NEW HORIZON
COLLEGE OF ENGINEERING
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC
Accredited by NAAC with 'A' Grade, Accredited by NBA
New Horizon Knowledge Park, Ring Road, Bellandur Post, Bengaluru 560 103

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

11th Board of Studies Meeting

Minutes of Meeting

Academic Year 2025-26

Head of the Department
Department of Master of Computer Applications
NEW HORIZON COLLEGE OF ENGINEERING
Ring Road, Bellandur Post, Bengaluru - 560 103

Chandhi 1/9/25

Venue: B-308, Sardar Vallabhbhai Patel Block

Date: 23rd August 2025

Time: 11:00 AM – 1:30 PM

CONTENTS

CONSTITUTION OF THE BOARD OF STUDIES AY: 2025-26

S.No.	Academic Board	Structure/Constitution	Functions/Responsibilities	Frequency of Meetings
1	BOS	BOS Constituted with • Head of the Department as Chairman • Faculty members at different level with different specialization • Subject experts from outside the college nominated by academic council • Academic Expert from outside the college nominated by VTU • Representatives from Industry / Corporate sector / allied area related to placements, nominated by academic council • Post Graduate meritorious alumni nominated by Principal • Co-opted members with academic & research expertise.	• Recommendation and approval of curriculum-Scheme and Syllabus • Suggestions for incorporating new technologies /course • Removal of obsolete topics • To bridge the gap between industry and academia with supportive instructions and relevance • Validation and approval of course objectives and outcomes • Module-wise recommendation/ discussion/ suggestion for each proposed course of curriculum • Recommendations and approval of rubrics for evaluation.	Once in a year

BOS CHAIRMAN

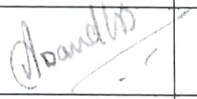
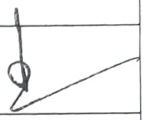
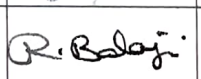
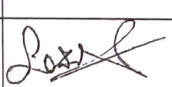
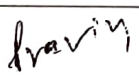
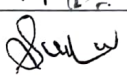
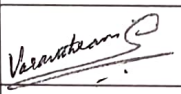
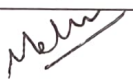
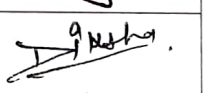
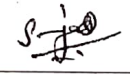
Head of the Department
Department of Master of Computer Applications
NEW HORIZON COLLEGE OF ENGINEERING
Ring Road, Bellandur Post, Bengaluru - 560 103

LIST OF MEMBERS - BOARD OF STUDIES AY: 2025-26

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

S.No	Category	Name
1	***Chairperson – BOS***	Dr. V. Asha, Professor & Head, Department of MCA, New Horizon College of Engineering (NHCE), Bengaluru.
2	***Special Invitees***	Dr. Manjunatha B Head of the Institution, NHCE, Bengaluru.
		Dr. R.J. Anandhi, Dean Academics, NHCE, Bengaluru.
3	***Subject Experts from outside the College nominated by Academic Council (VTU Nominee)***	Dr. Balaji Rajendran, Associate Director, C-DAC, Bengaluru.
4	***Representative from Industry/ Corporate Sector / allied area relating to placements nominated by Academic Council***	Mr. Pravin Kumar Sinha Lead Data Engineer, VISA, Bengaluru.
		Mr. Vasanthram S, Sr. Program Manager, ARYAKA Networks, Bengaluru.
5	***Postgraduate meritorious alumnus nominated by Principal***	Mr. Vipul Kumar, Sr. Consultant Engineer, Open Text, Bengaluru.
		Mr. Melvin Vincent, Senior Customer Support Engineer, Azul Inc. Bengaluru.
6	***Subject Experts from outside the College nominated by Academic Council***	Prof. Lakshminarayana, Associate Professor, Department of MCA, BMS College of Engineering, Bengaluru.
7	***Faculty members at different levels with different specializations***	Dr. Arpana Prasad
		Prof. S. P. Sreeja
		Dr. B Nithya Ramesh
		Dr. M T Vasumathi
		Dr. Mithili Devi
8	***Co-opted member***	Prof. S.P. Sreeja
		Mr. M. Govindaraj
		Dr N S Sukanya
		Prof. A. Kalaivani
		Prof. J Sathya
		Dr. Priya Thomas
		Ms. Diksha Dhiman
		Mr. Suraj Gowda

