

DEPARTMENT OF COMPUTER TECHNOLOGY

**NALLAMUTHU GOUNDER MAHALINGAM COLLEGE
POLLACHI - 642001**

**13th Board of Studies Meeting in the Department of
Computer Technology**

Date: 24.06.2023 Time: 10.00 A.M to 2.00 P.M

Agenda

BoS / CT11.1	:	Welcome address and Opening Remarks by Chairman, Board of studies in offline mode
BoS / CT11.2	:	Confirmation of the Minutes of the 13 th / Previous meeting of Board of studies in offline mode held on 24.06.2023 and Action taken report of 12 th meeting of Board of studies
BoS / CT11.3	:	11.3.1 Syllabus of I B.Sc., COMPUTER TECHNOLOGY for semester I to VI under Regulation 2023-2026 Batch.
		11.3.2 Syllabus of Value added course
BoS / CT11.4	:	Suggestion given by BOS Members

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE

POLLACHI

DEPARTMENT OF COMPUTER TECHNOLOGY

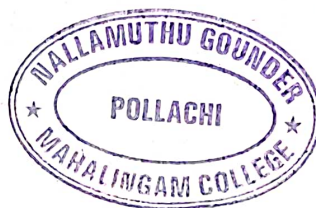
MINUTES OF BOS MEETING

The 13th Meeting of the Board of studies of the Department of Computer Technology was held on 24.06.2023 at 10.00 a.m. in Offline mode

1. The following members were present:

Dr.M.RAJASENATHIPATHI Head of the Department Department of computer technology NGMCollege,Pollachi	Chairman
MS. C. KEERTHANA Assistant Professor Department of computer technology NGM College, Pollachi	Internal Members
MS. K.S. LEELAVATHI Assistant Professor Department of computer technology NGM College, Pollachi	
Dr. R. JAYAPRAKASH Department of computer technology NGM College, Pollachi	
MS. A. KALAIVANI Assistant Professor Department of computer technology NGM College, Pollachi	
Dr. C.R Sakthivel Associate professor & Head Department of of Computer Science Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore	University Nominee
Dr. P.Tamilselvan Associate Professor Department of Computer Science Karpagam Academy of Higher Education Coimbatore 641021	Academic Experts & Academic Auditor
M. Sowndharya Associate, Mechlin Software Technology Pvt. Ltd.,	Industrial Expert

	Pune	
	M. Sunmathi Process executive, Infosys BPM, Chennai.	Alumnus nominated by Principal / HoD
	Dr. P.Velmurugan Assistant Professor Department of Computer Science Government Arts and Science College, Valparai - 642127	Subject Expert
	K. Jayaprakash III- CT NGM College Pollachi	Student Members
	R. Revathy III- CT NGM College Pollachi	



HoD

BoS/CT 11.3

BoS/CT 11.3.1

CDC Co-ordinator

K. SRINIVASAN, M.C.A.,
Co-ordinator

Curriculum Development Cell (CDC)
NGM College (Autonomous)
Pollachi - 642 001.

COE

Prof. P. NAGARAJAN
Deputy Controller of Examinations
N.G.M. College (AUTONOMOUS)
POLLACHI - 642 001.

Dr. P. NAGARAJAN,
M.A., M.Phil., B.Ed., Ph.D.,
PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District

Dr. M. RAJASENATHIPATHI M.A.M.C.A.M.Phil.Ph.D.
Head of the Department
Department of Computer Technology
Nallamuthu Gounder Mahalingam College (Autonomous)
POLLACHI - 642 001.

I B.Sc. COMPUTER TECHNOLOGY (I to VI SEMESTER)

- Core Papers are renamed as CC (Course Code)
- Elective Courses are renamed as DSE (Discipline Specific Elective)
- All Allied Courses rename as GE (Generic Elective): Allied.
- SEC (Skill Enhancement Course) were Introduced in Semester II, IV, V and VI.
- AECC (Ability Enhancement Compulsory Course) were introduced in Semester I and II.

SEMESTER I

The following papers from B.Sc., Computer Technology were accepted by the experts fully without further suggestions:

- 23UCT101 – Core Course I – Programming in C
- 23UCT102 – Core Course II – Digital Fundamentals and Computer Organization
- 23UCT1A1/23UCT1A2 – Generic Elective I - Allied I – Mathematics I – Mathematical structures for Computer Science / Discrete Mathematics
- 23UCT103 – Core Course Lab- I – Programming in C
- 23EVS201- AECC-I: Environmental Studies.

SEMESTER II

The following papers from B.Sc., Computer Technology were accepted by the experts fully without further suggestions:

- 23UCT204 – Core Course III – JAVA Programming
- 23UCT205 – Core Course IV – Data Structures
- 23UCT206 – Core Course Lab II – JAVA Programming Lab
- 23UCT2A1/ 23UCT2A2- Generic Elective II - Allied II – Mathematics II-Operations Research / Statistics
- 23EVS201 – Ability Enhancement Compulsory Course AECC I: Environmental Studies
- 23UCT2S1/23UEL2S1 - Skill Enhancement Course SEC I – Naan Mudhalvan:
Advanced Excel / Professional Skills - This new paper was introduced as per suggestions

of CDC and Subject Expert. (Additionally added this SEC paper in new Scheme Format, given by CDC Department.)

SEMESTER III

Language Papers Tamil and English were introduced in III and IV Semester. (3 +3 Hours)

The following papers from B.Sc., Computer Technology were accepted by the experts fully without further suggestions:

- 23UCT307 – Core Course V – Advanced Java Programming
- 23UCT309 – Core Course Lab III – Advanced Java Programming Lab
- 23UCT310- Core Course LAB IV – Database Management Systems Lab
- 23UCT308 –Core Course VI – Database Management Systems

The presented syllabus was accepted by the experts and a few suggestions were given as follows:

- The topic “Action on Explicit cursors” is to be removed in UNIT V of the same syllabus.
- Core Course Paper – 22UCT309 Core VII: Operating Systems - Paper was removed from previous BoS scheme 2022-25 Batch (III Semester) due to inclusion on Language Papers (Tamil and English) as per direction of CDC.
- 23UCT3A1/ 23UCT3A2 – Generic Elective III - Allied III – Software Engineering / Operating Systems, these papers are introduced , instead of 22UCT3A3: Allied III: Software Engineering , as per the direction of CDC.

The presented Software Engineering syllabus was accepted by the experts and a few suggestions were given as follows:

- The few topics “A Process Framework, A Bridge to Design and Construction, Object-Oriented Analysis” is to be removed in UNIT I, II and III of the same syllabus.
- 23UCT3N1/ 23UCT3N2– Non Major Elective paper I: Office Automation Lab / Multimedia Lab. The Course Office Automation Lab is shifted from IV Semester to III

Semester in-order to removed course HTML in Semester III as Board of Study Members suggested.

SEMESTER IV

The following papers from B.Sc., Computer Technology were accepted by the experts fully without further suggestions:

- 23UCT411 – Core Course VII – Python Programming
- 23UCT413 – Core Course Lab V – Python Programming Lab
- 23UCT412- Core Course VIII – R Programming is introduced, instead of LINUX Programming Paper as industry Expert suggested.
- 23UCT414 – Core Course Lab VI: R Programming Lab was introduced were introduced, instead of LINUX Programming Lab Paper as industry Expert suggested.
(Both 23UCT412 & 23UCT414 Paper were introduced as per Industry demand based on suggestion of industry expert.)
- 23UCT4N1/4N2 –Non Major Elective paper II: Scripting Language Lab / Corel Draw Lab

- Scripting Language Lab is moved, from Skill Based Major Elective course in Semester V as industry Expert suggested

- 23UCT4A1/23UCT4A2 – GE: IV- Allied IV: Data Communication Networks / Software Testing were introduced, instead of 22UCT4A4: Allied IV: Big Data Analytics.

The presented Data Communication Networks syllabus was accepted by the experts and a few suggestions were given as follows:

- The few topics “Internetworking Concepts, Internetworking Devices, Spam in E-Mail and Phishing” is to be removed in UNIT IV, and V of the same syllabus.
- 23UCT4S1/23UCT4S2 - Skill Enhancement Course SEC II – Naan Mudhalvan: Desktop Publishing LAB/ PC Hardware –
- The new paper PC Hardware was introduced as per suggestions of CDC and Subject Expert, and Desktop Publishing Lab Course is shifted from VI Semester (Skill Based Major Elective) to IV Semester in-order to introduced new SEC: Naan Mudhalvan course in Semester IV as Board of Study Members suggested.
(Additionally added this SEC paper in new Scheme Format, given by CDC Department.)

- One Core paper 22UCT414 : Core X: Data Communication Networks was removed from previous BoS scheme 2022 Batch (IV Semester) due to inclusion on Language Papers (Tamil and English – (3+3 Hours) as Per direction of CDC.

SEMESTER V

The following papers from B.Sc. Computer Technology were accepted by the experts fully without further suggestions:

- 23UCT515 – Core Course IX– Open source Technologies
- 22UCT518 Core Course X– Information Security is renamed as 23UCT516 – Core X: Information and Cyber Security as per Suggestions of Academic Expert.
- 23UCT517- Core Course Lab VII: – Open source Technologies Lab
- 23UCT518- Core Course Lab VIII- Web Designing Lab
- 23UCT5E1/5E2/ 5E3- DSE I – Cloud Computing / Embedded Systems / Fundamental of Block Chain Technology.
- 23UCT5S1/23UCT5S2 – SEC_III: Framework Technologies Lab / Unix Programming Lab were newly introduced instead of SBME: I – R- Programming and Scripting languages.

