Department of Computer Science with Data Analytics

Board of Studies Meeting

The minutes of the 15th meeting of the Board of Studies held on 28.10.2026 at 10.00 am through online mode.

Members Present:

S.No.	Name	Category
1.	Dr. V. Pream Sudha Professor and HoD Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Chairman
2.	Dr. K. Manikandan Associate Professor & HoD Dept of Computer Science PSG College of Arts and Science Coimbatore Email : prof.k.manikandan@gmail.com Mobile No : 9443179433	University Nominee
3.	Dr. J.Chandra Professor Dept of Computer Science Christ University Bengaluru Email : chandra.j@christuniversity.in Mobile No : 9886306307	Subject Expert
4.	Dr. V.Kumutha Professor Dept of Computer Science Avinashilingam University, Coimbatore Email : kumutha_cs@avinuty.ac.in Mobile No :9843289697	Subject Expert
5.	Mr.Nallaperumal Thanthondri Director-Product Customization Cantier Systems, Coimbatore Email : nalla@cantier.com Mobile No: 9894241104	Industry Expert
6.	Mr. Santhosh Kumar Associate Data Engineer Cloud Destinations Coimbatore Email : santhosh.sadaiyappan@gmail.com Mobile No:6383172044	Alumni

7.	Dr. N. Kuppuchamy D. Associate Professor and Head Department of Tamil	Co-opted Member
8.	Dr.A.HazelVerbina Professor and HoD Department of English	Co-opted Member
9.	Dr.S. Kokilamani Associate Professor and Head i/c Department of Mathematics	Co-opted Member
10.	Dr.S.Arunpriya Professor and Head i/c Department of Commerce	Member
11.	Dr. A C Sountharraj	Member
12.	Dr.R. Suganthi	Member
13.	Dr.V.Sangeetha	Member
14.	Ms. C. Karpagam	Member
15.	Dr.V.Santhana Lakshmi	Member
16.	Mrs.R.Ranjani	Member
17.	Ms.S.Govardhini	Member
18.	Mr.C.Anbarasan	Member
19.	Ms. A. Roselin	Member
20.	Ms.S.Shri Tharani	Member
21.	Ms.M.Preethi	Member
22.	Mr.Bharath	Student Representative

The HoD and Chairman of the Department of Computer Science with Data Analytics welcomed and introduced all the members and requested for their continuous support, contribution for the development of academic standard and enrichment of the syllabus.

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

Item 15.1: *To review and approve the minutes of the previous meeting held on 02.04.2026.*

The chairman of the Board presented the minutes of the previous meeting held on 02.04.2026 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 02.04.2026.

Item 15.2: *To consider and approve the scheme, regulation and syllabi for II semester for the students admitted during the academic year 2026-27.*

The chairman presented the detailed scheme, regulation and syllabus for the II semester for the students admitted during the academic year 2026-27. The members deliberated in detail and unanimously decided to adopt the syllabi with the following changes.

New Course Introduced

M.Sc. Computer Science with Data Analytics

Course Code	Course	Reason
26DAP2CD	Core: Exploratory Data Analysis	Exploratory Data Analysis has been introduced to equip students with the skills to explore, interpret complex datasets and to ensure data quality before applying advanced analytical techniques.

Changes Made

M.Sc. Computer Science with Data Analytics

Course Code	Course	Change & Reason
26DAP2DA	DSE: Information and Network Security	Mr. Nallaperumal suggested including OWASP Top 10 Web Application Security Risks and Mitigation to familiarize students with common web application vulnerabilities and preventive measures.

After discussion the following resolution was passed.

Resolution:

Resolved to approve the syllabus of the II semester for the students admitted during the academic year 2026-2027.

Item 15.3: *To consider and approve the syllabi for IV semester for the students admitted during the academic year 2025-26.*

The Chairman presented the detailed syllabus for the IV semester for the students admitted during the academic year 2025-26. The members deliberated in detail and unanimously decided to retain the syllabi.