LIST OF MEMBERS PRESENT

S.NO	NAME	SIGNATURE	S.NO	NAME	SIGNATURE
1	Dr. V. Asha		11	Dr. B Nithya Ramesh	
2	Dr. R.J. Anandhi		12	Dr. M T Vasumathi	
3	Dr. Balaji Rajendran		13	Dr. Mithili Devi	
4	Prof. Lakshminarayana		14	Prof. M. Govindaraj	
5	Mr. Pravin Kumar Sinha		15	Prof. N S Sukanya	
6	Mr. Vasanthram S		16	Prof. A Kalaivani	
7	Mr. Vipul Kumar		17	Prof. J Sathya	
8	Mr. Melvin Vincent		18	Prof. Priya Thomas	
9	Dr. Arpana Prasad		19	Prof. Diksha Dhiman	
10	Prof. S.P. Sreeja		20	Prof. Suraj C Gowda	

WELCOME ADDRESS AND INTRODUCTION OF THE MEMBERS

The 11th Board of Studies (BoS) Meeting for the Department of Master of Computer Applications was convened on 23rd August 2025 at 11:00 AM in the Department. The meeting commenced with a warm and cordial welcome by the Chairperson, Dr. V. Asha, Professor and Head of the Department of MCA. Dr. Asha greeted all the members of the Board and extended her appreciation for their valuable time and contribution towards academic excellence. She also introduced the distinguished invitees and members who had joined the deliberations.

The Chairperson extended a special welcome to the VTU Nominee, Dr. Balaji Rajendran, Associate Director, C-DAC, Bengaluru, whose vast expertise and academic insights have been instrumental in strengthening curriculum design and industry relevance. She expressed her gratitude for his continued support and for gracing the meeting with his presence. Further, Dr. Asha warmly welcomed the external academic subject expert, Prof. Lakshminarayana from the Department of MCA, BMS College of Engineering, Bengaluru, acknowledging his academic acumen and constructive suggestions that enrich the department's curriculum framework. She also placed on record her appreciation to the industrial nominees, Mr. Pravin Kumar Sinha from VISA, Bengaluru and Mr. Vasanthram S from ARYAKA Networks, whose industry-oriented perspectives bridge the gap between academic learning and practical application. She acknowledged their efforts in contributing to shaping a curriculum that meets the evolving needs of the IT industry despite their demanding professional schedules. She also welcomed the alumni representatives, Mr. Vipul Kumar and Mr. Melvin Vincent, whose valuable feedback as industry professionals and former students provides a unique dimension to curriculum enrichment. Dr. Asha extended her greetings to all internal BoS members, thanking them for their constant involvement in departmental growth.

After the formal welcome and acknowledgments, the Chairperson sought the permission of the Board to present the agenda of the 11th Board of Studies meeting, which included discussions on curriculum refinement, inclusion of emerging technologies, integration of skill-based and industry-aligned courses, and enhancement of student learning outcomes.

With the active participation of all members, the meeting progressed into meaningful deliberations aimed at strengthening the academic structure of the MCA program and aligning it with the vision of the institution and industry expectations.

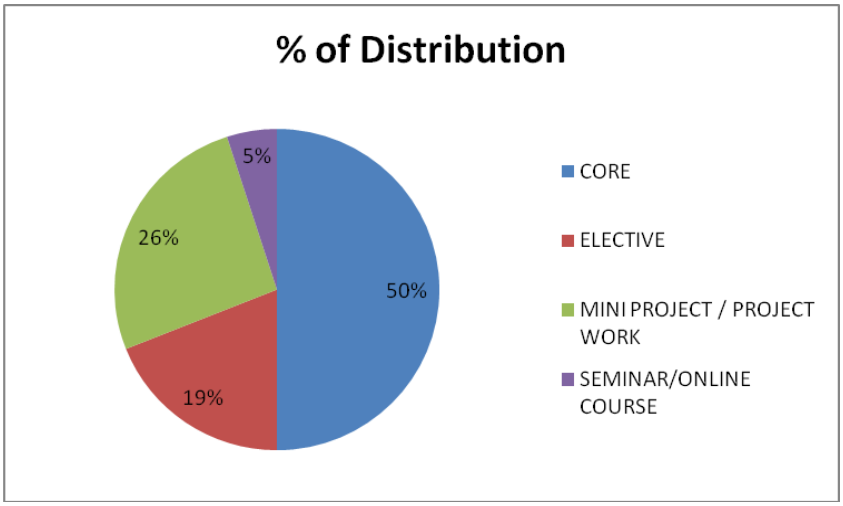
AGENDA 1: HIGHLIGHTS OF THE MCA PROGRAMME