SEMESTER VI

The following papers from B.Sc. Computer Technology were accepted by the experts fully without further suggestions:

- 23UCT619- Core XI: Mobile Application Development and 23UCT620 Core Lab IX: Mobile Application Development were introduced as per guidance of University Nominee.
- 23UCT620 – Core Course Lab – X : Google Workspace Lab
- 23UCT6E4/6E5/6E6 – Discipline Specific Elective II – Machine Learning Techniques / Software Project management / Grid Computing were included as per expert suggestions. (23UCT6E7/6E8/6E9- Discipline Specific Elective III: AI/ Ethical Hacking/ Mobile Computing were included.
(22UCT6E4 and 22UCT6E9 were interchanged as per Subject expert suggested in BoS)

- The following papers from B.Sc., Computer Technology were accepted by the experts fully without further suggestions:
- 23UCT621 – Project
- 22UCT6S3 / 22UCT6S4 Skill Based Elective II – Desktop Publishing Lab / Animation Lab course were removed and 23UCT6S1/6S2 SEC - IV- Naan Mudhalvan: Big Data Analytics Lab / Animation Lab were introduced as per the suggestion of Academic expert.

These changes have been made effect for the students admitted in 2023-2026 with SEMESTER NO. I TO VI accordingly.

BoS/CT 12.4 SUGGESTIONS GIVEN BY THE BoS MEMBERS

12.4.1: Introduce papers related to research and methodologies

12.4.2: Introduce papers related to Management problem solving task

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Curriculum and Syllabi.

Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

- a) The syllabus of First Year Computer Technology under Regulation 2023.

Members Present:

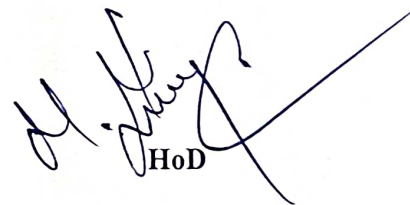
Chairman	
Dr.M.RAJASENATHIPATHI Head of the Department Department of Computer Technology NGM College,Pollachi	 24/6/23
Internal Members	
MS. C. KEERTHANA Assistant Professor Department of Computer Technology NGM College,Pollachi	 24/6/23
MS. K.S. LEELAVATHI Assistant Professor Department of computer technology NGM College,Pollachi	
Dr. R. JAYAPRAKASH Department of Computer Technology NGM College,Pollachi	 24/6/23
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Academic Experts	
Dr. P.Tamilselvan Associate Professor Department of Computer Science Karpagam Academy of Higher Education Coimbatore 641021	 24/6/23 Dr. P. TAMILSELVAN, Ph.D Assistant Professor Department of CS, CA & IT Karpagam Academy of Higher Education Coimbatore - 641 021.

Industrial Experts	
M. Sowndharya Associate, Mechlin Software Technology Pvt. Ltd., Pune.	<i>Sowndharya M</i> 24/06/23
Alumnus nominated by Principal / HoD	
M. Sunmathi Process executive, Infosys BPM, Chennai.	<i>M. Sunmathi</i> 24/06/23
Subject Expert	
Dr. P. Velmurugan Assistant Professor Department of Computer Science Government Arts and Science College, Valparai - 642127	<i>P. Velmurugan</i> 24/06/23
Student Members	
K. Jayaprakash III- CT NGM College Pollachi	<i>K. Jayaprakash</i> 24/06/23
R. Revathy III- CT NGM College Pollachi	<i>R. Revathy</i> 24/06/23

ANNEXURE I

Minutes of the 12th/ Previous Meeting – Action Taken Report

S.No	Suggestion given by expert members	Action taken
1.	Industry Demand papers were introduced	Reviewed and Implemented
2.	Concept based and real time lab exercises is introduced in all practical papers	Implemented
3.	Advanced learning course papers were introduced	Implemented
4.	Guide lines for project is designed	Implemented



HoD

Dr. M. RAJASENATHIPATHI, MCA, MPhil, PhD
Head of the Department
Department of Computer Technology
Nallamuthu Gounder Mahalingam College (Autonomous)
POLLACHI - 642 001.

**List of Courses having focus on local, national, regional and global developmental needs
offered by the Department of Computer Technology**

DEPARTMENT OF COMPUTER TECHNOLOGY						
Programme: Computer Technology					Year:2023	
Course Code	Course Title	Need				Rationale
		Local	National	Regional	Global	
23 UCT 101	Core Course - I : Programming in C				✓	In order to enable the students use the computers effectively in problem solving, this course offers the modern programming Language C along with exposition to various applications of computers.
23 UCT 102	Core Course - II: Digital Fundamentals and Computer Organization			✓		This course has been designed to make the students know about the fundamental principles of digital electronics and gain familiarity with the available IC chips and the broad field of digital systems design. Computer architecture forms the bridge between application needs and the capabilities of the

						underlying technologies. As application demands change and technologies across various thresholds. computer architects must continue innovating to produce systems that can deliver needed performance and costeffectiveness.
23UCT1A1	Generic Elective I - Allied I – Mathematics I – Mathematical structures for Computer Science				✓	Mathematics is the foundation upon which Computer Science is built. It depicts how to use abstract language, work with algorithms, self-analyse the computational thinking, and represent real-world solutions accurately. Apply matrices in the study of electrical circuits, and optics and to conduct seismic surveys and perform encryption in economics, business, 3D games, animation etc
23UCT1A2	Generic Elective I - Allied I – Discrete Mathematics	✓		✓		Discrete mathematics is the mathematical language of computer science. Concepts and notations from discrete mathematics are useful in

						studying and describing objects and problems in all branches of computer science, such as computer algorithms, programming languages, cryptography, automated theorem proving, and software development.
23UCT204	Core Course III: Java Programming				✓	This course develop necessary skills in students to apply object oriented programming techniques in java so that the students will be able to develop complete applications using core java.
23UCT205	Core Course IV – Data Structures			✓	✓	Students understand the way of organizing data in a computer, and how effectively it can be used. Students will be able to solve the issues related to data organization and help to solve real time issues. Data structures has a wide and diverse scope of usage across the fields of Computer Science and Software Engineering Understanding and identification of appropriate data structures to solve real

						time problems based on various design strategies.
23UCT2A1	Allied II : Mathematics II – Operations Research				✓	Optimization techniques and to solve many practical problems in inventory control and capital budgeting problem and Queuing theory update the knowledge for all the three needs . Use as an analytical method of problem-solving and decision making in the management of organizations
23UCT2A2	Generic Elective II - Allied II – Statistics				✓	Draw statistical inference in the field of data analysis. Statistics is used in monitoring and improving the quality of products and processes within a business organization. Statistical analysis is essential for the development of social science theories, being used to test their validity through a robust analysis of real-world data.
23UCT2S1	Skill Enhancement Course SEC I: Advanced Excel	✓				MS Excel is an international business management tool that is used for performance

						review and decision making. Students get a hands-on training experience for what is now considered a mandatory employability skill
23EVS101	Ability Enhancement Compulsory Course AECC I: Environmental Studies		✓		✓	Appreciate the ethical, cross cultural and historical context of environmental issues and the links between human and natural systems.
23UCT307	Core Course V – Advanced Java Programming				✓	This course is designed to teach the student how to write, test, and debug advanced-level Object-Oriented programs and emphasis toward network and web programming. The J2SE and J2EE implement global trends in software design and development. This comprises of reactive development, serverless architecture, and data science. Java is the most popular programming language among embedded software developers for IoT

						devices all around the world.
23UCT308	Core Course VI – Database Management Systems		✓		✓	This course will acquaint the student with knowledge of fundamentals concepts of DBMS and its applications of data using query languages.
23UCT3A1	Generic Elective III - Allied III – Software Engineering		✓			Expertise in various categories of software Development methods.
23UCT3A2	Generic Elective III - Allied III – Operating Systems				✓	Students will get familiarize to the OS services that assist system users, OS design, memory management, Secondary Management and File System Implementation .
23UCT3VA	VAC I: Web Based Scripting Languages				✓	Web technology has diffused globally as it is an umbrella of ogies such as HTML,Scripting to create websites and applications. It can range from developing a simple single static page of plain text to complex web applications, electronic businesses, and social network services.. Web Technologies are widely used in business applications that are for

						specific execution of tasks on a network. Web Applications have become more powerful and can fully replace desktop applications in all the situations.
23UCT309	Core Course Lab III – Advanced Java Programming Lab		✓			Understanding the fundamental concept of the J2EE technologies and the principles of J2EE Programming.
23UCT411	Core Course VII – Python Programming		✓			Programming Skill is very significant since there is an upsurge in the need for programmers and software developers owing to the automation in all fields.
23UCT412	Core Course VIII – R Programming				✓	The purpose of this subject is to cover the concepts, Installation Process, Hardware Requirements and features of Programming. Statistical analysis using R is one of the most widely used application in the world today and is used in almost every industry, ranging from finance, banking to medicine and manufacturing, Banking, Healthcare, Social Media,

						ECommerce and Manufacturing. . It is also used in analyzing and interpreting various Indian Government projects, schemes and laws by extracting the data from social networks.
23UCT4A1	GE: IV- Allied IV: Data Communication Networks		✓			Teaching the students , the layered approach of the network in transferring information. Learns all the basic network related components, Trained for framing different networks. Understanding the working principles of different protocols in the network and identify the flaws in it and rectify within a short span of time.
23UCT4A2	GE: IV- Allied IV: Software Testing		✓			Programming Skill is very significant since there is an upsurge in the need for programmers and software developers owing to the automation in all fields. increase in the importance of software quality and enterprise needs testers. The need for training students to

						become qualified testers is an arduous task all over the world. The goal is to enable students to understand the important role of software testing in the software development process practical sessions and training
23UCT413	Core Course Lab V – Python Programming Lab		✓	✓		To keep pace with the latest technologies pertaining to their chosen field of object programming, Modules, Packages, String and List Methods, and Exceptions. This course is designed to offer the student to programming in Python, including practical application such that after completing the course, the student will have a sound Understanding of the basics of programming in Python.
23UCT4N1/ 23UCT4N2	Skill Based Non-Major Elective II – Scripting languages Lab / CorelDraw Lab			✓		This subject helps the users with a sophisticated set of commands to format, edit, and print text documents. It is used as valuable and important tools in the creation of applications.