After discussion the following resolution was passed.

Resolution:

Resolved to approve the syllabus of the IV semester for the students admitted during the academic year 2025-2026.

IDC offered:

Course Code	Course	Department
25DAU4IB	Business Data Analytics	Commerce PA

Item 15.4: *To consider and approve the syllabi for VI semester for the students admitted during the academic year 2024-25.*

The Chairman presented the detailed syllabus for the VI semester for the students admitted during the academic year 2024-25. The members deliberated in detail and unanimously decided to adopt the syllabi with the following changes

After discussion the following resolution was passed.

Changes Made

B.Sc. Computer Science with Data Analytics

Course Code	Course	Change & Reason
24DAU6CA	Core: Next Generation Databases	Mr.Nallaperumal suggested to include Vector Databases in Unit III to familiarize students with modern retrieval techniques used in AI applications and Retrieval Augmented Generation (RAG) aligning with emerging industry trends
24DAU6DA	DSE: Principles of Internet of Things	Dr.Chandra proposed to include MQTT protocol in Unit III to familiarize students with lightweight messaging protocols for efficient data transfer between IoT devices.

Resolution:

Resolved to approve the syllabus for the VI semester for the students admitted during the academic year 2024-25.

Item 15.5: *To consider and approve the self study courses for the students admitted during the academic year 2026-27*

Course Code	Course
26DAUSSA	Opinion Mining and Emotion Analysis
26DAUSSB	Ethical Data Science

Resolution:

Resolved to approve the self-study courses for the students admitted during the academic year 2026-27.

Item 15.6: *To consider and approve Students Skill Development Course (SSDC)/ NPTEL Courses that are equivalent to course curriculum/Domain- Specific Courses.*

The board discussed the Students Skill Development Course (SSDC)

NPTEL/Swayam

- Business Intelligence and Analytics
- Programming with Generative AI
- Natural Language Processing
- Introduction to Large Language Models
- Learning Analytic Tools

Industry Aligned Skill Course

- Data Visualization and Story Telling

After discussion the following resolution was passed.

Resolution : Resolved to approve Students Skill Development Course (SSDC)/ NPTEL courses that are equivalent to course curriculum/ Domain- Specific Courses.

Item 15.7: *To approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2026-27.*

The Chairman presented the panel of examiners for Question paper setting, Question paper Scrutiny, conduct and evaluation of practical and theory examinations and the same shall be submitted to CoE for the even semester of the academic year 2026-27.

Resolution:

Resolved to approve the panel of examiners for Question paper setting, Question paper Scrutiny and conduct of practical and theory examinations for the even semester of the academic year 2026-2027.

Item 15.8: ***To consider and approve any other item brought forward by the Chairman and the members of the board.***

The board discussed and approved the courses offered by NPTEL that are equivalent to the courses offered in the curriculum in the V and VI semesters.

NPTEL Courses	Equivalent Courses	Semester
Introduction to Machine Learning	Principles of Machine Learning	V
Cloud Computing	Cloud Computing Fundamentals	V
Big Data Computing	Big Data Analytics	III

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.

Date:28.10.2026

28/10/26

(Dr. V.Pream Sudha)

BoS Chairman/HoD
Department of Computer Science with Data Analytics
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

Syllabus Revision

Faculty: Computer Science **Board: CS with Data Analytics**
Programme: PG **Semester: II**
Course Code/ Name: 26DAP2CD - Core : Exploratory Data Analysis