- Academic Excellence
- Technically Strong Curriculum
- Integrated Professional Core Courses
- Lab Based Electives
- Credited and Non-Credited MOOC Courses
- Industry–Academia Collaboration
- Platforms to Showcase Technical Expertise
- Creativity and Innovation Focus
- Experienced Faculty Resources
- Advanced Learning Infrastructure
- Value-Added Professional Programs in Emerging Technologies

AGENDA 2: PROPOSED SCHEME AND SYLLABUS FOR THE AY: 2025-26, BATCH: 2024-26

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
MCA DEGREE CURRICULUM – COURSE CREDIT STRUCTURE
BATCH: 2024-26: SEMESTER I TO IV

SEMESTER	CORE	ELECTIVE	MINI PROJECT / PROJECT WORK	SEMINAR/ ONLINE COURSE	TOTAL CREDITS
I	20	0	0	0	20
II	12	6	2	0	20
III	8	3	9	0	20
IV	0	6	10	4	20
TOTAL	40	15	21	4	80
% of Distribution	50%	19%	26%	5%	100%



DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FIRST SEMESTER MCA PROGRAM
BATCH: 2024-26

S NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY (THEORY)	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	AS/BSC	24MATC11	COMPUTATIONAL MATHEMATICS	MCA	2	1	0	0	3	4	50	50	100
2	MCA/PCC	24MCA12	PROBLEM SOLVING WITH C	MCA	3	0	0	0	3	3	50	50	100
3	MCA/PCC	24MCA13	OBJECT ORIENTED PROGRAMMING WITH JAVA	MCA	3	0	0	0	3	3	50	50	100
4	MCA/PCC	24MCA14	COMPUTER NETWORKS	MCA	3	0	0	0	3	3	50	50	100
5	MCA/IPCC	24MCA15	LINUX OPERATING SYSTEM AND SHELL SCRIPTING	MCA	2	0	1	0	3	4	50	50	100
6	MCA/IPCC	24MCA16	DATABASE MANAGEMENT SYSTEMS	MCA	2	0	1	0	3	4	50	50	100
7	MCA/PCCL	24MCAL17	PROGRAMMING WITH C LAB	MCA	0	0	1	0	1	3	50	50	100
8	MCA/PCCL	24MCAL18	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	MCA	0	0	1	0	1	3	50	50	100
9	AS/NCMC	24MATC19	FOUNDATION MATHEMATICS FOR COMPUTER APPLICATIONS *	MCA	-	-	-	-	-	3	50	-	50
TOTAL					15	1	4	0	20	27	400	400	800

Note: **BSC** – Basic Science Courses, **PCC** - Professional Core Courses,
IPCC - Integrated Professional Core Courses, (No SEE for lab component, only CIE), **PCCL** - Professional Core Course Lab
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

Research Methodology and IPR Online Course should be mandatorily taken by the students anytime during the program,
However the marks will be included in 4th semester. Students have to qualify it for the award of master's degree
*Bridge Course : Non-Credit Mandatory Course 24MATC19- Foundation Mathematics for Computer Applications : Students who have not taken Mathematics at the 10+2 or degree level are required to study and pass this course in the 1st semester.
However, this course/ subject will not be considered for vertical progression.

