)Programs to implement data transformation b) Programs to implement string manipulation c) Programs to implement data aggregation
V	Data Visualization with matplotlib The matplotlib Architecture - pyplot - The plotting Window - Using the keyword args - Adding Elements to the Chart - Line Charts - Histograms - Bar Charts - Pie Charts - Advanced Charts Practical a)Programs to visualize data using Bar Charts, Pie charts b)Programs to visualize data using Advanced Charts c)Project using Advanced libraries

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

<input checked="" type="checkbox"/>	Skill Development	<input type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input type="checkbox"/>	Innovations
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ATTENDANCE OF THE NINTH BOARD OF STUDIES MEETING

Faculty: Computer Science

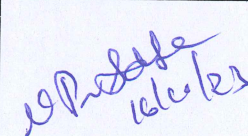
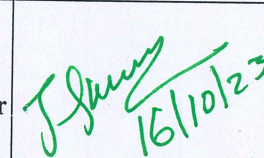
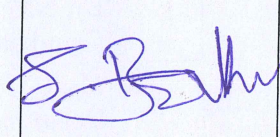
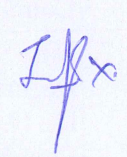
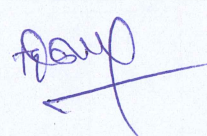
Board: CS with Data Analytics

VENUE : Seminar Hall III


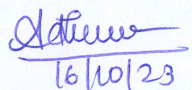
DATE : 16/10/2023

TIME : 10.00 AM

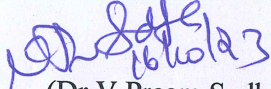
The following members were present for the Board of Studies meeting

S.No.	Name and Designation of the Member	Position	Signature
1.	Dr. V. Pream Sudha HoD I/C Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Chairman	
2.	Dr. J. Satheeshkumar Associate Professor Department of Computer Applications Bharathiar University Coimbatore	Member (Subject Expert) Nominated by Vice Chancellor	
3.	Dr. Malar B Professor Department of Applied Mathematics and Computational Sciences PSG College of Technology Coimbatore	Member (Subject Expert) Nominated by Academic Council	— ABSENT —
4.	Dr. S. Bharathidason Professor & Head Department of Computer Science Loyola College Chennai	Member (Subject Expert) Nominated by Academic Council	
5.	Ms. Jennifer Xavier Analytics Manager Loyalties Consulting, Kalyan Nagar, Bengaluru-560043, Karnataka, India	Member (Industrial Expert)	
6.	Mr. A. M. Sabarish Associate Data Engineer Cloud Destination Coimbatore	Alumni	— ABSENT —
7.	Dr. N. Kuppuchamy D. HoD Department of Tamil Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (Tamil)	

8.	Dr. R. Vithya Prabha HoD Department of English Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (English)	<i>R. Vithya Prabha</i> 16/10/23
9.	Dr. R. Sowrirajan HoD Department of Mathematics Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (Mathematics)	<i>R. Sowrirajan</i>
10.	Dr.D.Parasakthi HoD Department of Commerce Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (Commerce)	<i>D. Parasakthi</i> 16/10/23
11.	Dr.S.Mohan HoD Department of Commerce Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (BBA)	- ABSENT -
12.	Sanjai S (232DA027) I M.Sc. CSDA	Student Representative	<i>S. Sanjai</i>
13.	Dr. A C Sountharraj Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	<i>A. C. Sountharraj</i> 16/10/23
14.	Dr.R. Suganthi Department of CS with Data Analytics Dr. N.G.P. Arts and Science College, Coimbatore	Member	<i>R. Suganthi</i> 16/10/23
15.	Ms. Bharathi Anbarasan Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	<i>B. Anbarasan</i> 16/10/2023
16.	Ms. C. Karpagam Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	<i>C. Karpagam</i> 16/10/23
17.	Mrs. S. Shenbaha Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	<i>S. Shenbaha</i> 16/10/23
18.	Mrs.R.Ranjani Department of CS with Data Analytics Dr. N.G.P. Arts and Science College, Coimbatore	Member	<i>R. Ranjani</i> 16/10/23
19.	Ms.S.Govardhini Department of CS with Data Analytics Dr. N.G.P. Arts and Science College, Coimbatore	Member	<i>S. Govardhini</i> 16/10/23

20.	Mr.C.Anbarasan Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	
21.	Ms. A. Roselin Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	 16/10/23

Date : 16/10/2023


(Dr. V. Pream Sudha)

Dr. V. PREAM SUDHA, MCA., M.
Professor and Head
Dept. of Computer Science with Data Analytics
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Kalepatti Road, Coimbatore - 641 004