Unit	Contents
1	**Exploratory Data Analysis Fundamentals:** Understanding Data Science – Significance of Exploratory Data Analysis (EDA) – Making Sense of Data – Comparing EDA with Classical and Bayesian Analysis – Software Tools Available for EDA – Overview of Key Libraries-Numpy- Pandas- Matplotlib, SciPy in Python. Visual Aids for EDA: Line Chart - Area Plot & Stacked Plot-Pie Chart -Table Chart - Polar Chart, Lollipop Chart.
2	**Data Cleaning and Preprocessing:** Data Cleaning and Preprocessing: Importance of Data Quality- Dimensions of Data Quality. Data Profiling: Understanding Data Profiling- Profiling with Pandas. Cleaning Messy Data and Data Manipulation: Renaming Columns- Removing irrelevant columns- dealing with inconsistent datatypes. Detecting and Handling Missing Values and Outliers – Normalization and Standardization
3	**Univariate, Bivariate and Timeseries Analysis:** Univariate Analysis - Bivariate Analysis – Analyzing Two Variables using Scatter Plot - Cross tabulation and Two-Way Tables – Pivot Tables – Bar Chart – Boxplot – Histogram -Correlation Analysis. Time-Series Analysis: Trend and Seasonality – Time-Series Decomposition – Smoothing Techniques – Differencing. Case Study on Summary Statistics
4	**Summary Statistics, Grouping Datasets and Encoding:** Understanding Statistics – Measures Of Central Tendency: Mean, Median And Mode – Measures Of Dispersion: Standard Deviation – Variance – Skewness – Kurtosis – Calculating Percentiles And Quartiles. Grouping Datasets: Groupby Mechanics - Aggregation. Handling Categorical Features: Label Encoding – One Hot-Encoding- Target Encoding – Frequency Encoding – Binary Encoding. Case study : EDA On Wine Quality Analysis
5	**Applications and Case Studies in Data Analysis :** Financial Analytics and Risk Management: Understanding Loan Portfolio – Loan Default Analysis using Hypothesis Testing and Regression – Credit Card Fraud Detection. Marketing Analytics: Understanding Sales Patterns - Evaluating Marketing Channel Effectiveness - Customer Churn Prediction.- Applications in Healthcare and Medical Research

PERCENTAGE OF SYLLABUS REVISED: 100%

Syllabus Revision

Faculty: Computer Science **Board: CS with Data Analytics**
Programme: PG **Semester: II**
Course Code/ Name: 26DAP2DA - Core : Information and Network Security

Unit	Existing	Changes
1	**Information Security** : Introduction - Concepts – Components of Information Systems – Approaches to Information Security Implementation – System Development Life Cycle – Security Systems Development Life Cycle – Security Professionals and Organization - Needs of Security: Business Needs – Threats – Attacks – Secure Software Development.	
2	**Security Planning and Technology** :Information Security Planning and Governance – Information Security Policy, Standards and Practices – ~~Information Security Blueprint~~ - Continuity Strategies - Security Technology: Access Control – Firewalls – ~~Protecting Remote Connections~~ – Intrusion, Detection and Prevention Systems – ~~Honeypots, Honeynets and Padded Cell System - Scanning and Analysis Tools~~.	Introduction to Web Application Security – OWASP Top 10 Web Application Security Risks -– SQL Injection and Prevention Techniques - Cross-Site Scripting (XSS) – Client-Side Attacks and Defense Mechanisms
3	**Cryptography :** OSI Security Architecture – Security Services – Classical Encryption Techniques: Symmetric Cipher Model – Substitution Techniques – Transposition Techniques – Rotor Machines - Steganography –Block Cipher and Data Encryption Standards–Advanced Encryption Standard: AES Structure – AES Transformation Functions- Rivest Shamir Adleman (RSA) algorithm.	
4	**Network Security**: Network Access control – Extensible Authentication Protocol – Cloud Computing – Cloud Security risks and counter measures – Data protection in the cloud – Cloud security as a service Addressing cloud computing security concerns – Transport Level Security: Web security Considerations Hyper Text Transfer Protocol Secure (HTTPS) – Secure Shell.	
5	**Internet Security :** Introduction - Internet Mail Architecture – Email Threats and comprehensive email security - S/MIME– Pretty Good Privacy –Domain Name System (DNS) Based Authentication of Named Entities – Sender Policy - Framework – IP Security: Overview –Policy –Encapsulating security payload – Combining Security Associations – Internet key Exchange- Case Study: Phishing	

