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)
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BoS

18th

Department of Computer Applications

Board of Studies Meeting

The minutes of the 18th meeting of Board of Studies held on 05.11.2024 at 10.00 a.m. at Seminar Hall II.

Members Present:

S.No.	Name	Category
1	Dr.S.PooranaSenthilkumar	Chairman
2	Dr.T.Amudha , Professor, Department of Computer Applications, Bharathiar University, Coimbatore.	VC Nominee
3	Dr.B.Kalpana Professor & Head, Department of Computer Science, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore.	Subject Expert
4	Mr.Vignesh Kumar, Senior Software Engineer, Bosch Global Software Technologies, Coimbatore.	Industrial Expert
5	Dr.C.Kumuthini	Member
6	Mrs.K.Gomathy	Member
7	Mr.P.Dinesh Kumar	Member
8	Dr B.Ramya	Member
9	Dr K.Kavitha	Member
10	MrV.Yuvaraj	Member
11	Dr. P.S.Vijayalakshmi	Member
12	Dr.R.Sowrirajan	Co-opted Member
13	Ms. N. Sreejaa - III BCA B	Student Representative
14	Mr. R. Sathya Pramodh - III BCA A	Student Representative

The HoD and Chairman of the Department of Computer Applications welcomed and introduced all the members and appreciated them for their continuous support and 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. Mr. S. Eswaran - Alumni

2. Mrs. D. Priyadharshini - Member

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

Item 18.1: *To review and approve the minutes of the previous meeting held on* **02-04-2024.** The chairman of the board presented the minutes of the previous meeting held on **02-04-2024** 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 02-04-2024.

Item 18.2: *To consider and approve the scheme, regulation and syllabi for II semester for the students admitted during the academic year 2024-25.*

The chairman presented the detailed Scheme and Regulation for the students admitted from the academic year 2024-25 and syllabi for the II semester. The members deliberated in detail and approved the syllabus.

After discussion the following resolution was passed.

Resolution:

Resolved to approve the syllabus of 2023-24 batch for the students admitted during the academic year 2024-25.

Item 18.3: *To consider and approve the syllabi for IV semester for the students admitted during the academic year 2023-24.*

The Chairman presented the detailed syllabi for the IV semester for the students admitted during the academic year 2023-2024. The members deliberated in detail and unanimously decided to adopt the syllabi with the following changes.

Changes Made :

Course Code	Course	Change & Reason
234CA1A4CA	CORE: Cyber Security	Mr. Vignesh Kumar suggested to enrich Unit-III by adding "Information security concepts ".
234CA1A4EP	CORE PRACTICAL: Python Programming	Dr. T. Amutha recommended to add "UI based packages" in practical component to align with current industry requirements.
234CA1A4SP	SEC PRACTICAL: Big Data Technologies	Dr. T. Amutha suggested to incorporate MapReduce, data import and export in Mongo DB.

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

Resolution:

Resolved to approve the syllabus with the modifications adopted for the students admitted from the academic year 2023-24.

Item 18.4 : *To consider and approve the syllabi for VI semester for the students admitted during the academic year 2022-23.*

The Chairman presented the detailed syllabi for the VI semester for the students admitted from the academic year 2022-23. The members deliberated in detail and unanimously decided to adopt the syllabi.

New Courses Introduced:

Course Code	Course	Change & Reason
224CA1A6CA & 224CA1A6CP	CORE: Open Source Technologies & PRACTICAL: Open Source Technologies	To equip with the essential knowledge and skills to apply open-source tools and frameworks in building web applications.
224CA1A6DA	DSE: Computer Vision	Impart skills required to interpret and analyze visual data to adapt to the emerging needs of on industry.
224CA1A6DB	DSE: Machine Learning and Applications	To provide a comprehensive understanding of machine learning algorithms and techniques, along with industry-driven applications. The board suggested to change the course title to "Machine Learning and Applications".