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF SECOND SEMESTER MCA PROGRAM
BATCH: 2024-26

S NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY (THEORY)	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	MCA/PCC	24MCA21	DATA STRUCTURES	MCA	3	0	0	0	3	3	50	50	100
2	MCA/PCC	24MCA22	ADVANCED JAVA	MCA	3	0	0	0	3	3	50	50	100
3	MCA/PCC	24MCA23	DESIGN AND ANALYSIS OF ALGORITHMS	MCA	3	0	0	0	3	4	50	50	100
4	MCA/PEC	24MCA24X	PROFESSIONAL ELECTIVES-1	MCA	3	0	0	0	3	3	50	50	100
5	MCA/PEC	24MCA25X	LAB BASED PROFESSIONAL ELECTIVES-1	MCA	0	1	2	0	3	6	50	50	100
6	MCA/PCCL	24MCAL26	DATA STRUCTURES AND ALGORITHMS LAB	MCA	0	0	1.5	0	1.5	3	50	50	100
7	MCA/PCCL	24MCAL27	ADVANCED JAVA LAB	MCA	0	0	1.5	0	1.5	3	50	50	100
8	MCA/AEC	24MCA28	MINI PROJECT	MCA	0	0	0	2	2	-	50	50	100
			TOTAL		12	1	5	2	20	25	400	400	800

Note: **PCC** - Professional Core Courses, **PEC** – Professional Elective Course, **PCCL** - Professional Core Course Lab,
AEC- Ability Enhancement Course
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

*Research Methodology and IPR Online Course should be mandatorily taken by the students anytime during the program, However the marks will be included in 4th semester. Students have to qualify it for the award of master's degree.
AEC- Students are required to select topics such as ERP, R Programming, Scripting Languages, Web Development Applications, etc. Students must develop a small prototype based on their chosen topic and demonstrate it.
A one-week intensive communication skills training program will be scheduled during the vacation.

	PROFESSIONAL ELECTIVES-1							
SNO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	24MCA241	CLOUD COMPUTING	MCA	3	0	0	0	3
2	24MCA242	CYBER SECURITY AND CYBER LAW	MCA	3	0	0	0	3
3	24MCA243	CRYPTOGRAPHY AND NETWORK SECURITY	MCA	3	0	0	0	3
4	24MCA244	ARTIFICIAL INTELLIGENCE	MCA	3	0	0	0	3
5	24MCA245	SOFTWARE ENGINEERING AND TESTING	MCA	3	0	0	0	3

LAB BASED PROFESSIONAL ELECTIVES-1								
SNO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	24MCA251	BUSINESS INTELLIGENCE AND DATA ANALYTICS	MCA	0	1	2	0	3
2	24MCA252	MOBILE APPLICATION DEVELOPMENT	MCA	0	1	2	0	3
3	24MCA253	COMPETITIVE PROGRAMMING WITH PYTHON	MCA	0	1	2	0	3
4	24MCA254	NON RELATIONAL DATABASES (NoSQL) WITH MongoDB	MCA	0	1	2	0	3
5	24MCA255	ASP.NET WITH C#	MCA	0	1	2	0	3

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF THIRD SEMESTER MCA PROGRAM
BATCH: 2024-26, AY: 2025-26

SL NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY (THEORY)	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	MCA/IPCC	24MCA31	MACHINE LEARNING	MCA	3	0	1	0	4	6	50	50	100
2	MCA/IPCC	24MCA32	WEB DEVELOPMENT USING FULL STACK	MCA	3	0	1	0	4	6	50	50	100
3	MCA/PEC	24MCA33X	PROFESSIONAL ELECTIVES - 2	MCA	3	0	0	0	3	4	50	50	100
4	MCA/PROJ	24MCA34	PROJECT WORK	MCA	0	0	0	9	9	18	50	50	100
TOTAL					9	0	2	9	20	34	200	200	400

Note: **IPCC** - Integrated Professional Core Courses, (No SEE for lab component, only CIE),
PEC– Professional Elective Course, **PROJ-** Project Work
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

PROFESSIONAL ELECTIVES – 2								
SL NO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	24MCA331	DATA SCIENCE	MCA	3	0	0	0	3
2	24MCA332	ETHICAL HACKING	MCA	3	0	0	0	3
3	24MCA333	AUGMENTED REALITY AND VIRTUAL REALITY	MCA	3	0	0	0	3
4	24MCA334	INTERNET OF THINGS	MCA	3	0	0	0	3
5	24MCA335	UI/UX DESIGN	MCA	3	0	0	0	3