						This course is making the students to graphic designers, web designers, and all other work with images and designs.
23UCT4S1	Skill Enhancement Course SEC II – Desktop Publishing LAB			✓		Microsoft Publisher is a desktop publishing program that can be used to create a wide range of publications. The features are drag and drop, mail merge features and can adopt to the organizations printing media.
23UCT4S2	Skill Enhancement Course SEC II – PC Hardware			✓		This course is designed to offer the students to equip in knowledge in the computer's tangible components or delivery systems that store and run the written instructions provided by the software.
23UCT4VA	VAC II: Basics of Internet of Things	✓			✓	The course is prepared to provide the students for detailed understating of IOT for manufacture. This course will enable the students to understand the basics of internet and Various applications of internet like e-mail, FTP,

						Telnet, Newsgroups and video conferencing. Students can relate global market perspectives on creating applications in different domains using Internet of Things.
23UCT515	Core Course IX– Open source Technologies		✓		✓	The students of this Programme can be web developers would be able to write dynamic interactive web based applications using PHP and MYSQL database. After mastering this course they may work as self-employed web page developer.
23UCT516	Core X: Information and Cyber Security		✓		✓	The concepts needed to read through the ripe in the market place and understanding risks and how to deal with them. The student will have a Perspective on security in general and better understanding to reduce and manage the security risks.
23UCT5E1	DSE I – Cloud Computing				✓	The course curriculum has been designed keeping in view the emerging trends in advanced computing as well

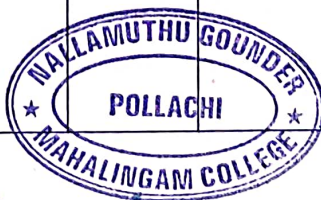
						as contemporary and futuristic human resource requirements of the IT industry. Cloud infrastructures support environmental proactive, powering virtual services rather than physical products and hardware, and cutting down on paper waste, improving energy efficiency, and (access from anywhere with an internet connection) reducing commuter-related emissions. Hosting on cloud is more environmentally friendly and results in less a carbon footprint.
23UCT5E3	DSE I — Fundamentals of Block Chain Technology and Digital Currency				✓	The latest security issues and network related concepts can be learnt.
23UCT5E2	DSE I – Embedded Systems			✓	✓	In the rapidly growing digital world, role of embedded systems is increasingly vital in various domains such as industrial, home automation,

						entertainment systems and Medical equipment.
23UCT518	Core Course Lab VIII- Web Designing Lab			✓		This course develops competency amongst the students to learn design principles to meet current requirements in the highly competitive job market using HTML5 and CSS3. Equip the students to learn about Internet and its application and to develop web pages for business.
23UCT5S1	SEC_III: Framework Technologies Lab			✓		The course curriculum has been designed view Framework is the combination of common language runtime and a set of class libraries. The implementation of Common Language
23UCT5S2	SEC_III: Unix Programming Lab			✓		Student will learn and basic understanding of UNIX OS, UNIX commands and File system and to familiarize students with the Linux environment for doing shell programming on UNIX OS and handle UNIX system calls.
23UCT619	Core XI: Mobile Application Development			✓		Student will learn Cryptography and basic security techniques, security principles and architecture in mobile networks, E-mail security and web security, Develop SSL or Firewall based solutions and analyze the Security and privacy in current Wireless & Mobile Systems in global scenario. To learn about how to design and apply logic gates

						in the design of combinational circuits and analyse the design of synchronous and asynchronous sequential circuits based on global needs.
23UCT620	Core Lab IX: Mobile Application Development		✓			The Mobile Application Development course will focus on fundamental mobile computer programming. If student have a passion for coding, computers and phones, and its helps them ready to specialize your skills to land your dream job as a computer programmer in the mobile space.
23UCT621	Core Course Lab – X : Google Workspace Lab		✓			Students learn different google products included in Google Workspace, such as business email, online file storage, shared calendars, and video meetings, whether you're a Workspace developer, administrator, or end user.
23UCT6E4	Discipline Specific Elective II – Machine Learning Techniques		✓			Students learn different algorithms in machine learning and will be capable to build machine learning based systems for real time problems
23UCT6E5	Discipline Specific Elective II – Software Project Management			✓	✓	Students will apply the principles of agile software development, use CASE tools for software development . Software quality assurance is important as it defines and measures the adequacy of the software (SW) process, providing evidence that establishes confidence to produce SW products of suitable quality for their

						intended purposes.
23UCT6E6 –	Discipline Specific Elective II - Grid Computing			✓	✓	To study the basic concept of Data grid computing allows several users to simultaneously access, change, or transfer distributed data. For instance, a data grid can be used as a large data store where each website stores its own data on the grid.
23UCT6E7	Discipline Specific Elective III: AI				✓	To study the basic concept of Artificial Intelligence. To have an idea about the various representation techniques used. To study the concept of expert systems. Students will be able to understand the requirement and provide an intelligent based system to solve the problem. Artificial intelligence is an effective tool used to automate manual and repetitive tasks.
23UCT6E8	Discipline Specific Elective III: Ethical Hacking				✓	Students will be able to understand the concept of learning ethical hacking; you can play a vital role in securing the systems and data from threats and attacks. Understand the concept of conduct investigations and analyses of the target systems to identify any security or system vulnerabilities from the hacker's point of view and suggest a remedy.

23UCT6E9	Discipline Specific Elective III: Mobile Computing				✓	Students will be able to understand the concept of access all the important documents and files over a secure channel or portal and work as if they were on their computer. It has enhanced telecommuting in many companies.
23UCT621	Project				✓	Experience the project program that affords them the opportunity to match classroom learning with on the-job reality. Adapt to developments in the field and be enriched by active involvement in the field of project. Students are encouraged to take up projects in association with local and regional industries or carry out research projects based on issues in the immediate community
23UCT6S3	SEC - IV – Big Data Analytics Lab				✓	Acquires the knowledge in handling big data prevailing currently in various fields like social networking, census, etc in accordance to global community.
23UCT6S4	SEC - IV – Animation Lab				✓	Acquires the knowledge to motion in art and displayed animated images that can be developed and soft capabilities
23UCT6AL	Advanced Learner Course(ALC) - II :Data Mining and Warehousing				✓	Motivate the students in knowing how the raw facts are preprocessed, transformed, classified and evaluate the performance of the global model.



Dr. M. RAJASENATHIPATHI M.A., M.C.A., M.Phil., Ph.D.
Head of the Department
Department of Computer Technology
Nallamuthu Gounder Mahalingam College (Autonomous)
POLLACHI - 642 001.

K. SRINIVASAN, M.C.A.

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Curriculum Development
Co-ordinator

Curriculum Development Cell (CDC)
NGM College (Autonomous)
Pollachi - 642 001.

PRINCIPAL

Dr. R. MUTHUKUMARAN,
M.A., M.Phil., B.Ed., Ph.D.,
PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District

**List of Courses having focus on Employability/ Entrepreneurship/ Skill development
offered by the Computer Technology**

Computer Technology						
Programme: B.Sc Computer Technology					Year:2022 – 2023	
Course Code	Course Title	Employability (EM) / Entrepreneurship (EN) / Skill Development (SD)			Focus	Year of Introduction
		EM	EN	SD		
23UCT101	CC I: Programming in C	✓			Focusing on expanding programming Knowledge	2011
23UCT102	CC II: Digital Fundamentals and Computer Organization			✓	Focusing on giving knowledge about logic gates and hardware	2011
23UCT1A1	GE I – Allied I: Mathematics - I: Mathematical Structures For Computer Science				Focusing on Mathematics is the foundation upon which Computer Science is built.	2011
23UCT1A2	GE I – Allied I: Mathematics - I: Discrete Mathematics				Focusing on Discrete mathematics is the mathematical language of computer science.	2012
23UCT205	CC IV: DataStructures	✓		✓	Students shall have ability to apply the fundamental knowledge of various Data structures for designing and implementing real time problem.	2012

23UCT204	CCIII: Java programming			✓	Focus on foundation about basic and core Java	2011
23UCT2A1	GE II – Allied II: Mathematics II – Operations Research			✓	Focusing on solve many practical problems in inventory control and capital budgeting problem.	2021
23UCT2A2	GE II – Allied II: Mathematics II – Operations Research / Statistics			✓	Focusing on Optimization techniques and to solve many practical problems in inventory control and capital budgeting problem.	2022
23UCT307	CCV: Advanced Java Programming			✓	To keep pace with the latest technologies pertaining to their chosen field of studies	2011
23UCT308	CC VI: Database Management Systems	✓			Focus on Query techniques and to acquire knowledge on core database methodology	2011
23UCT3A1	GE III – Allied III: Software Engineering	✓			Focus on various categories of software Development methods.	2011
23UCT3A2	GE III – Allied III: Operating Systems	✓			Focus on OS services that assist system users, OS design, memory management, Secondary Management.	2011