224CA1A6DD	DSE: Augmented Reality and Virtual Reality	To provide a comprehensive understanding of interactive Reality technologies, facilitating the design and development of immersive applications that integrate digital and physical environments.
224CA1A6DE	DSE: Deep Learning	To impart deep learning concepts, neural network architectures and application of the techniques to tackle complex challenges.
224CA1A6DF	DSE: Fundamentals of Blockchain and Applications	To provide a comprehensive understanding of blockchain technology, emphasizing secure, transparent, and decentralized systems for modern IT-enabled business models.

Courses Removed:

Course Code	Course	Change & Reason
194CA1A6CA & 194CA1A6CP	CORE: Web Applications using PHP & PRACTICAL: Web Applications using PHP	Advanced AngularJS has been added to enhance knowledge in web applications, Programming and professional skills.
194CA1A5DB	Ad-hoc and Sensor Networks	The Internet of Things course has been enriched with the basics of Ad-hoc and sensor networks in Semester V.
194CA1A5DC	Semantic Web	Scalable applications, data handling, interoperability, security, and accessible data-driven applications have been incorporated into cloud technologies in Semester VI.
194CA1A6DB	Digital Marketing	Augmented Reality (AR) and Virtual Reality (VR) are introduced in place of Digital Marketing to provide immersive technology skills that cater to the growing demand for interactive, next-generation experiences in digital and physical environments.

194CA1A6DC	Object Oriented Analysis and Design	The core concepts of the project development process are relevant to the Software Engineering course in Semester V.
194CA1A6DD	Mobile Computing	Cloud and web technologies incorporate more mobile computing functions in demand of industry.

After discussion the following resolution was passed.

Resolution:

      Resolved to approve the syllabus with the modifications adopted for the students admitted from the academic year 2022-23.

Item 18.5: *To consider and approve the courses offered by NPTEL that are equivalent to courses offered in the curriculum.*

      The board discussed the courses offered by NPTEL that are equivalent to the courses offered in our curriculum in the III semester for the students admitted for the academic year 2024-25 and V semester for the students admitted for the academic year 2023-24.

Resolution:

      Resolved to approve the courses that are equivalent to courses offered by NPTEL in the curriculum.

Item 18.6: *To consider and approve the self-study course offered in III semester for the students admitted in UG from academic year 2024-25 onwards.*

      The board discussed and approve the existing self-study courses offered in III semester for the students admitted in UG from academic year 2024-25 onwards.

Resolution:

      Resolved to approve the self-study course offered in III semester for the students admitted in UG from academic year 2024-25 onwards.

Item 18.7: *To approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester during the academic year 2024-2025.*

      The Chairman presented the panel of examiners for question paper setting, question paper scrutiny and conduct of practical and theory of examination are submitted to CoE for exam related work.

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 2024-2025.

Item 18.8: To consider and approve any other item brought forward by the Chairman and the members of the board.

The board suggested to incorporate laboratory components for elective courses in future.

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. S. Poorana Senthilkumar, Chairman- Department of Computer Applications.

Date: 05-11-2024

Chairman

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

Syllabus Revision

Faculty: Computer Science   **Board: Computer Applications**

Course Code / Name: 234CA1A4CA / CYBER SECURITY

Semester: IV

S.No.	Existing	Changes
1	Cybercrime – Who are Cybercriminals – Classification of Cybercrimes: E-Mail Spoofing , Spamming, Cyberdefamation, Internet Time Theft, Salami Attack, Data Diddling, Forgery, Web Jacking, Newsgroup Spam, Industrial Spying, Hacking, Online Frauds, Pornographic Offenses, Soft Piracy, Computer Sabotage, E-Mail Bombing, Computer Network Intrusions, Password Sniffing, Credit Card Frauds, Identity Thefts.	Added Information Security: Principles, Supporting principles, Policies - Cyber Security: Overview, Difference between Information Security and Cyber Security
2	Categories of Cybercrime – How Criminals Plan the Attack?: Reconnaissance, Passive Attacks, Active Attacks, Scanning and Scrutinizing Gathered Information, Attack(Gaining and Maintaining the System Access) – Social Engineering: Classification of Social Engineering – Cyberstalking: Types of Stalkers, How Stalking works? - Cybercafe and Cybercrime.	Moved Types of Attacks from Unit -2 to Unit – 3. Added Classification of Cyber Crime, Global Perspective on Cyber Crimes.
3	Proliferation of Mobile and Wireless Devices – Credit card Frauds in Mobile and Wireless Computing Era- Security Challenges Posed by Mobile Devices - Registry Settings for Mobile Devices – Authentication Service Security – Attacks on Mobile Phones – Laptops: Physical Security Counter Measures.	Moved the entire Unit – 3 to Unit - 4

