



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

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

(Approved by Government of Tamil Nadu & Accredited by NAAC with A++ Grade (3rd Cycle - 3.64 CGPA)

Dr. N.G.P. – Kalapatti Road, Coimbatore – 641 048, Tamil Nadu, India

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BoS

2nd

Board of Studies Meeting

Department of Computer Science with Cyber Security

The minutes of the 2nd meeting of Board of Studies held on 09.11.2024 at 09.30 a.m. in AV Room.

Members Present:

S. No.	Name	Category
1.	Dr. V. Shobana, Professor and Head	Chairman
2.	Dr. K. Preetha, Assistant Professor & Head, Department of Computer Science with Cyber Security, Vellalar College for Women, Erode.	VC Nominee
3.	Dr. Ambili. P. S. Associate Professor School of Computer Science and Applications Reva University, Bengaluru.	Subject Expert
4.	Mr. Ajith. M, Senior Project Engineer Information Security Services C-DAC Hyderabad.	Industrial Expert
5.	Dr. N. Kuppuchamy	Co-opted Member
6.	Dr. A. Hazel Verbina	Co-opted Member
7.	Dr. R. Sowrirajan	Co-opted Member
8.	Ms. A. Vinitha	Member
9.	Dr. V. Malathi	Member
10.	Ms. Mirulashini Thangavelu II B.Sc. CS CY	Student Representative

The HoD and Chairman of the Department of Computer Science with Cyber Security 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 member to attend the meeting and requested to grant leave of absence.

1. Dr. Shina Sheen Professor and Head, PSG College of Technology, Coimbatore - Subject Expert

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

Item 2.1: *To review and approve the minutes of the previous meeting held on 04.04.2024.*

The chairman of the Board presented the minutes of the previous meeting held on **04.04.2024** 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 04.04.2024.

Item 2.2: *To consider and approve the syllabi for II semester for the students admitted during the academic year 2024-25.*

The chairman of the board presented the detailed scheme and syllabus for the II semester for the students admitted from the academic year 2024-25. The details of changes made also presented as follows.

Changes Made:

Course Code	Course Name	Reason
24CYU2CP	Data Structures using C++	Mr. M. Ajith suggested to add security related programs to address the fundamental programming errors which result in software vulnerabilities. The board members suggested to change the name as Data Structures and C++

After discussion the following resolution was passed.

Resolution:

Resolved to approve the syllabus for the II semester for the students admitted from the academic year 2024-25.

Item 2.3: *To consider and approve syllabi for IV semester for the students admitted during the academic year 2023-24.*

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

New Courses Introduced:

B.Sc. Computer Science with Cyber Security		
Course Code	Course Name	Reason
234CY1A4CA	Core: Computer Networks	To impart knowledge on concepts and technologies behind modern networking systems to understand potential vulnerabilities and defensive mechanisms. The board members suggested to change the title as Computer Networking Principles.
234CY1A4CB	Core: Principles of Cyber Security	To equip with the foundational knowledge on cyber security and how to mitigate from cyber threats. Vulnerability Assessment has been included in Unit IV as suggested by Dr. Preetha. Data Privacy Act has been introduced in Unit V as recommended by Mr. Ajith.
234CY1A4EP	Embedded Core: Java Programming	To impart programming skills in Java which is essential to build secure applications. Mr. Ajith suggested to introduce Secure Coding practices in Java
234CY1A4SP	SEC Practical II: Network Programming	To introduce skills on Network Protocol stack and to analyze different networks. Mr. Ajith suggested to introduce Nmap to identify open ports, services and detect vulnerabilities.
235FI1A4IA	IDC -IV Financial Crime Management	To impart knowledge on basic financial markets and to introduce security in the financial and banking sectors.

After discussion the following resolution was passed.

Resolution:

Resolved to approve the syllabus for the IV Semester for the students admitted from the academic year 2023-24

Item 2.4: *To consider and approve the courses offered by NPTEL that are equivalent to courses offered in the curriculum in the III and V Semesters.*

The board discussed the courses offered by NPTEL that are equivalent to the courses offered in our curriculum in the semester III 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 2.5: *To consider and approve the self-study course offered in III semester for the students admitted in UG from academic year 2024-25.*

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

Resolution:

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

Item 2.6: *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 2024-25.

Item 2.7: 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 a formal vote of thanks proposed by **Dr. V. Malathi**, Assistant Professor.

Date: 09.11.2024


(Dr. V. Shobana)
BoS Chairman / HoD
Dept. of Computer Science with Cyber Security
Dr. N.G.P. Arts and Science College
Coimbatore - 641 048.