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FOURTH SEMESTER MCA PROGRAM
BATCH: 2024-26, AY: 2025-26

SL NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	MCA/PEC	24MCA41X	PROFESSIONAL ELECTIVES –3	MCA	3	0	0	0	3	3	50	50	100
2	MCA/PEC	24MCA42X	LAB BASED PROFESSIONAL ELECTIVES - 2	MCA	0	1	2	0	3	6	50	50	100
3	MCA/TS	24MCA43	TECHNICAL SEMINAR	MCA	0	0	0	2	2	4	50	50	100
4	AUD/AEC	24AUD44X	ONLINE COURSE		-	-	-	-	2	-	-	-	100
5	AUD/NCMC*	24AUD45	RESEARCH METHODOLOGY AND IPR		Classes and evaluation procedures are as per the policy of the online course providers.								PP
6	MCA/INT	24MCA46	INTERNSHIP	MCA	0	0	0	10	10	20	50	50	100
			TOTAL		3	1	2	12	20	33	200	200	500

Note: **PEC**– Professional Elective Course, **TS -**Technical Seminar, **INT –** Internship, NCMC-Non Credit Mandatory Course *(Online Course) **AUD/AEC –** Audit Course/ Ability Enhancement Course.
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

PROFESSIONAL ELECTIVES – 3								
SL NO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	24MCA411	AI ETHICS	MCA	3	0	0	0	3
2	24MCA412	DIGITAL FORENSICS	MCA	3	0	0	0	3
3	24MCA413	DESIGN THINKING AND INNOVATION	MCA	3	0	0	0	3
4	24MCA414	DIGITAL MARKETING	MCA	3	0	0	0	3
5	24MCA415	AGILE SOFTWARE DEVELOPMENT	MCA	3	0	0	0	3

LAB BASED PROFESSIONAL ELECTIVES -2								
SNO	**COURSE CODE**	**COURSE**	**BOS**	**CREDIT DISTRIBUTION**				**TOTAL**
				L	**T**	**P**	**S**	
1	24MCA421	CLOUD SERVICES MANAGEMENT	MCA	0	1	2	0	3
2	24MCA422	DEVOPS	MCA	0	1	2	0	3
3	24MCA423	BIG DATA ANALYTICS USING HP VERTICA	MCA	0	1	2	0	3
4	24MCA424	SOFTWARE TESTING USING SELENIUM	MCA	0	1	2	0	3
5	24MCA425	BLOCKCHAIN	MCA	0	1	2	0	3

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FIRST SEMESTER MCA PROGRAM
BATCH: 2025-27, AY: 2025-26

SL NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY (THEORY)	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	AS/BSC	25MATC11	COMPUTATIONAL MATHEMATICS	MCA	2	1	0	0	3	4	50	50	100
2	MCA/PCC	25MCA12	PROBLEM SOLVING WITH C	MCA	3	0	0	0	3	4	50	50	100
3	MCA/PCC	25MCA13	OBJECT ORIENTED PROGRAMMING WITH JAVA	MCA	3	0	0	0	3	4	50	50	100
4	MCA/PCC	25MCA14	COMPUTER NETWORKS	MCA	3	0	0	0	3	4	50	50	100
5	MCA/IPCC	25MCA15	LINUX OPERATING SYSTEM AND SHELL SCRIPTING	MCA	2	0	1	0	3	5	50	50	100
6	MCA/IPCC	25MCA16	DATABASE MANAGEMENT SYSTEMS	MCA	2	0	1	0	3	5	50	50	100
7	MCA/PCCL	25MCAL17	PROGRAMMING WITH C LAB	MCA	0	0	1	0	1	3	50	50	100
8	MCA/PCCL	25MCAL18	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	MCA	0	0	1	0	1	3	50	50	100
9	AS/NCMC	25MATC19	FOUNDATION MATHEMATICS FOR COMPUTER APPLICATIONS *	MCA	-	-	-	-	-	3	50	-	50
			TOTAL		15	1	4	0	20	35	400	400	800

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However, this course will not be considered for vertical progression.