4	Proxy Servers and Anonymizers – Phishing – Password Cracking – Keyloggers and Spywares – Virus and Worms – Trojan Horses and Backdoors – Steganography – DoS and DDoS Attacks – SQL Injection – Buffer Overflow – Attacks on Wireless Networks.	Moved the entire Unit – 4 to Unit – 3. Added Trends in Mobility Wireless Era - Security implications for Organizations - Organizational Measures for Handling Mobile Phones
5	The Indian IT Act – Challenges to Indian Law and Cybercrime Scenario in India – Digital Signatures and the Indian IT Act – Amendments to the Indian IT Act – Cybercrime and Punishment. ~~Case studies: E-mail spoofing Instances, Indian case of Online Gambling.~~	Added Cyber Law: Contract Aspects, Security Aspects, Intellectual Property Aspect.

PERCENTAGE OF SYLLABUS REVISED: 30 %

COURSE FOCUSES ON:

☑ Skill Development	☐ Entrepreneurial Development
☑ Employability	☐ Innovations
☐ Intellectual Property Rights	☐ Gender Sensitization
☑ Social Awareness/ Environment	☑ Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science   **Board:** Computer Applications

Course Code / Name: 234CA1A4EP – PYTHON PROGRAMMING

Semester: IV

S.No.	Existing	Changes
1	1. Programs to demonstrate Operators. 2. Programs to evaluate Expressions. 3. Programs to illustrate Decision Making. 4. Programs using Repetitive Statements.	
2	5. Programs to illustrate User defined functions. 6. Programs to demonstrate Lambda function. 7. Programs to demonstrate Recursive functions.	
3	8. Programs to demonstrate String Operations. 9. Programs to implement Lists. 10. Programs to implement Tuples. 11. Programs to implement Sets. 12. Programs to implement Dictionaries.	
4	13. Programs for basic operations on Ndarrays. 14. Programs to implement Structured Arrays.	
5	15. Programs for Sorting and Ranking. 16. Programs to read CSV files. 17. Programs to read and write HTML Files.	Added 1.Design the GUI application for the registration form. 2. Design and create menus using GUI.

PERCENTAGE OF SYLLABUS REVISED: 12%

COURSE FOCUSES ON:

✓ Skill Development	☐ Entrepreneurial Development
✓ Employability	☐ Innovations
☐ Intellectual Property Rights	☐ Gender Sensitization
☐ Social Awareness/ Environment	☐ Constitutional Rights/ Human Values/ Ethics

<center>**Syllabus Revision**</center>

Faculty: Computer Science   **Board: Computer Applications**

Course Code / Name: 234CA1A4SP - BIG DATA TECHNOLOGIES

Semester: IV

S.No.	Existing	Changes
1	Cassandra: 1. Design Data Models in Cassandra. 2. Execute Table Creation in Cassandra. 3. Perform Time to Live (TtL) in Cassandra. 4. Implement Import and Export to. Csv in Cassandra. 5. Create Counter in Cassandra.	MongoDB 1. MongoDB program to create a views and collection. 2. Program to perform basic CRUD operations in MongoDB. 3. MongoDB program to manipulate arrays in documents. 4. MongoDB program to implement MapReduce for data processing and analysis. 5. MongoDB Program to Import and Export Data to and from a .csv file.
2	Hadoop: 1.Start the Hadoop. 2.Check whether all the Hadoop daemons are running. 3.Check the number of files in the root directory. 4.Check the size of space in the root directory. 5.Create a new named directory 6.Create a new text file in the directory. 7.Move the text file from HDFS to local file system. 8.Remove the directory in HDFS.	Hadoop: 1. Configure the Hadoop HDFS commands used for managing files and directories in Hadoop