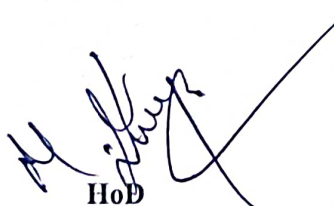
23UCT411	CC VIII: Python Programming	✓		✓	Focus on designed to offer the student to programming in Python, including practical application	2022
23UCT412	CC IX: R Programming			✓	Interface R with C/C++ and Python for increased speed or functionality and find new packages for text analysis, image manipulation, and perform statistical analysis of the same.	2022
23UCT4A1	GE IV – Allied IV: Data Communication Network	✓		✓	Focus on approach of the network in transferring information	2012
23UCT4A2	GE IV – Allied IV: Software Testing	✓		✓	Students can get exposure on various software testing tools used in the Industries.	2021
23UCT413	CC Lab V: Python Programming Lab	✓		✓	Development of Python application for increased functionality and find new packages for text analysis, image Manipulation, and perform statistical analysis of the same.	2018
23UCT3N1/ 23UCT3N2	Skill Based Non-Major Elective II - Office Automation Lab / Multimedia Lab		✓		Focused to learn about office automation Tools for digital update	2017
23UCT4N1/	Non-Major Elective		✓		Focused to Web	2012

23UCT4N2	Paper -II : Scripting Languages Lab / CorelDraw Lab				technology has diffused globally as it is an umbrella such as HTML, Scripting to create websites and applications.	
23UCT4VA	VAC II- IoT (Internet of Things)	✓			Focus on to get Employability, help a particular individual to develop their own skills in their chosen field of the study	2020
23UCT515	CC X: Open Source Technologies	✓		✓	Imports knowledge in developing Applications using PHP with MySQL and Examine the concept of data reading in web pages.	2013
23UCT516	CCXI: Information and Cyber Security	✓		✓	Explore the different types of security systems, different levels of security and security policies and algorithms.	2021
23UCT5E1	DSE-I [#] : Cloud Computing	✓		✓	Design cloud infrastructure management services and security policies and integrate the Next generation Data center technologies and Cloud API's .	2013
23UCT5E2	DSE-I [#] : Embedded Systems	✓	✓	✓	Embedded system design and programming skills for different commercial and industrial applications are enhanced	2012
23UCT5E3	DSE-I [#] :- Fundamentals of Block Chain Technology	✓		✓	Focus on network related concepts can be learnt.	2022

	and Digital Currency					
23UCT518	CC Lab VIII: Web Designing Lab	✓		✓	Development of Websites for small companies using VB.NET, XML, Scripting languages	2013
23UCT619	Core XII : Mobile Application Development	✓		✓	Focus on Cryptography and basic security techniques, security principles and architecture in mobile networks, E-mail security and web security, Develop SSL or Firewall based solutions and analyze the Security and privacy in current Wireless & Mobile Systems in global scenario.	2023
23UCS6E4	Discipline Specific Elective (DSE) – II Machine Learning	✓		✓	Students can able to understand the concepts behind different types of learning and their appropriateness apply different learning techniques for different kinds of data and applications	2022
23UCS6E5	Discipline Specific Elective (DSE) – II Software Project Management	✓	✓	✓	Focus on principles of agile software development, use CASE tools for software development	2012
23UCS6E6	Discipline Specific Elective (DSE) – II Grid Computing	✓	✓	✓	Focus on Data grid computing allows several users to simultaneously access, change, or transfer distributed data.	2013

		✓	✓	✓		
23UCS6E	Discipline Specific Elective (DSE) – III Artificial Intelligence				Focus on concept of Artificial Intelligence. To have an idea about the various representation techniques used. To study the concept of expert systems.	2021
23UCS6E8	Discipline Specific Elective (DSE) – III – Ethical Hacking	✓		✓	Focus on latest security issues and network related concepts can be learnt.	2022
23UCS6E9	Discipline Specific Elective (DSE) – III : Mobile Computing	✓		✓	Focus on the concept of access all the important documents and files over a secure channel or portal and work as if they were on their computer.	2020
23UCT6S1	SEC IV: Naan Mudhalvan: Big Data Analytics Lab	✓		✓	Students will have knowledge on sources of Big data, data analytics life cycle, Hadoop Ecosystem, etc.	2020




HOD
Dr. M. RAJASENATHIPATHI MA, M.C.A., M.Phil., Ph.D.
 Head of the Department
 Department of Computer Technology
 Nallamuthu Gounder Mahalingam College (Autonomous)
 POLLACHI - 642 001.


A.K. SRINIVASAN, M.C.A.,
 Co-ordinator
 Curriculum Development Cell (CDC)
 N.G.M. College (Autonomous)
 Pollachi - 642 001.


PRINCIPAL
Dr. R. MUTHUKUMARAN,
 M.A., M.Phil., B.Ed., Ph.D.,
PRINCIPAL
 N.G.M. College, Pollachi - 642 001
 Coimbatore District

Percentage of Revision of B.Sc., Computer Technology Syllabus under Regulation 2023

COMPUTER TECHNOLOGY							
S.No	Course Code	Course Title	Change Details	% of Changes	Content Deleted	Content Updated	Reason for Change
							Subject Expert / Course Teacher / Alumini Opinion
1.	22UCT2A2	Generic Elective II - Allied II – Mathematics II- Statistics	New Paper	100%	Contents not Deleted	New Syllabus introduced in Semester II as CDC directed	As Subject Expert suggested
2.	23UCT2S1	Skill Enhancement Course SEC I – Naan Mudhalvan: Advanced Excel	New Paper	100%	Contents not Deleted	New Syllabus introduced in Semester II as CDC directed	As Board members suggested
3.	23UCT308	Core Course VI – Database Management Systems	Few suggestions were made in one Unit of this syllabus	20 %	Action on Explicit cursors	Contents not Added	As Board members suggested
4.	23UCT3A1	Generic Elective III - Allied III – Software Engineering	Few suggestions were made in Three Unit of this syllabus	60%	A Process Framework, A Bridge to Design and Construction, Object-Oriented Analysis	Contents not Added	As Alumni members suggested
5.	23UCT411	Core Course VII – Python	Few suggestions	40%	Additional File Methods-Using	Contents not Added	As Student members

		Programming	were made in two Unit of this syllabus		Pipes as Data Streams-Handling IO Exceptions-Working With Directories. <i>Special Characters-Character Classes-Quantifiers-Dot Character-Greedy Matches-Grouping-Matching at Beginning or End-Match Objects-Substituting-Splitting a String-Compiling Regular Expressions.</i>		suggested
6.	23UCT412	Core Course VIII – R Programming	New Paper	100%	New Syllabus introduced in Semester IV instead of subject Linux Programming	New Syllabus R Programming introduced	As Industry Expert suggested
7.	23UCT414	Core Course Lab VI: R Programming Lab	New Paper	100%	New Syllabus introduced in Semester IV instead of subject Linux Programming Lab	New Syllabus R Programming Lab introduced	As Industry Expert suggested
8.	23UCT4A1	GE: IV- Allied IV: Data Communication Networks	Few suggestions were made in Two Unit of this syllabus	40%	Internetworking Concepts, Internetworking Devices, Spam in E-Mail and	Contents not Added	As Alumni members suggested

					Phishing		
9	23UCT4A2	GE: IV- Allied IV: Software Testing	New Paper	100%	"	"	As Industry Expert suggested
10	23UCT4S2	Skill Enhancement Course SEC II – Naan Mudhalvan: PC Hardware	New Paper	100%	"	"	As Subject Expert suggested
11	23UCT5S1	SEC_III: Framework Technologies Lab	New Paper	100%	"	"	As Industry Expert suggested
12	23UCT5S2	SEC_III: Unix Programming Lab	New Paper	100%	"	"	As Subject Expert suggested
13	23UCT619	Core XI: Mobile Application Development	New Paper	100%	New Syllabus introduced in Semester VI instead of subject Framework Technology	New Mobile Application Development introduced	As University Nominee suggested
14	23UCT620	Core Lab IX: Mobile Application Development	New Paper	100%	New Syllabus introduced in Semester VI instead of subject Framework Technology Lab	New Mobile Application Development Lab introduced	AS University Nominee suggested
15	23UCT6S2	SEC - IV- Naan Mudhalvan: Big Data Analytics Lab	New Paper	100%	"	"	As Industry Expert suggested

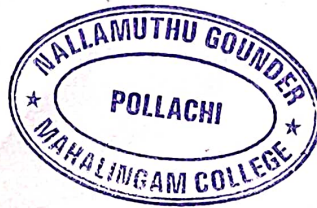
Total No. of Papers = 52

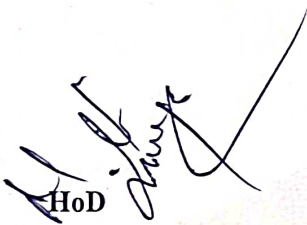
Weightage for each paper = 100

No. of Paper Newly Introduced / Revised = 11 +1.6

PERCENTAGE OF SYLLABUS REVISED = $(1260/5200)*100$

=24.23%




HoD

Dr. M. RAJASENATHIPATHI M.A., M.C.A., M.Phil., Ph.D.
Head of the Department
Department of Computer Technology
Nallamuthu Gounder Mahalingam College (Autonomous)
POLLACHI - 642 001.