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF SECOND SEMESTER MCA PROGRAM
BATCH: 2025-27, AY: 2025-26

SL NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY (THEORY)	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	MCA/PCC	25MCA21	DATA STRUCTURES	MCA	3	0	0	0	3	4	50	50	100
2	MCA/PCC	25MCA22	ADVANCED JAVA	MCA	3	0	0	0	3	4	50	50	100
3	MCA/PCC	25MCA23	DESIGN AND ANALYSIS OF ALGORITHMS	MCA	3	0	0	0	3	4	50	50	100
4	MCA/PEC	25MCA24X	PROFESSIONAL ELECTIVES-1	MCA	3	0	0	0	3	4	50	50	100
5	MCA/PEC	25MCA25X	LAB BASED PROFESSIONAL ELECTIVES-1	MCA	0	1	2	0	3	6	50	50	100
6	MCA/PCCL	25MCAL26	DATA STRUCTURES AND ALGORITHMS LAB	MCA	0	0	1.5	0	1.5	3	50	50	100
7	MCA/PCCL	25MCAL27	ADVANCED JAVA LAB	MCA	0	0	1.5	0	1.5	3	50	50	100
8	MCA/AEC	25MCA28	MINI PROJECT	MCA	0	0	0	2	2	-	50	50	100
TOTAL					12	1	5	2	20	28	400	400	800

Note: **PCC** - Professional Core Courses, **PEC** – Professional Elective Course, **PCCL** - Professional Core Course Lab,
AEC- Ability Enhancement Course
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

PROFESSIONAL ELECTIVES-1								
SL NO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	25MCA241	CLOUD COMPUTING	MCA	3	0	0	0	3
2	25MCA242	CYBER SECURITY AND CYBER LAW	MCA	3	0	0	0	3
3	25MCA243	CRYPTOGRAPHY AND NETWORK SECURITY	MCA	3	0	0	0	3
4	25MCA244	ARTIFICIAL INTELLIGENCE	MCA	3	0	0	0	3
5	25MCA245	SOFTWARE ENGINEERING AND TESTING	MCA	3	0	0	0	3

LAB BASED PROFESSIONAL ELECTIVES-1								
SL NO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	25MCA251	BUSINESS INTELLIGENCE AND DATA ANALYTICS	MCA	0	1	2	0	3
2	25MCA252	MOBILE APPLICATION DEVELOPMENT	MCA	0	1	2	0	3
3	25MCA253	COMPETITIVE PROGRAMMING WITH PYTHON	MCA	0	1	2	0	3
4	25MCA254	NON RELATIONAL DATABASES (NoSQL) WITH MongoDB	MCA	0	1	2	0	3
5	25MCA255	ASP.NET WITH C#	MCA	0	1	2	0	3

NHCE MCA CREDIT DISTRIBUTION IN COMPARISON WITH VTU

S. No	Course Category	VTU Breakup of Credits (80)	NHCE Breakup of Credits (80)
1	Professional Core Courses (PCC, BSC, PCCL)	32	26
2	Professional Elective Courses (PEC)	9	15
3	Mini Project/ Project Work / Seminar	17	13
4	Internship	11	10
5	Online Courses	3	2
6	Integrated Professional Core Course (IPCC)	8	14
7	Bridge Course (BC) *(One NCMC, No Credits)*	(One NCMC – Foundations in Mathematics)	(One NCMC – Foundations in Mathematics)

AGENDA 3: SALIENT FEATURES OF THE SYLLABUS-AY: 2025-26

Comprehensive Core & Foundation Knowledge

- Subjects such as Problem Solving with C, Object-Oriented Programming with Java, Computer Networks, Data Structures, Database Management Systems, Advanced Java, and Design and Analysis of Algorithms.
- Strengthens problem analysis, logical thinking, modern tool usage, and solution development skills.

Strong Computational Foundation

- Computational Mathematics offered in Semester I.
- Bridge Course in Foundation Mathematics designed specifically for Computer Applications.

Lab Based Electives, Hands-on and Practical Exposure

- Core Laboratories integrated with major subjects.
- Professional Core Courses with practical components.
- Lab-Based Electives in Semester II and Semester IV for advanced skill-building.