Syllabus Revision

Faculty: Computer Science

Board: Computer Science with Cyber Security

Semester: I

Course Code/ Name: 24CYU2CP – Data Structures and C++

Existing	Changes
<ol style="list-style-type: none"> 1. Implementation of Conditional Statements and Loops 2. Implementation of Stacks and queues. 3. Apply constructors and Destructors to find the sum of digits of a number until it reduces to single digit. 4. Using arrays implement Linked List concept. 5. Create a class to store the details of an employee. Apply the concept of inheritance and calculate the different allowances (DA, HRA and PF) based on the basic pay. 6. Implement the concept of binary search and linear search 7. Demonstrate function and operator overloading. 8. Perform the three types of tree traversals using C++. 9. Apply the concept of Pure Virtual functions. 10. Implementation of graphs. 11. Demonstrate Standard Template Libraries. 12. Implementation of Sorting algorithms 	<ol style="list-style-type: none"> 1. Implementation of Conditional Statements and Loops 2. Programs to implement Stack and queue. 3. Apply constructors and destructors. 4. Implement Linked List using Arrays. 5. Programs to implement Inheritance. 6. Implement the concept of binary search and linear search 7. Demonstrate function and operator overloading. 8. Program to demonstrate the types of tree traversals. 9. Apply the concept of Pure Virtual functions. 10. Programs to demonstrate secure coding practices a. String Vulnerabilities b. Integer Vulnerabilities 11. Demonstrate Standard Template Libraries. 12. Implementation of Sorting algorithms.

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 checked="" 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 (New Course)

Faculty: Computer Science

Board: Computer Science with Cyber Security

Programme: B.Sc. Computer Science with Cyber Security

Semester: IV

Course Code/ Name: 234CY1A4CA / Computer Networking Principles

Unit	Contents
I	OSI model Data Communication: Networks – Network Types – Protocol Layering – TCP/IP Protocol Suite – Open System Interconnection Model - Application Layer Protocols: Web and HTTP – FTP – Electronic Mail in the Internet – DNS.
II	UDP and TCP Protocols Transport Layer Services - UDP: Segment Structure, Checksum–Reliable Data Transfer: Go-Back-N, Selective Repeat- TCP: Connection, Segment Structure, Flow Control, Connection Management- Principles of Congestion Control - TCP Congestion Control.
III	Routing Protocols Introduction - Virtual Circuit Networks – Datagram Networks – Router: Input, Switching, Output - Internet Protocol: Datagram Format, IPV4, ICMP, IPV6 – Routing Algorithms: Link-State, Distance – Vector - Routing in the Internet: Border Gateway Protocol (BGP).
IV	Error Detection/Correction and Transmission media Introduction – Error Detection and Correction Techniques: Parity Checks, Cyclic Redundancy Check, Checksum – Random Access Protocol: Slotted ALOHA – CSMA/CD- Link Layer Addressing and ARP- Physical Layer: Signals, Digital Transmission, Analog Transmission, Multiplexing - Transmission Media: Guided – Unguided.
V	IEEE Standards Introduction – Wireless Link and Network Characteristics - WiFi 802.11 Wireless LAN: 802.11 Architecture – 802.11 MAC Protocol – IEEE 802.11 Frame -Personal Area Networks: Bluetooth and Zigbee, Cellular Internet Access Architecture- Securing Wireless LANs.

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 checked="" type="checkbox"/>	Innovations
<input type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
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Syllabus (New Course)

Faculty: Computer Science

Board: Computer Science with Cyber Security

Programme: B.Sc. Computer Science with Cyber Security

Semester: IV

Course Code/ Name: 234CY1A4CP / Programming in Java

Unit	Contents
I	<p>Introduction Overview of Java - Java Development Environment - Structure of Java Program: Data Types, Variables and Arrays - Operators and Control Statements. 1. Practice basic Java programs. 2. Programs using arrays. 3. Program to implement control statements.</p>
II	<p>Classes, Objects, Packages and Interfaces Class Fundamentals - Objects - finalize () method - Inner Classes - super keyword – Packages: Member Access, Import packages – Interfaces: Default Interface Methods, Variables and Applying Interface. 4. Practice programs using classes. 5. Practice inner class functions and demonstrate their interaction. 6. Practice package creation, importing, and implementing an interface with default methods.</p>
III	<p>Exception Handling and Multithreaded Programming Exception Handling: Fundamentals, Types - Uncaught Exceptions - Creating own Exceptions - Multithreaded Programming: Java Thread Model, creating a Thread, creating multiple Threads - Thread Priorities - Interthread Communication, Suspending, Resuming and Stopping Threads- Synchronization. 7. Program to create threads with different priorities. 8. Practice thread communications and managing thread cooperation using wait() and notify(). 9. Practice the programs using Exception handling</p>
IV	<p>Event Handling and Swing Event Handling Mechanisms - Delegation Event Model - Event Classes - Key Event Class - Event Listener Interface - Swing: Origin of Swing - Features -Components and Containers – Packages - Simple Swing Application - Event Handling. 10. Implement event listeners for simple button clicks. 11. Demonstrate keyboard events using Listener interface. 12. Practice mouse events using Listener interfaces. 13. Practice basic Swing components and button events.</p>
V	<p>GUI and JDBC Exploring Swing- Swing menus- JDBC- Architecture - JDBC vs ODBC - Types of Drivers - Components - Interfaces and classes – Database connectivity using JDBC. 14. Practice working with Swing menus. 15. Build applications using Swing and JDBC enforcing security.</p>