3	PIG: 1.~~Pig program to perform Word Count Operation.~~	PIG: 1. Pig script to perform a text analysis operation.
4	Hive: 1.~~Creating tables in Hive (Internal & External Tables).~~ 2.~~Hive commands to create an internal table.~~	Hive: 1. Program to create tables in Hive.
5	HBASE: 1. Implement Data model of HBase. 2. Perform basic CRUD operations in HBase. 3. ~~Perform Bulk Loading data into HBase~~	HBASE: 1. Program to implement Data model of HBase. 2. Perform CRUD operations in HBase.
6	R Programming: 1.~~Data Types in R~~ 2.~~Built in Functions in R~~ 3.~~Vector Manipulation in R~~ 4.~~Data Frames in R~~ 5.~~Mathematical Operations Using Built-in Function~~ 6.~~Matrix Using R Script~~ 7.~~Data Visualization and Plotting Techniques~~	Removed R Programming from the Syllabus

PERCENTAGE OF SYLLABUS REVISED: 43 %

COURSE FOCUSES ON:

✓	Skill Development	☐	Entrepreneurial Development
✓	Employability	☐	Innovations
☐	Intellectual Property Rights	☐	Gender Sensitization
☐	Social Awareness/ Environment	☐	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science

Board: Computer Applications

Course Code / Name: 224CA1A6CA – OPEN SOURCE TECHNOLOGIES

Semester: VI

Unit	Course Content
I	Development Environment – PHP Page – Mixing HTML and PHP - Variables: Storing Data. Strings and Arrays: String Functions - Converting to and from Strings – Formatting Text Strings – Array: Building and Modifying, Deleting Elements – Handling Arrays with Loops –Array Functions – Converting Between Strings and Arrays Using Implode and Explode - Extracting Data from Arrays – Sorting Arrays.
II	Functions in PHP – Passing Data and Arrays to Functions – Passing by Reference – Using Default Arguments – Passing Variable Numbers of Arguments - Returning Data from Functions – Returning arrays – Returning List – Returning References. Reading Data in Web Pages: Web Pages to Communicate with PHP – Handling: Text Fields, Text Areas, Checkboxes, Radio Buttons, List Boxes, Password Controls, Hidden Controls, Image Maps, File Uploads, Buttons.
III	Handling Form Data with Custom Arrays – Performing Data Validation - Requiring Data – Requiring Numbers – Requiring Text – Persisting User Data – Client-Slide Data Validation. Working with Databases: Creating MySQL Database – Creating Table –Inserting records. Accessing the Database in PHP – Updating Databases – Inserting data into Database – Deleting Records – Creating New Tables – Creating New Database – Sorting Data.
IV	Cookies: Setting, Reading, Expiration, Delete – Sending E-mail – Advanced E-mail Attachments – Sessions: Storing Data, Hit Counter. Drawing Images on the Server: Creating Image – Displaying Images in HTML Pages – Drawing: Lines, Rectangles, Ellipses, Arcs.
V	Angular JS: Framework - First AngularJS Application - MVC: Design Patterns - Model view controller - Filters and Modules - Directives: Basics of Directives- Using Directives - Built-in Directives - Custom Directives - Services and Server Communication.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

☑	Skill Development	☑	Entrepreneurial Development
☑	Employability	☑	Innovations
☐	Intellectual Property Rights	☐	Gender Sensitization
☐	Social Awareness/ Environment	☐	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science　　　　　　　　**Board: Computer Applications**