Credit Distribution – Theory vs Lab

- Theory Courses: 42 credits out of 80 (53%).
- Practical / Lab, Seminar, Project & Internship Courses: 36 credits out of 80 (45%) and MOOC (2%)
- Curriculum designed to provide a balanced mix of theory and practice.

Industry-Ready Skills & Trending Technologies

- Training in Full Stack Development, Mobile Application Development, UI/UX, Agile Software Development, Software Testing (Manual and Automated).
- Focus on Design Thinking and Innovation to enhance problem-solving and creativity.

Project–Based Learning

- Mini Project in Semester II to encourage early application of concepts.
- Project Work in Semester III with faculty guidance.
- Internship in Semester IV for industry exposure and practical implementation.

Professional Development, Value Addition & Lifelong Learning

- Technical Seminar in Semester IV to improve communication, research, and presentation skills.
- Two MOOC Courses:
    - One credited MOOC course (aligned with curriculum).
    - One Non-Credit MOOC (NCMC) for additional skill enhancement.

AGENDA 4: CO, PO, CREDIT AND RBT LEVELS REQUIREMENTS AND MAPPING VERIFICATION

S. No	Graduate Attributes	Program Outcomes (POs)
1.	**PO1:** Foundation knowledge	Apply knowledge of mathematics, programming logic and coding fundamentals for solution architecture and problem solving.
2.	**PO2:** Problem Analysis	Identify, review, formulate and analyze problems primarily focusing on customer requirements using critical thinking frameworks.
3.	**PO3:** Development of Solutions	Design, develop and investigate problems with an innovative approach for solutions incorporating ESG/SDG goals.
4.	**PO4:** Modern Tools Usage	Select, adapt and apply modern computational tools such as development of algorithms with an understanding of the limitations including human biases.
5.	**PO5:** Individual and Teamwork	Function and communicate effectively as an individual or a team leader in diverse and multidisciplinary groups. Use methodologies such as agile.
6.	**PO6:** Project Management and Finance	Use the principles of project management such as scheduling, work breakdown structure and be conversant with the principles of Finance for profitable project management.
7.	**PO7:** Ethics	Commit to professional ethics in managing software projects with financial aspects. Learn to use new technologies for cyber security and insulate customers from malware.
8.	**PO8:** Life-long Learning	Change management skills and the ability to learn, keep up with contemporary technologies and ways of working.

The **Program Outcomes (POs)** are mapped to the **Course Outcomes (COs)** of each course using a **CO-PO table**. The correlation values of 3, 2, and 1 represent the degree of alignment between COs and POs, with the following labels: **High (3)**, **Medium (2)**, and **Low (1)**.

The **Course Outcomes (COs)** are articulated using the **Revised Bloom's Taxonomy (RBT)** levels to ensure their effective attainment. The course outcomes are defined across cognitive levels, ranging from **Level 1 to Level 6**, as follows:

- **Level 1** – Remember
- **Level 2** – Understand
- **Level 3** – Apply
- **Level 4** – Analyze
- **Level 5** – Evaluate
- **Level 6** – Create

The **CO-PO mapping** for each course has been thoroughly verified by both the faculty members and expert members of the Board of Studies (BoS). NHCE MCA Credit Distribution in Comparison with VTU as given in Table below was also discussed.

AGENDA 5: SUGGESTIONS AND RECOMMENDATIONS OF THE BOS MEMBERS

1. Integration of MOOC Courses
   - The board suggested students complete the certification requirements for MOOC courses in Semester I and Semester II.
   - Each MOOC course must have a minimum duration of 8 weeks or 30 hours to qualify for 2 credits.
   - Students must be encouraged to take up MOOC courses related to Artificial Intelligence.

2. Inclusion of Artificial Intelligence Courses
   - The board appreciated the inclusion of Artificial Intelligence-related courses in the curriculum, highlighting courses such as:
     - Artificial Intelligence as an Elective in Semester II,
     - Machine Learning as a Core course in Semester III,
     - Data Science as Elective in Semester III,
     - AI Ethics in Semester IV.
   - The board suggested incorporating course related to Artificial Intelligence either as MOOC courses or as part of Alternate Assessments within core courses.
   - The board recommended that students undertaking projects must:
     - Demonstrate code generation using AI tools, and
     - Be made aware of AI-driven strategies.