K. SRINIVASAN, M.C.A.
Co-ordinator
Curriculum Development Cell (CDC)
NGM College (Autonomous)
Pollachi - 642 001.



PRINCIPAL

Dr. R. MUTHUKUMARAN,
M.A., M.Phil., B.Ed., Ph.D.,
PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District

DEPARTMENT OF COMPUTER SCIENCE

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE

POLLACHI - 642001

**24th Board of Studies Meeting in the Department of
Computer Science**

Date: 22.04.2024 Time: 10.00 A.M to 2.00 P.M

Agenda

BoS / CS24.1	:	Welcome address and Opening Remarks by Chairman, Board of studies in the Department of Computer Science at Offline Mode
BoS / CS24.2	:	Confirmation of the Minutes of the 23 rd Board of studies in offline mode held on 24.06.2023 and Action taken report of 23 rd meeting of Board of studies
BoS / CS24.3	:	24.3.1 Syllabus of I B.Sc., COMPUTER SCIENCE for semester I to VI under Regulation 2024-2027 Batch.
BoS / CS24.4	:	Suggestion given by BOS Members

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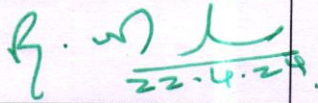
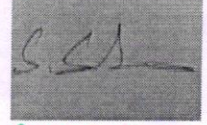
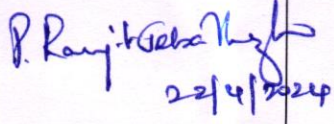
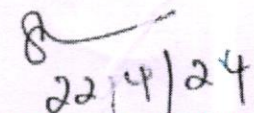
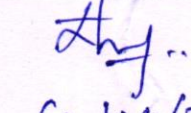
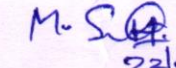
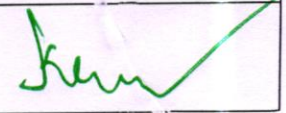
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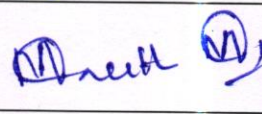
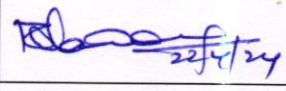
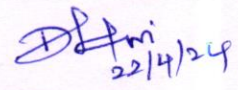
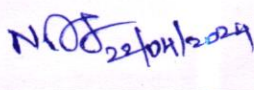
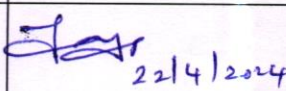
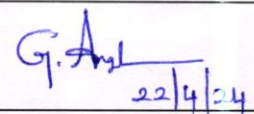
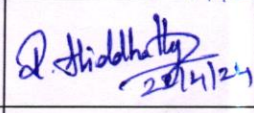
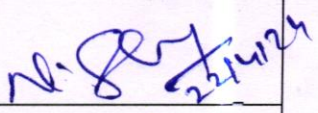
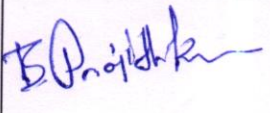
DEPARTMENT OF COMPUTER SCIENCE

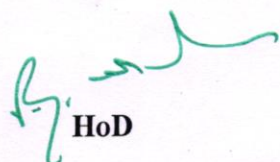
MINUTES OF BOS MEETING

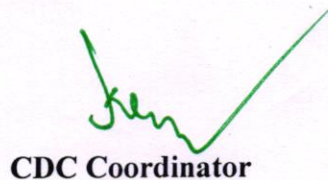
The 24th Meeting of the Board of studies of the Department of Computer Science was held on **22.04.2024** at 10.00 a.m. in Offline mode

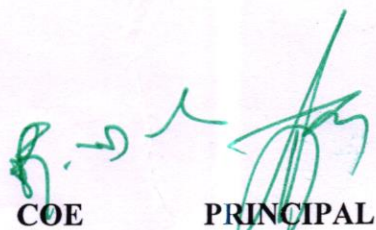
1. The following members were present:

S.No	Name	Signature
1	Dr. R. Manicka chezian Head of the Department of Computer Science – BoS Chairman	 22-4-24
2	Dr. S. Sukumaran Associate Professor. Department of Computer Science, Erode Arts and Science College, Erode - University Nominee	 (ATTENDED ONLINE)
3	Dr. P. RanjitJebaThangaiah Professor and Head, Department of Digital Science, Karunya Institute of Technology and Sciences,Coimbatore - Subject Expert	 22/4/2024
4	Dr. S. Veni Associate Professor, Department of Computer Science, Karpagam Academy for Higher Education, Coimbatore - Subject Expert	 22/4/24 (ATTENDED ONLINE)
5	Mr. L. Thanappan Proprietor Altavista Technology, Pollachi - Industrial Expert	 (22/04/2024)
6	Mr. M. Selvakumar Testing Engineer Nxtgradetech, Bangalore - Alumni Representative	 22/04/24
7	Mr. K. Srinivasan Associate Professor of Computer Science - Internal Member	

8	Dr. Aruchamy Rajini Assistant Professor of Computer Science - Internal Member	
9	Ms. M. Malathi Assistant Professor of Computer Science - Internal Member	
10	Ms. M. Latha Assistant Professor of Computer Science - Internal Member	
11	Dr. R. Nandhakumar Assistant Professor of Computer Science - Internal Member	
12	Ms. M. Dhavapriya Assistant Professor of Computer Science - Internal Member	
13	Dr. S. Sharmila Assistant Professor of Computer Science - Internal Member	
14	Dr. M. Meena Krithika Assistant Professor of Computer Science - Internal Member	
15	Mr. N. Arul Kumar Assistant Professor of Computer Science - Internal Member	
16	Dr. P. Jayapriya Assistant Professor of Computer Science - Internal Member	
17	Ms. G. Angayarkanni Assistant Professor of Computer Science - Internal Member	
18	Dr. R. Shiddharthy Assistant Professor of Computer Science - Internal Member	
19	Mr. N. Sureshbabu Assistant Professor of Computer Science - Internal Member	
20	Mr. B. Prajith Kumar UG Department of Computer Science, Nallamuthu Gounder Mahalingam College, Pollachi – Student Representative	


HoD


CDC Coordinator


COE


PRINCIPAL

Head of the Department
Department of Computer Science,
NGM College, Pollachi - 642 001

K. SRINIVASAN, M.C.A.,
Co-ordinator
Curriculum Development Cell (CDC)
NGM College (Autonomous)
Pollachi - 642 001.

Dr. R. MANICKA CHEZIAN, M.Sc., M.S., Ed.D.
Controller of Examinations
NGM College (Autonomous)

Dr. R. MUTHUKUMARAN,
M.A., M.Phil., B.Ed., Ph.D.
PRINCIPAL
POLLACHI - 642 00 N.G.M. College, Pollachi - 642 001
Coimbatore District

BoS/CS24.1 The Chairman, BoS of the Department of Computer Science welcomed and introduced the members of 24th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting.

BoS/CS24.2 The minutes of the 23rd Board of Studies meeting held on **24.06.2023** were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the previous Academic council.

Action Taken Report (Enclosed in Annexure 1)

BoS/CS24.3

BoS/CS24.3.1

B.Sc COMPUTER SCIENCE (I to VI SEMESTER)

The following Papers from B.Sc Computer Science were accepted by the experts **without any modification**

Course Code (2023-2026 Batch)	Course Code (2024-2027 Batch)	Course Name
Semester I		
23UCS102	24UCS102	CC II: Digital Computer Fundamentals and Organization (Credit was decreased from 5 to 4)
23UCS1A1	24UCS1A1	GE I – Allied I: Statistical Methods & Linear Algebra
23UCS1A2	24UCS1A2	GE I – Allied I: Advanced Mathematics and Applied Statistics
Semester II		
23UCS205	24UCS205	CC IV: Data Communication and Computer Networks
23UCS2A2	24UCS2A2	GE II – Allied II: Discrete Mathematical Structures
23UCS2S1	24UCS2S1	SEC I: NaanMudhalvan : Business English Communications
Semester III		
23UCS308	24UCS308	CC VI: Operating System Concepts and Linux (Credit was decreased from 5 to 4)
23UCS3A1	24UCS3A1	GE III – Allied III: Computer Based Optimization Techniques
23UCS3A2	24UCS3A2	GE III – Allied III: Resource Management Techniques
23UCS310	24UCS310	CC Lab IV: Programming Lab in Linux
Semester IV		
23UCS411	24UCS411	CC VII: Python Programming
23UCS412	24UCS412	CC VIII: Relational Database Management Systems
23UCS413	24UCS413	CC Lab V: Programming Lab in Python

23UCS414	24UCS414	CC Lab VI: Programming Lab in RDBMS
Semester V		
23UCS516	24UCS516	CC X: Cyber Security
23UCS5E1/ 23UCS5E2/ 23UCS5E3	24UCS5E1/ 24UCS5E2/ 24UCS5E3	DSE I : Data Mining and Warehousing / DSE I: Data Engineering with Google Cloud / DSE I: Mobile Application Development (Credit was decreased from 6 to 5)
23UCS517	24UCS5S1	CC Lab VII: Programming Lab in .NET (Shifted to Part IV as SEC III)
23UCS518	24UCS518	CC Lab VIII: Programming Lab in PHP & MySQL
Semester VI		
23UCS619	24UCS619	Core XI : R Programming
23UCS6E4	24UCS6E4	DSE-II: Artificial Intelligence and Machine learning
23UCS6E6	24UCS6E6	DSE II: MongoDB
23UCS6E7	24UCS6E7	DSE-III: Information Retrieval
23UCS620	24UCS620	CC Lab IX: R Programming Lab
23UCS621	24UCS621	CC Lab X: Programming Lab in Android
23UCS622	24UCS622	Project

The following Papers were **swapped** due to Course load balancing and Curriculum updates

Course Code (2023-2026 Batch)	Course Code (2024-2027 Batch)	Course Name	Reason for Swapping
23UCS307	24UCS204	CC III: Java Programming	Due to the removal of 23UCS101- C Programming from Semester I
23UCS307	24UCS206	CC Lab II: Programming Lab in Java	Due to the removal of 23UCS103 - CC Lab I: Programming Lab in C
23UCS5S2	24UCS6S2	SEC III: DevOps Foundation	Due to the Curriculum Update