Course Code / Name: 224CA1A6CP - OPEN SOURCE TECHNOLOGIES

Semester: VI

P. No	Lists of Experiments
1	Handling Strings in PHP.
2	Implementing and Manipulating Arrays in PHP.
3	Defining and Implementing Functions in PHP.
4	Generic controls implementation in PHP.
5	Advanced Controls implementation in PHP.
6	Client-Slide Data Validation through PHP.
7	Accessing the Database through PHP.
8	Sessions and Cookies implementation in PHP.
9	E-mail functions utilization in PHP.
10	Drawing Shapes in PHP with GD Library.
11	Implementing AngularJS with UI Controls.
12	Working with AngularJS Directives

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUS ON:

☑	Skill Development	☑	Entrepreneurial Development
☑	Employability	☑	Innovations
☐	Intellectual Property Rights	☐	Gender Sensitization
☐	Social Awareness/ Environment	☐	Constitutional Rights/ Human Values/ Ethics

Faculty: Computer Science　　　　　　　**Board: Computer Applications**

Course Code / Name: 224CA1A6DA – COMPUTER VISION

Semester: VI

Unit	Course Content
I	Computer Vision – History- Geometric primitives and transformation:2D transformations, 3D transformations, 3D rotations, 3D to 2D projections, Lens Distortions - Photometric image formation: Lighting, Reflectance and shading, Optics - Digital Camera: Sampling and Aliasing-Color-Compression.
II	Point operators : Pixel Transforms, Color Transforms, Compositing and matting, Histogram equalization - Linear filtering: Separable filtering, Band-pass and steerable filters - Non-linear filtering- Bilateral filtering- Binary image processing – Fourier transforms: Two-dimensional Fourier transforms - Geometric transformations.
III	Scattered data interpolation: Radial basis functions, Overfitting and underfitting, Robust data fitting - Variational methods and regularization: Discrete energy minimization, Total variation, Bilateral solver.
IV	Instance recognition- Image classification: Feature-based methods, Deep networks, Face recognition - Object detection: Face detection, Pedestrian detection - Semantic segmentation: Instance segmentation, Panoptic segmentation, Pose estimation-Video understanding.
V	Points and patches: Feature detectors, Feature descriptors, Feature matching, Large-scale matching and retrieval, Feature tracking - Edges and contours: Edge detection, Contour detection - Contour Tracking: Snakes and scissors, Level Sets - Lines and vanishing points: Hough transforms- Segmentation: Graph-based segmentation.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

☑	Skill Development	☐	Entrepreneurial Development
☑	Employability	☑	Innovations
☐	Intellectual Property Rights	☐	Gender Sensitization
☐	Social Awareness/ Environment	☐	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science

Board: Computer Applications

Course Code / Name: 224CA1A6DB – MACHINE LEARNING AND APPLICATIONS

Semester: VI

Unit	Course Content
I	Human Learning - Types of Human Learning- Machine Learning: Types of Machine Learning - Applications of Machine Learning - Languages and Tools in Machine Learning - Issues in Machine Learning.
II	Supervised Learning - Example of Supervised Learning - Classification Model - Classification Learning steps - Common Classification Algorithms: k-Nearest Neighbour, Decision Tree, Random Forest Model, Support Vector Machines - Regression - Common Regression Algorithms.
III	Unsupervised Learning - Unsupervised versus Supervised Learning- Application of Unsupervised Learning - Clustering - Types of Clustering – Partitioning method – K-medoids – Hierarchical Clustering.
IV	Introduction - Representation Learning - Active Learning - Instance-Based Learning - Associate Rule Learning Algorithm - Ensemble Learning Algorithm - Regularization Algorithm.
V	Image Recognition - Speech Recognition - Traffic Prediction Product Recommendations - Self-driving cars - Email Spam and Malware Filtering – Virtual Personal Assistant - Stock Market Trading - Automatic Language Translation.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

☑	Skill Development	☑	Entrepreneurial Development
☑	Employability	☑	Innovations
☐	Intellectual Property Rights	☐	Gender Sensitization
☐	Social Awareness/ Environment	☐	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science   **Board: Computer Applications**