PERCENTAGE OF SYLLABUS REVISED: 10%

Syllabus Revision

Faculty: Computer Science **Board: CS with Data Analytics**
Programme: UG **Semester: VI**
Course Code/ Name: 24DAU6CA - CORE : Next Generation Databases

Unit	Existing	Changes
1	**Introduction :** Database revolutions: First, second and third generation - Big Data Revolution - Scaling web 2.0 : Sharding, CAP Theorem - Databases of Future: Consistent Models, Schema, Database Languages, Storage, Data Format: JSON, BSON - Convergent Databases – Disruptive Database Technologies - NoSQL databases- NoSQL APIs.	
2	**Document and Graph Databases :** Introduction to Document databases - XML and XML Databases : XML Tools and Standards, XML Databases, XML support in relational systems - JSON Document Databases: JSON and Ajax - JSON Databases-Data Models in Document Databases- MemBase and CouchBase -Graph Databases: Introduction - RDBMS patterns for Graphs -Property Graphs and Neo4j - Gremlin - Graph Database Internals - Graph Compute Engines	
3	**Column, Key Value and Vector Databases :** Introduction – Data Warehousing Schemas- ~~The Columnar Alternative~~ Column Database Architectures- In-Memory Databases - Distributed Database Patterns : Distributed Relational Databases- Non-Relational Distributed Databases ~~Cassandra - HBase- Amazon Dynamo~~	Introduction to Vector Databases – Need for Vector Databases - Vector Embeddings – ChromaDB: Collections and Querying Collections – Similarity Search - Applications of Vector Databases in RAG
4	**MongoDB :** Introduction to MongoDB- Need for MongoDB - MongoDB Vs Relational Database Management Systems – MongoDB Sharding and Replication - Data Types – MongoDB Query Language - Getting Data into MongoDB – Database Operations: Create – Update – Read – Delete – Querying	
5	**Advanced MongoDB :** Indexing - Aggregation – Introduction to Map-Reduce Programming: Mapper - Reducer- Combiner – Partitioner - Searching – Sorting – Compression – Sharding – Comparing Relational databases with NoSQL stores	

PERCENTAGE OF SYLLABUS REVISED: 10%

Syllabus Revision

Faculty: Computer Science **Board: CS with Data Analytics**

Programme: UG **Semester: VI**

Course Code/ Name: 24DAU6DA - DSE II : Principles of Internet of Things

Unit	Existing	Changes
1	**Introduction :** Introduction of IoT -Genesis of IoT - IoT and Digitization - IoT Impact - Convergence of IT and OT - IoT Challenges - IoT Network Architecture and Design - Scale - Security - Constrained Devices and Networks - Data - Legacy Device Support	
2	**Architectures :** IoT Architectures: Machine to Machine (M2M) – IoT Standardized Architecture - IoT World Forum (IoTWF) Standardized Architecture - Core IoT Functional Stack – IoT Network management Sub layer - IoT Data Management and Functional Stack - Fog computing - Edge Computing	
3	**Smart Objects in IoT :** Sensors - Actuators - Smart Objects: Definition - ~~Trends in Smart Objects~~ - Sensor Network: Wireless Sensor Networks. Connecting smart objects: Communications Criteria - Range - ~~Frequency~~ - Power Consumption - Topology – Constrained Devices - Constrained Node Networks - Data rate, Throughput, Latency	IoT Communication Protocols: MQTT – MQTT-SN
4	**Data Analytics for IoT and Security :** Introduction: Structured Versus Unstructured Data - Data in Motion Versus Data at Rest - IoT Data Analytics - IoT Data Analytics Challenges - Security: Security Frameworks for IoT - Privacy in IoT networks - IoT Characteristics and reliability Addressing reliability	Case Study on IoT-Based Flood Monitoring: Data Analytics, Security and Reliability.
5	**Applications :** Introduction: Sensors - The Gateway: Hardware - Software - Internet of Vehicles (IoV): Basics of IoV - Characteristics and Challenges - Enabling Technologies - Cloud Based Smart facilities and Management - Architecture for smart facility management - Domain Specific IoTs – Home, City, Environment, Energy, Retail, Logistics, Agriculture, Industry, health and Lifestyle	Case Study on IoT-Based Precision Irrigation