The following courses were revised with **major / minor modifications**

Course Code	Course Name	Reason for modification
24UCS2A1	GE II – Allied II: Vedic and Discrete Mathematics	Suggested by CDC and Subject Expert
24UCS515	CC IX: Open Source Technologies	Suggested by Student Representative
24UCS6E5	Web Development Essentials with Angular, React and Node.js	The syllabi for “ 23UCS6E5 - FrontEnd Development with React” and “23UCS6E9 - Angular and NodeJS” were combined into "Web Development Essentials with Angular, React, and Node.js" to streamline the curriculum and offer a more comprehensive learning experience, as suggested by students for better industry relevance.
24UCS6E8	Java script and JQuery for Web Designing	Shifted the Unit I HTML Concepts from the course 23UCS6E8 - HTML, Javascript and JQuery for Web Designing to 24UCS515 - CC IX: Open Source Technologies

The following **New Courses** were introduced

Course Code	Course Name	Reason for adding New Courses
24UCS101	CC I: C++ Programming	The course "23UCS204 Data Structure using C++" was split into two papers: 1. Data Structure and 2. C++ Programming, to allow for better focus and understanding of each subject separately. The above suggestion is given by Faculty members
24UCS103	CC Lab I: Programming Lab in C++	Feedback from Faculty
24UCS2S2	SEC I: Data Analysis using Excel	Suggested by Subject Expert
24UCS307	CC V: Data Structures	The course "23UCS204 Data Structure using C++" was split into two papers: 1. Data Structure and 2. C++ Programming, to allow for better focus and understanding of each subject separately. The above suggestion is given by Faculty members
24UCS309	CC Lab III: Programming Lab in Data Structures	Feedback from Faculty
24UCS4S1	SEC II: Software Testing using	Suggested by Subject Expert and Alumni

	Selenium	
24UCS517	CC XI: Software Engineering	Suggested by Subject Expert
24UCS6E9	DSE-III: Big Data Analytics	Due to the growing demand for data professionals in the industry. Suggested by Industry Expert
24UCS6S1	SEC IV: Data Visualization using Tableau	Suggested by Subject Expert

These changes have been made effect for the students admitted in 2024-2027 with Semesters I to VI accordingly.

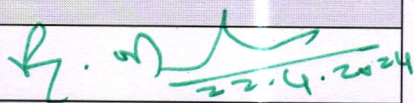
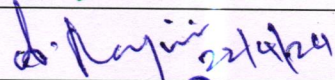
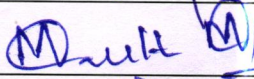
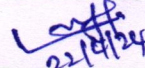
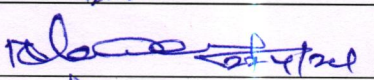
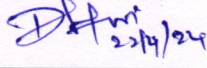
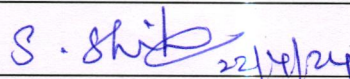
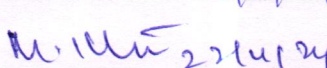
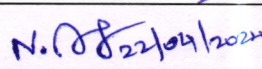
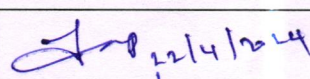
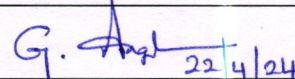
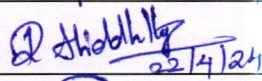
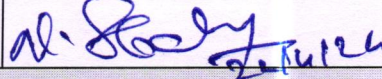
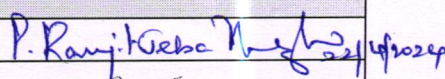
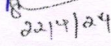
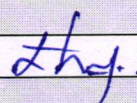
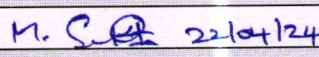
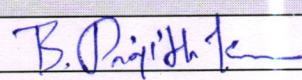
BoS/CT 24.4 SUGGESTIONS GIVEN BY THE BoS MEMBERS

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Curriculum and Syllabi.

- The course "Python Programming (24UCS411)" has been introduced with the option for students to take the exam in either Tamil or English, to promote and enrich the use of regional languages in the curriculum.
- The Non-Major Elective hours were increased from 1 to 2 for the batch 2024-2027 to provide students with more opportunities to explore diverse subjects and enhance their overall academic experience suggested by CDC.
- The End-Semester Exam (ESE) for AECC I: Environmental Studies(24EVS101) will be conducted in Semester I.

Based on the suggestions given by the members, BOS resolved to recommend the above to the Academic Council for further approval.

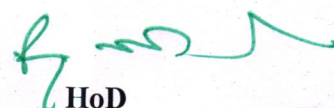
Members Present:

Chairman	
Dr. R. Manicka chezian Head of the Department	 22.4.2024
Internal Members	
Mr. K. Srinivasan Associate Professor	
Dr. Aruchamy Rajini Assistant Professor	 22/4/24
Ms. M. Malathi Assistant Professor	
Ms. M. Latha Assistant Professor	 22/4/24
Dr. R. Nandhakumar Assistant Professor	 22/4/24
Ms. M. Dhavapriya Assistant Professor	 22/4/24
Dr. S. Sharmila Assistant Professor	 22/4/24
Dr. M. Meena Krithika Assistant Professor	 22/4/24
Mr. N. Arul Kumar Assistant Professor	 22/4/2024
Dr. P. Jayapriya Assistant Professor	 22/4/2024
Ms. G. Angayarkanni Assistant Professor	 22/4/24
Dr. R. Shiddharthy Assistant Professor	 22/4/24
Mr. N. Sureshbabu Assistant Professor	 22/4/24
University Nominee	
Dr. S. Sukumaran	
Subject Expert	
Dr. P. RanjitJebaThangaiah	 22/4/2024
Dr. S. Veni	 22/4/24
Industrial Expert	
Mr. L. Thanappan	
Alumni Representative	
Mr. M. Selvakumar	 22/4/24
Student Representative	
Mr. B. Prajith Kumar	

ANNEXURE I

Minutes of the 23th Board of Studies Meeting – Action Taken Report

S.No	Suggestion given by expert members	Action taken
1.	Industry Demand papers were introduced to align the curriculum with current industry needs.	Reviewed and Implemented
2.	Concept-based and real-time lab exercises were added to certain practical papers to enhance hands-on learning.	Implemented
3.	Updated syllabi to include emerging technologies and trends.	Implemented
4.	Additional skill enhancement courses were introduced into the curriculum to further enrich students' skills and capabilities.	Implemented



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Head of the Department
Department of Computer Science,
NGM College, Pollachi - 642 001

**List of Courses having focus on local, national, regional and global developmental needs
offered by the Department of Computer Science**

DEPARTMENT OF COMPUTER SCIENCE						
Programme: Computer Science					Year: 2024	
Course Code	Course Title	Need				Rationale
		Local	National	Regional	Global	
24UCS101	CC I: C++ Programming				✓	This course empowers students to contribute to various sectors by creating robust and scalable applications, aligning with the evolving demands of the software industry.
24UCS102	CC II: Digital Computer Fundamentals and Organization				✓	Provides with skills and knowledge to utilize the digital devices of today as well as providing foundations that will empower them to more easily understand and use future technology as well
24UCS1A1	GE I – Allied I: Statistical Methods & Linear Algebra			✓		Provides critical analytical skills through statistical methods and linear algebra, enabling students to interpret complex data and solve diverse mathematical problems, thereby supporting informed decision-making and advancing research across various fields.
24UCS1A2	GE I – Allied I: Advanced Mathematics and Applied Statistics			✓		Statistical analysis gives meaning to the meaningless numbers, thereby breathing life into a lifeless data & to understand and make predictions about such diverse things as glacial movement, seismic events etc.
24UCS103	CC Lab I: Programming Lab in C++				✓	Develops hands-on programming skills in C++ through practical lab sessions, enhancing students' ability to apply theoretical

						knowledge to real-world software development challenges.
24UCS204	CC III: Java Programming				✓	Offers significant advantages over other languages and environments, making it suitable for virtually any programming task. Java is easy to learn since it was designed precisely to be simple to understand and use.
24UCS205	CC IV: Data Communication and Computer Networks				✓	Enable seamless exchange of data between any two points in the world. This exchange of data takes place over a computer network.
24UCS2A1	GE II – Allied II: Vedic and Discrete Mathematics		✓			Equips students with essential mathematical concepts from Vedic and discrete mathematics, fostering problem-solving skills and logical reasoning applicable to diverse computational and theoretical challenges.
24UCS2A2	GE II – Allied II: Discrete Mathematical Structures		✓			Provides essential mathematical foundations for analyzing and solving complex problems in computer science, supporting logical reasoning and algorithm design.
24UCS206	CC Lab II: Programming Lab in Java		✓			Offers significant advantages over other languages and environments, making it suitable for virtually any programming task. Java is easy to learn since it was designed precisely to be simple to understand and use.
24UCS2S1	SEC I: Business English Communications				✓	Improve your ability to interact with English-speaking countries or companies.
24UCS2S2	SEC I: Data Analysis using Excel				✓	Enhances data analysis skills by leveraging Excel's powerful tools, enabling students to efficiently organize, analyze, and visualize data for informed decision-making.