Course Code / Name:224CA1A6DD – AUGMENTED REALITY AND VIRTUAL REALITY

Semester: VI

Unit	Course Content
I	Introduction to Augmented reality – Computer Vision for AR- Marker Tracking - Interaction -Output Modalities- Input modalities – Modeling and Annotation.
II	Introduction to Virtual Reality - Definition-Three I's of Virtual Reality- Classic Components of VR System: Input devices: Mechanical Tracker, Magnetic Tracker, Ultrasonic Tracker, Optical Tracker, Trackballs. Output Devices: Human Visual Display, Large Volume Display.
III	Modeling: Geometric Modeling - Kinematic Modeling: Transformation Invariants - Object Hierarchies - Viewing 3D World – Physical Modeling -Behavioral Modeling.
IV	Toolkits and Scene Graphs- World Tool Kit: Model Geometry and Appearance, WTK Scene Graph - JAVA 3D : Model Geometry and Appearance, Java 3D and scene Graph, Sensors and Networking.
V	Education, Arts and Entertainment - Military VR Applications - VR Application in Manufacturing - Plant Design and Construction.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

☑	Skill Development	☑	Entrepreneurial Development
☑	Employability	☑	Innovations
☐	Intellectual Property Rights	☐	Gender Sensitization
☐	Social Awareness/ Environment	☐	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty : Computer Science

Board: Computer Applications

Course Code / Name : 224CA1A6DE – DEEP LEARNING   Semester: VI

Unit	Course Content
I	Artificial Neural Networks: Building Intelligent Machines- Limits of Traditional Computer Programs-Neuron-Feed-Forward Neural Networks- Linear Neurons and Limitations – Sigmoid – Tanh - and ReLU Neurons - Softmax Output Layers - Training Feed-Forward Neural Networks-Gradient Descent-Delta Rule and Learning Rates- Backpropagation Algorithm-Stochastic and Minibatch Gradient Descent - Test Sets - Validation Sets and Overfitting.
II	Neurons in Human Vision- Feature Selection- Filters and Feature Maps - Convolution Layer- Max Pooling- Architecture -Accelerating Training with Batch Normalization- Building a Convolutional Network using TensorFlow- Visualizing Learning in Convolutional Networks.
III	Autoencoders Architecture - Implementing an Autoencoder in TensorFlow–Denoising-Sparsity in Autoencoders. Models for Sequence Analysis: Recurrent Neural Networks-Vanishing Gradients- Long Short-Term Memory Units- TensorFlow Primitives for RNN Models-Augmenting Recurrent Networks with Attention.
IV	Performance Metrics- Selecting Hyperparameters. Automatic Hyperparameter Optimization Algorithms: Grid Search - Random Search - Model-Based Hyperparameter Optimization - Debugging Strategies.
V	Large-Scale Deep Learning: GPU Implementations - Specialized Hardware Implementations of Deep Networks. Computer Vision: Preprocessing. Speech Recognition - Natural Language Processing: Neural Language Models - Exploration Versus Exploitation.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

✓	Skill Development	✓	Entrepreneurial Development
✓	Employability	✓	Innovations
	Intellectual Property Rights		Gender Sensitization
	Social Awareness/ Environment		Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Computer Science   **Board:** Computer Applications

Course Code/Name: 224CA1A6DF–FUNDAMENTALS OF BLOCKCHAIN AND APPLICATIONS

Semester: VI

Unit	Course Content
I	Introduction – History – Fundamentals - Characteristics - Consensus in Trust-Building – Public, Private and Hybrid Blockchains – Distributed Ledger Technology – DLT Decentralized Applications and Databases. Components: Introduction – Ethereum – Working of Ethereum.
II	Architecture of Blockchain – Transactions – Chaining Blocks. Decentralized System: Distributed Decentralized Databases – Decentralized Enterprise – Decentralization – Disintermediation - Enterprise Regulation. Cryptography: Introduction – Primitives – Symmetric – Asymmetric.
III	Hashing: Characteristics, Security Requirements, Attacks – Distributed Hash Tables: Consistent Hashing, Rendezvous Hashing, Comparison of Consistent and Rendezvous Hashing - Consensus: Approach – Algorithms: Proof-of-Work, Proof-of-Stake, Proof-of-Activity, Proof-of-Elapsed-Time, Proof-of-Burn, Proof-of-Proof, Proof-of-Capacity.
IV	Introduction – Absolute and Immutable – Contractual Confidentiality -Law Implementation and Settlement - Characteristics - Internet of Things – Smart Grid – Proof of Origin - Supply chain management – Medical Sciences – Finance – Media and Entertainment - Public Services – Legal Services.
V	Bitcoins: Introduction – Working of Bitcoin - Blockchain Vertical Solutions and Use Cases: Blockchain in Insurance, Healthcare, Smart Assets, Manufacturing. Blockchain and Allied Technologies: Cloud computing, Artificial Intelligence, Internet of Things.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