PERCENTAGE OF SYLLABUS REVISED: 10%

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 with 'A++' Grade (3rd Cycle- CGPA 3.64)
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Faculty of Computer Science
Department of Computer Science with Data Analytics
15th Board of Studies Meeting

Date: 28.10.2026 Time: 10.00A.M(Online)

S.No.	Name and Designation of the Member	Position	Attendance Status
1.	Dr. V. Pream Sudha HoD Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Chairman	Present
2.	Dr. K. Manikandan Associate Professor Dept of Computer Science PSG College of Arts and Science Coimbatore Email : prof.k.manikandan@gmail.com Mobile No : 9443179433	Member (Subject Expert) Nominated by Vice Chancellor	Present
3.	Dr. J.Chandra Professor Department of Computer Science Christ University, Bengaluru Email : chandra.j@christuiversity.in Mobile No :9886306307	Member (Subject Expert) Nominated by Academic Council	Present
4.	Dr.Kumutha.V Assistant Professor, Department of Computer Science Avinashilingam University Email : kumutha_cs@avinuty.ac.in Mobile No: 9843289697	Member (Subject Expert) Nominated by Academic Council	Present
5.	Mr.NallaperumalThanthondri Director-Product Customization Cantier Systems Coimbatore Email : nalla@cantier.com Mobile No: 9894241104	Member (Industrial Expert)	Present
6.	Mr.SantoshKumar.S Associate Data Engineer Cloud Destination Coimbatore Email : santhosh.sadaiyappan@gmail.com Mobile No : 9751718120	Alumni	Present
7.	Dr. N. Kuppuchamy D. HoD Department of Tamil Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (Tamil)	Present

8.	Dr.A.HazelVerbina HoD Department of English Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (English)	Present
9.	Dr.S.Gokilamani HoD i/c Department of Mathematics Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (Mathematics)	Present
10.	Dr.S.Arunpriya HoD i/c Department of Commerce Dr. N.G.P. Arts and Science College, Coimbatore	Co-opted Member (Commerce)	Present
11.	Bharath P (24UGCDA00031) III B.Sc. CSDA A	Student Representative	Present
12.	Dr. A C Sountharraj Department of CS with Data Analytics Dr. N.G.P. Arts and Science College, Coimbatore	Member	Present
13.	Dr.R. Suganthi Department of CS with Data Analytics Dr. N.G.P. Arts and Science College, Coimbatore	Member	Present
14.	Dr.V.Sangeetha Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	Present
15.	Ms. C. Karpagam Department of CS with Data Analytics Dr. N.G.P. Arts and Science College, Coimbatore	Member	Present
16.	Dr.V.Santhana Lakshmi Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	Present
17.	Dr.R.Ranjani Department of CS with Data Analytics Dr. N.G.P. Arts and Science College, Coimbatore	Member	Present
18.	Ms.S.Govardhini Department of CS with Data Analytics Dr. N.G.P. Arts and Science College, Coimbatore	Member	Present
19.	Mr.C.Anbarasan Department of CS with Data Analytics	Member	Present

	Dr. N.G.P. Arts and Science College, Coimbatore		
20.	Dr. A. Roselin Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	Present
21.	Ms.M.Anitha Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	Absent
22.	Ms.S.Shri Tharani Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	Present
23.	Ms.M.Preethi Department of CS with Data Analytics Dr. N.G.P. Arts and Science College Coimbatore	Member	Present

Date :28.10.26

(Dr.V.Pream Sudha)

BoS Chairman/HoD
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