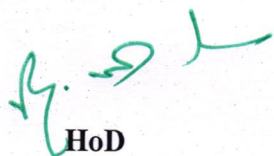
24UCS307	CC V: Data Structures				✓	Offers significant advantages over other languages and environments, making it suitable for virtually any programming task. Java is easy to learn since it was designed precisely to be simple to understand and use.
24UCS308	CC VI: Operating System Concepts and Linux				✓	An operating system provides the interface between the users of a computer and that computer's hardware & manage several services, including process scheduling, application scheduling, basic peripheral devices and file systems.
24UCS3A1 / 24UCS3A2	GE III – Allied III: Computer Based Optimization Techniques / Resource Management Techniques		✓			Improve the performance of a system, process or model, and can also help to reduce costs, increase efficiency and improve the quality of the results
24UCS309	CC Lab III: Programming Lab in Data Structures				✓	Provides practical experience in implementing and manipulating data structures, reinforcing theoretical concepts and improving problem-solving skills essential for effective software development.
24UCS310	CC Lab IV: Programming Lab in Linux				✓	Linux programming creates applications, interfaces, programs and software. Often, Linux code is used on desktops, real-time programs and embedded systems.
24UCS411	CC VII: Python Programming (Regional Language)				✓	Earning Potential. Python is the second-highest paid computer language, according to Indeed. Ease of Comprehension. One of the top benefits of Python is that it is easy to learn and fun to use.
24UCS412	CC VIII: Relational Database		✓			RDBMS can be beneficial to most organizations; the systematic view of raw data helps companies better

	Management Systems					understand and execute the information while enhancing the decision-making process.
24UCS4A1 / 24UCS4A2	GE IV – Allied IV: Accountancy for Decision Making / Financial Accounting	✓				Keeps a systematic record of the organization's financial information. Up-to-date records help users compare current financial information to historical data.
24UCS413	CC Lab V: Programming Lab in Python				✓	Earning Potential. Python is the second-highest paid computer language, according to Indeed. Ease of Comprehension. One of the top benefits of Python is that it is easy to learn and fun to use.
24UCS414	CC Lab VI: Programming Lab in RDBMS		✓			RDBMS can be beneficial to most organizations; the systematic view of raw data helps companies better understand and execute the information while enhancing the decision-making process.
24UCS4S1	SEC II: Software Testing using Selenium		✓			Equips students with skills in automated software testing using Selenium, enhancing their ability to ensure software quality and reliability through efficient and scalable testing practices.
24UCS4S2	SEC II: Aptitude for Placements				✓	Aptitude tests are widely used by employers as a tool to evaluate candidates' suitability for a job or a training program.
24UCS515	CC IX: Open Source Technologies				✓	Lower starting costs, faster project starts, faster iteration, more-flexible software development processes, robust community-driven support, and easier license management, without being contractually locked into work with a single vendor
24UCS516	CC X: Cyber Security				✓	Cyber Security can help to prevent data breaches, identity theft, and other types of cybercrime. Organizations must have strong cyber security measures to protect their data and customers.

24UCS517	CC XI: Software Engineering					Provides a comprehensive understanding of software development processes and methodologies, enabling students to design, develop, and manage high-quality software systems effectively.
24UCS5E1	DSE -I: Data Mining and Warehousing		✓			Data mining attempts to depict meaningful patterns through a dependency on the data that is compiled in the data warehouse.
24UCS5E2	DSE -I: Data Engineering with Google Cloud				✓	Google Cloud Platform enables data engineers to create end-to-end data pipelines right from storing and processing data and workflow orchestration to presenting data through visualization dashboards.
24UCS5E3	DSE -I: Mobile Application Development				✓	Process of making software for smartphones, tablets and digital assistants, most commonly for the Android and iOS operating systems.
24UCS5S1	SEC III: Programming Lab in .NET				✓	Open-source platform for building desktop, web, and mobile applications that can run natively on any operating system.
24UCS518	CC Lab VIII: Programming Lab in PHP & MySQL				✓	Open-source server-side programming languages used to create dynamic websites. They provide flexibility, as they can be used and manipulated on any operating system.
24UCS5AL	ALC – I: Cloud Computing		✓			Cloud infrastructure involves the hardware and software components required for proper implementation of a cloud computing model.
24UCS619	Core XI: R Programming				✓	R offers a wide variety of statistics-related libraries and provides a favorable environment for statistical computing and design.
24UCS6E4	DSE–II: Artificial Intelligence and Machine Learning				✓	Improve data integrity and use AI to reduce human error—a combination that leads to better decisions based on better data.
24UCS6E5	Web Development Essentials with				✓	React lets you build rich user-interfaces easily. Quality of user-

	Angular, React and Node.js					interfaces is important because a poorly designed user-interface is generally less user-friendly and the users will not like a poorly designed UI. Angular enables developers to create dynamic web applications that are based on model-view controller architectural pattern and use HTML as a template language. NodeJS, on the programmers to build scalable server-side applications by using JavaScript as a server-side programming language.
24UCS6E6	DSE-II: MongoDB				✓	When an application needs high availability of data, flexibility of data storage, ability to scale-out quickly or the ability to support real-time analytics and big data needs.
24UCS6E7	DSE-III: Information Retrieval				✓	Enable users to find relevant information from a stored and organized collection of documents.
24UCS6E8	DSE-III: Javascript and JQuery for Web Designing				✓	JavaScript and jQuery are vital tools for modern web development, with JavaScript enabling interactive web pages and jQuery simplifying JavaScript tasks.
24UCS6E9	DSE-III: Big Data Analytics				✓	Equips students with advanced techniques for analyzing and interpreting large datasets, enabling them to extract valuable insights and drive data-informed decisions across various industries.
24UCS620	CC Lab IX: R Programming Lab				✓	R offers a wide variety of statistics-related libraries and provides a favorable environment for statistical computing and design.
24UCS621	CC Lab X: Programming Lab in Android				✓	Learn the fundamentals of developing Android Applications, from project creation to installation on a physical device.
24UCS6S1	SEC IV: Data Visualization using Tableau				✓	Students to create compelling and interactive visualizations using Tableau, enhancing their ability to

						present data insights clearly and effectively for informed decision-making.
24UCS6S2	SEC IV: DevOps Foundation				✓	Increases an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes.
24UCS622	Project				✓	The purpose of a project explains the reason for its existence to all of the project stakeholders from board members to the team delivering the project.



HoD
Head of the Department
Department of Computer Science,
NGM College, Pollachi - 642 001



PRINCIPAL
Dr. R. MUTHUKUMARAN,
M.A., M.Phil., B.Ed., Ph.D.,
PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District

**List of Courses having focus on Employability/ Entrepreneurship/ Skill development
offered by the Computer Science**

Computer Science						
Programme: B.Sc Computer Science					Year: 2024 – 2025	
Course Code	Course Title	Employability (EM) / Entrepreneurship (EN) / Skill Development (SD)			Focus	Year of Introduction
		EM	EN	SD		
24UCS101	CC I: C++ Programming	✓			Focusing on expanding programming Knowledge	
24UCS102	CC II: Digital Computer Fundamentals and Organization			✓	Helps students to know how exactly each instruction is executed at the micro level.	
24UCS1A1/ 24UCS1A2	GE I – Allied I: Mathematics - Statistical Methods & Linear Algebra / Advanced Mathematics and Applied Statistics			✓	Statistics may be used to study the vast amounts of data we have about these systems and look for patterns.	
24UCS103	CC Lab I: Programming Lab in C++	✓			Focusing on expanding programming Knowledge	
24UCS204	CC III: Java Programming	✓			Java is versatile and can be used in various types of applications, including desktop, mobile, and web apps.	
24UCS205	CC IV: Data Communication and Computer Networks	✓			It acts as basis of communication in Information Technology (IT). It is system of connected computing devices and shares information and	

					resources between them.	
24UCS2A1 / 24UCS2A2	GE II – Allied II: Mathematics II: Vedic and Discrete Mathematics / Discrete Mathematical Structures			✓	Able to generalize from a single instance of a problem to an entire class of problems, and to identify and abstract patterns from data.	2024
24UCS206	CC Lab II: Programming Lab in Java				Java is versatile and can be used in various types of applications, including desktop, mobile, and web apps.	
24UCS2S1	SEC I: Naan Mudhalvan : Business English Communications	✓			Communication enhances the socialization, a vital aspect of employability enhancement.	
24UCS2S2	SEC I: Naan Mudhalvan : Data Analysis using Excel			✓	Equips students with practical skills in data analysis using Excel, enhancing their ability to interpret and manage data effectively for various analytical and decision-making tasks.	2024
24UCS204	CC III: Data Structures	✓			Using appropriate data structures can help programmers save a good amount of time while performing operations such as storage, retrieval, or processing of data.	2024
24UCS308	CC VI: Operating System Concepts and Linux			✓	Helps to know how to manage the computer's memory and processes, as well as all of its software and hardware.	

24UCS3A1 / 24UCS3A2	GE III – Allied III: Computer Based Optimization Techniques / Resource Management Techniques			✓	Develops the concept of optimization in individual to achieve designed goals in engineering.	
24UCS309	CC Lab II: Programming Lab in Data Structures	✓			Using appropriate data structures can help programmers save a good amount of time while performing operations such as storage, retrieval, or processing of data.	2024
24UCS310	CC Lab IV: Programming Lab in Linux	✓			Learning how to navigate the basics of different operating systems demonstrates to employers that you can maneuver any operating system to solve a business problem.	
24UCS411	CC VII: Python Programming	✓			Learning to code in Python requires breaking down complex problems and finding solutions with code. This can help to develop important real-world problem solving and critical thinking skills.	
24UCS412	CC VIII: Relational Database Management Systems			✓	Provide an environment that is both convenient and efficient for users to retrieve and store information.	
24UCS4A1 / 24UCS4A2	GE IV – Allied IV: Accountancy for Decision Making / Financial Accounting			✓	Accounting helps to prepare financial statements that help company leaders and investors to make	

					informed business decisions.	
24UCS413	CC Lab V: Programming Lab in Python	✓			Learning to code in Python requires breaking down complex problems and finding solutions with code. This can help to develop important real-world problem solving and critical thinking skills.	
24UCS414	CC Lab VI: Programming Lab in RDBMS			✓	Provide an environment that is both convenient and efficient for users to retrieve and store information.	
24UCS4S1	SEC II: Naan Mudhalvan: Software Testing using Selenium			✓	Provides hands-on experience in automated software testing using Selenium, improving students' skills in ensuring software quality and reliability through efficient testing practices.	2024
24UCS4S2	SEC II: Naan Mudhalvan: Aptitude for Placements	✓			Aptitude tests help students to assess your strengths and weaknesses and help them understand if you would be a good fit for their organization or not.	
24UCS515	CC IX: Open Source Technologies		✓		Helps to improve their coding skills, gain experience working with others, and build a portfolio of work that demonstrates their abilities.	