☑	Skill Development	☑	Entrepreneurial Development
☑	Employability	☑	Innovations
☐	Intellectual Property Rights	☐	Gender Sensitization
☐	Social Awareness/ Environment	☐	Constitutional Rights/ Human Values/ Ethics

ATTENDANCE OF THE EIGHTEENTH BOARD OF STUDIES MEETING
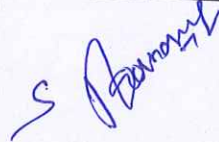
Faculty: Computer Science
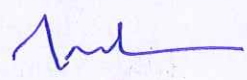
Date :05.11.2024

Time: 10.00 a.m.

Board : Computer Applications

Venue: Seminar Hall II

The following members were present for the meeting

S.No	Name	Designation	Signature
1.	**Dr. S.PooranaSenthilkumar** Assistant Professor Department of Computer Applications Dr.N.G.P. Arts and Science College.	Chairman	
2.	**Dr.T.Amudha** Professor Department of Computer Applications Bharathiar University Coimbatore-641046.	VC Nominee	
3.	**Dr.B.Kalpana,** Professor,Department of Computer Science School of Physical Sciences and Computational Sciences Avinashilingam Institute for Home Science and Higher Education for Women Coimbatore- 641043.	Subject Expert	
4.	**Mr.Vignesh Kumar** Senior Software Engineer Bosch Global Software Technologies Coimbatore.	Industry Expert	
5.	**Mr.S.Eswaran** Implementation Consultant in Aosta Control-m Scheduler and Administration Coimbatore.	Alumni Expert	ABSENT

6.	**Dr.C.Kumuthini** Professor Department of Computer Applications Dr.N.G.P. Arts and Science College.	Internal Member	
7.	**Mrs.K. Gomathy** Assistant Professor(SG) Department of Computer Applications Dr.N.G.P. Arts and Science College.	Internal Member	
8.	**Mr P.Dinesh Kumar** Assistant Professor(SG) Department of Computer Applications Dr.N.G.P. Arts and Science College.	Internal Member	
9.	**Dr. B.Ramya** Assistant Professor Department of Computer Applications Dr.N.G.P. Arts and Science College.	Internal Member	
10.	**Dr. K.Kavitha** Assistant Professor Department of Computer Applications Dr.N.G.P. Arts and Science College.	Internal Member	
11.	**Mr. V.Yuvaraj** Assistant Professor Department of Computer Applications Dr.N.G.P. Arts and Science College.	Internal Member	
12.	**Dr. P.S.Vijayalakshmi** Assistant Professor Department of Computer Applications Dr.N.G.P. Arts and Science College.	Internal Member	
13.	**Mrs. D.Priyadharshini** Assistant Professor Department of Computer Applications Dr.N.G.P. Arts and Science College.	Internal Member	ABSENT
14.	**Dr.R. Sowrirajan** Professor & Head Department of Mathematics Dr.N.G.P. Arts and Science College	Co-opted Member	

15.	Ms. Sreejaa N III BCA B Department of Computer Applications Dr.N.G.P. Arts and Science College.	Student Representative	
16.	Mr. Sathya Pramodh R III BCA A Department of Computer Applications Dr.N.G.P. Arts and Science College.	Student Representative	

[Dr. S. poorana senthilkumar]

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