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

<input checked="" type="checkbox"/>	Skill Development	<input type="checkbox"/>	Entrepreneurial Development
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Syllabus (New Course)

Faculty: Computer Science

Board: Computer Science with Cyber Security

Programme: B.Sc. Computer Science with Cyber Security

Semester: IV

Course Code/ Name: 234CY1A4CB / Principles of Cyber Security

Unit	Contents
I	Information Security and Cyber Security Introduction to Information Security: Principles, Policies – Cyber security Overview – Difference between Information Security and Cyber Security – Common threats in the market – Importance of Cyber Security – Cyber security strategy and its importance – Strategy components.
II	Cybersecurity Techniques Password Cracking –Malwares – DoS and DDoS Attacks – SQL Injection – Phishing: Different Techniques, Common Phishing Scams, Prevention Measure- Identity Theft: Types, Techniques, prevention - Attacks on Wireless network: Types, Tools.
III	Next Generation Firewalls Perimeter Networks: Firewall, Types - Deep Packet Inspection-Web Proxy and Secure Web gateway-Web Application Firewall-Virtual Private Network-Zero Day Attack Protection-Intrusion Detection and Prevention System-DNS Security- Next Generation Firewalls- Web Security Solutions.
IV	Cyber Security Planning Security Governance principles, components and Approach-Information Risk Management-Asset Identification-Threat Identification-Vulnerability Identification-Risk Assessment Approaches-Likelihood and Impact Assessment-Risk Determination, Evaluation and Treatment-Security Management Function-Security Policy- Security Models: Bell La Padula, Biba Integrity, Chinese Wall.
V	Security Controls People Management-Human Resource Security-Security Awareness and Education-Information Management-Information Classification and handling-Privacy-Documents and Record Management - Physical Asset Management-Office Equipment-Industrial Control Systems-Mobile Device Security - System Development - -Incorporating Security into SDLC

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

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<input checked="" type="checkbox"/>	Employability	<input checked="" type="checkbox"/>	Innovations
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Syllabus (New Course)

Faculty: Computer Science

Board: Computer Science with Cyber Security

Programme: B.Sc. Computer Science with Cyber Security

Semester: III

Course Code/ Name: 234CY1A4SP / Network Programming

S. No.	List of Experiments
1.	Build a basic Network Topology.
2.	Simulate a bus topology using a single backbone cable and multiple PCs.
3.	Create a ring topology and understand the flow of data in a looped network
4.	Simulate a mesh network by connecting each router to every other router
5.	Create a hierarchical tree topology to illustrate levels of network devices.
6.	Set up a wireless mesh network to simulate wireless connectivity in a mesh layout.
7.	Configure a router and a switch to allow PCs on different subnets to communicate.
8.	Create a network with a web server and allow PCs to access it.
9.	Capture and view real-time packets on your network interface.
10.	Capture and analyze HTTP packets from browsing activity.
11.	Capture and examine the TCP 3-way handshake process.
12.	Capture ARP packets to observe address resolution on the local network.
13.	Analyzing DNS Requests and Responses.
14.	Inspecting HTTP GET and POST Requests
15.	Capture and view real-time packets on your network interface.

PERCENTAGE OF SYLLABUS REVISED: 100%

COURSE FOCUSES ON:

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ATTENDANCE FOR SECOND BOARD OF STUDIES MEETING

Faculty: Faculty of Computer Science


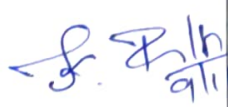
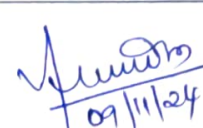
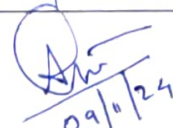
Board: Computer Science with Cyber Security

VENUE : AV Room

DATE : 09.11.2024

TIME : 09.30 a.m.

The following members were present for the Board of Studies Meeting

S.NO.	NAME	DESIGNATION	SIGNATURE
1.	Dr. V. Shobana Professor & Head Department of Computer Science with Cyber Security, Dr.N.G.P. Arts and Science College, Coimbatore.	Chairman	 9/11/24.
2.	Dr. K. Preetha Assistant Professor & Head, Department of Computer Science with Cyber Security, Vellalar College for Women, Erode.	Member - VC Nominee	 9/11/24
3.	Dr. Shina Sheen Professor and Head, Department of Applied Mathematics and Computational Sciences, PSG College of Technology, Coimbatore.	Member - Subject Expert	ABSENT
4.	Dr. Ambili. P.S Associate Professor, School of Computer Science and Applications, Reva University, Bengaluru.	Member - Subject Expert	 09/11/24
5.	Mr. Ajith. M Senior Project Engineer, Information Security Services C-DAC Hyderabad.	Member - Industrial expert	 09/11/24