24UCS516	CC X: Cyber Security		✓		Solid foundation in the principles of cyber security, in addition to an overview of security across a variety of platforms, programming and development, digital forensic investigation etc.	
24UCS517	CC XI: Software Engineering	✓			Equips students with essential software development and project management skills, enhancing their employability in designing and managing complex software systems.	2024
24UCS5E1	DSE -I: Data Mining and Warehousing	✓			Data mining enable enterprises to predict future trends and make informed business decisions.	
24UCS5E2	DSE -I: Data Engineering with Google Cloud		✓		Capable of using Big data / ML problems using Google Cloud Platform products and services.	
24UCS5E3	DSE -I: Mobile Application Development		✓		Programming language proficiency demonstrates your ability to use the languages to build functional mobile applications.	
24UCS5S1	CC Lab VII: Programming Lab in .NET	✓			.NET facilitates rapid development and connections between client-side development and backend development	
24UCS518	CC Lab VIII: Programming Lab in PHP & MySQL		✓		Helps to improve their coding skills, gain experience	

					working with others, and build a portfolio of work that demonstrates their abilities.	
24UCS5AL	ALC – I: Cloud Computing		✓		Helps to learn how it is used as a way of virtualizing a company's IT infrastructure, allowing employees to connect to their data from any location.	
24UCS619	Core XI: R Programming			✓	R helps Data Analysts and Data Scientists perform many data-related tasks, such as data storage and data analysis, and can be used to create customized dashboards and data visualizations.	
24UCS6E4	DSE–II: Artificial Intelligence and Machine Learning	✓			AI-powered tools can be used for analyzing, reasoning and learning	
24UCS6E5	DSE–II: Web Development Essentials with Angular, React and Node.js		✓		Focus on fundamental web technologies like HTML, CSS, and JavaScript, leading to an in-depth exploration of React and its functionalities for building dynamic user interfaces.	2024
24UCS6E6	DSE–II: MongoDB		✓		Helps to know the foundational steps of creating an effective data model in MongoDB.	
24UCS6E7	DSE–III: Information Retrieval			✓	Describe hands-on experience store, and	

					retrieve information from www using semantic approaches.	
24UCS6E8	DSE-III: Javascript and JQuery for Web Designing			✓	Understanding how the styles influence the display of a web page.	2024
24UCS6E9	DSE-III: Big Data Analytics			✓	Helps to build scalable server-side applications by using JavaScript as a server-side programming language.	2024
24UCS620	CC Lab IX: R Programming Lab			✓	R helps Data Analysts and Data Scientists perform many data-related tasks, such as data storage and data analysis, and can be used to create customized dashboards and data visualizations	
24UCS621	CC Lab X: Programming Lab in Android		✓		Helps the learners acquire a fundamental understanding of Android programming and its various components in detail.	
24UCS622	Project		✓		Project - based learning is an opportunity for students to critique and revise their approach when they encounter obstacles.	
24UCS5S1	SEC III: Data Visualization using Tableau			✓	Develops skills in creating interactive and insightful visualizations with Tableau, enhancing	2024

					data presentation and analysis capabilities.	
24UCS5S2	SEC III: DevOps Foundation	✓			Increases an organization's ability to deliver applications and services at high velocity	



HoD

Head of the Department
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NGM College, Pollachi - 642 001



PRINCIPAL

Dr. R. MUTHUKUMARAN,
M.A.,M.Phil.,B.Ed.,Ph.D.,
PRINCIPAL
N.G.M. College, Pollachi - 642 001
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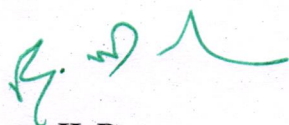
Percentage of Revision of B.Sc., Computer Science Syllabus under Regulation 2024

COMPUTER SCIENCE							
S.No	Course Code	Course Title	Change Details	% of Changes	Content Deleted	Content Updated	Reason for Change
1	24UCS101	CC I: C++ Programming	-	100%	-	-	Feedback from Faculty
2	24UCS103	CC Lab I: Programming Lab in C++	-	100%	-	-	Feedback from Faculty
3	24UCS2A1	GE II – Allied II: Vedic and Discrete Mathematics	Unit I & II – Full Change Unit III & IV – Half Change	40%	Formal languages: Basic definitions - phase structure grammar - types of phase structure grammar -Worked examples Fuzzy Sets: Fuzzy sets – Crisp Sets – Overview of Operations on fuzzy sets – Fuzzy complement – Fuzzy union – Fuzzy Intersection – Aggregation operations.	Vedic Mathematics - What is Vedic Mathematics? – Use of Vedic Mathematics – Addition - Vedic Method for Addition - Completion of a base number in the multiple of 10- pair of numbers doesn't form a base (multiple of 10)and one more than the previous one – Subtraction – Nikhilam Navatashcaramam Dashatah (All from 9 and last from 10)- Digit Separator Method for Subtraction – Square – Cube. Multiplication - Vedic Multiplication – All from 9 and last from 10-to proportionately - one less than the previous – the sum of unit and ten's digit at multiplicand and multiplier is 100 - Sum of left two digits is equal to 10 - process of vertical and cross-wise multiplication.	Suggested by CDC and Subject Expert

						Division – Introduction – Nikhilam(All from nine and last from 10) - Transpose and Apply –Division by UrdhvaTiryag and Dhwajanka(straight division) method	
5	24UCS2S2	SEC I: Data Analysis using Excel	-	100%	-	-	Suggested by CDC and Subject Expert
6	24UCS307	CC V: Data Structures	-	100%	-	-	Suggested by Subject Expert
7	24UCS309	CC Lab III: Programming Lab in Data Structures	-	100%	-	-	Suggested by Subject Expert
8	24UCS4S1	SEC II: Naan Mudhalvan: Software Testing using Selenium	-	100%	-	-	Suggested by Subject Expert
9	24UCS515	CC IX: Open Source Technologies	Unit I & II – Newly Added	40%	Optimizing and Tuning MySQL: Building an Optimized Platform, Benchmarking Your Database Server- MySQL Startup Options, Optimizing Your Table Structure- Optimizing Your Queries-Using the FLUSH Command- Using the SHOW Command. Working with Arrays: Arrays:- Creating Arrays- Some Array-Related Constructs and Functions	HTML: Introduction- SGML-DTD-DTD Elements-Attributes- Outlines of and HTML document- HEADSECTION- Prologue-Link-Basis- Meta-Script-Style- BODYSECTION- Headers-paragraphs- Text Formatting- Linking-Embedding Images-Lists-Tables- Frames-Other Special Tags and Characters- HTML Forms. Dynamic HTML (DHTML): Introduction- Cascading Style Sheet (CSS)-Coding CSS. Properties of Tags-Property Values-Other Style Properties-Inline Style Sheets- Embedded Style	Suggested by CDC and Subject Expert

						Sheets-External Style Sheets-Grouping- Inheritance.	
10	24UCS517	CC XI: Software Engineering	-	100%	-	-	Suggested by CDC and Subject Expert
11	24UCS6E5	Web Development Essentials with Angular, React and Node.js	Combined the Two Courses 23UCS6E5 - FrontEnd Developme nt with React and 23UCS6E9 - Angular and NodeJS 50% reduction made in two Courses	100%	Database Connectivity Promises, Express.js, Database Connectivity – Connecting to RDBMS and NoSQL database, Performing CRUD operations Dependency Injection, Services ,Routing and Navigation What is dependency injection?, Using dependency injection, Angular JS service – Understanding services , Using built-in service, Creating custom service, Injecting dependency in service, Routing – What is Routing?, Routing using ngRoute and UIRouter, ngView Directive, Configuring \$routeProvider ,\$stateProvider, Animating Angular App	-	Suggested by CDC and Subject Expert
12	24UCS6E8	Java script and JQuery for Web Designing	Removed Unit I & II		HTML : Introduction – Getting started – Creating and saving an HTML document – Document Layout of HTML Page – HTML elements – Some other formatting Styles –	JavaScript Operators: Understanding the Operator Types - Understanding Arithmetic Operators - Understanding Assignment Operators - Understanding Comparison	Suggested by CDC and Subject Expert

					Hypertext Links.CSS: CSS syntax and Style-Class Selectors-Id – Selectors-Cascading-Style attribute-Style Container-CSS Properties-Color-Font-Text-Border-Element Box-Padding Property-Margin Property. HTML Tables and CSS Layout: Table Elements-Formatting a Data Table- CSS Pseudo class Selectors- thead and tbody elements-Cell spanning-Web Accessibility – CSS Display properties with Table values-Links and Images: Introduction- a Element-Relative URLs-index.html file-webdesign-Navigation within a Webpage- CSS for Links-img element.	Operators - Understanding Order of Operations Defining Conditional Statements - What Is a Conditional Statement? Why Conditional Statements Are Useful - Using Conditional Statements - Using if/else Statements - Using the switch Statement -Using the Conditional Operator - User Input from a Prompt. Objects: Defining Objects - Creating Objects – Naming - Single Objects - Object Structures - Constructor Functions - Using Prototypes - The class Keyword - Helpful Statements for Objects - The for- in Loop - The with Statement - Understanding Predefined JavaScript Objects - The Navigator Object - The History Object	
	24UCS6E9	Big Data Analytics	-	100%	-	-	Suggested by Subject Expert
	24UCS6S1	SEC IV: Data Visualization using Tableau	-	100%	-	-	Suggested by Faculty



HoD

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PRINCIPAL

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PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District