3. Use of Emerging Tools
   - The board recommended encouraging students to use platforms such as Claude and Perplexity, which:
     - Provide solutions, and
     - Highlight sources of code and references, thereby enhancing learning transparency.

4. Alternate Assessments

   The board suggested incorporating usage of Artificial Intelligence wherever applicable in conducting alternate assessments.

The finalized scheme and syllabus for Semester III and IV of AY 2025-26 is prepared considering the above recommendations to align with the VTU guidelines and industry requirements. Based on the recommendations of the Board, the following Scheme and Syllabus for the Academic Year 2025-26 Batch 2024-26, Semesters III & IV and Batch 2025-27, Semester I & II have been finalized.

APPROVED SCHEME & SYLLABUS
AY: 2025-26 BATCH 2024-26

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF THIRD SEMESTER MCA PROGRAM AY: 2025-26

SL NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY (THEORY)	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	MCA/IPCC	24MCA31	MACHINE LEARNING	MCA	3	0	1	0	4	6	50	50	100
2	MCA/IPCC	24MCA32	WEB DEVELOPMENT USING FULL STACK	MCA	3	0	1	0	4	6	50	50	100
3	MCA/PEC	24MCA33X	PROFESSIONAL ELECTIVES - 2	MCA	3	0	0	0	3	4	50	50	100
4	MCA/PROJ	24MCA34	PROJECT WORK	MCA	0	0	0	9	9	18	50	50	100
			TOTAL		9	0	2	9	20	34	200	200	400

Note: **IPCC** - Integrated Professional Core Courses, (No SEE for lab component, only CIE),
PEC– Professional Elective Course, **PROJ-** Project Work
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

PROFESSIONAL ELECTIVES – 2								
SL NO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	24MCA331	DATA SCIENCE	MCA	3	0	0	0	3
2	24MCA332	ETHICAL HACKING	MCA	3	0	0	0	3
3	24MCA333	AUGMENTED REALITY AND VIRTUAL REALITY	MCA	3	0	0	0	3
4	24MCA334	INTERNET OF THINGS	MCA	3	0	0	0	3
5	24MCA335	UI/UX DESIGN	MCA	3	0	0	0	3

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FOURTH SEMESTER MCA PROGRAM AY: 2025-26

SL NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	MCA/PEC	24MCA41X	PROFESSIONAL ELECTIVES –3	MCA	3	0	0	0	3	3	50	50	100
2	MCA/PEC	24MCA42X	LAB BASED PROFESSIONAL ELECTIVES - 2	MCA	0	1	2	0	3	6	50	50	100
3	MCA/TS	24MCA43	TECHNICAL SEMINAR	MCA	0	0	0	2	2	4	50	50	100
4	AUD/AEC	24AUD44X	ONLINE COURSE		-	-	-	-	2	-	-	-	100
5	AUD/NCMC*	24AUD45	RESEARCH METHODOLOGY AND IPR		Classes and evaluation procedures are as per the policy of the online course providers.								PP
6	MCA/INT	24MCA46	INTERNSHIP	MCA	0	0	0	10	10	20	50	50	100
TOTAL					3	1	2	12	20	33	200	200	500

Note: **PEC**– Professional Elective Course, **TS -**Technical Seminar, **INT –** Internship, NCMC-Non Credit Mandatory Course *(Online Course)
AUD/AEC – Audit Course/ Ability Enhancement Course.
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

PROFESSIONAL ELECTIVES – 3								
SL NO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	24MCA411	AI ETHICS	MCA	3	0	0	0	3
2	24MCA412	DIGITAL FORENSICS	MCA	3	0	0	0	3
3	24MCA413	DESIGN THINKING AND INNOVATION	MCA	3	0	0	0	3
4	24MCA414	DIGITAL MARKETING	MCA	3	0	0	0	3
5	24MCA415	AGILE SOFTWARE DEVELOPMENT	MCA	3	0	0	0	3

LAB BASED PROFESSIONAL ELECTIVES -2								
SNO	**COURSE CODE**	**COURSE**	**BOS**	**CREDIT DISTRIBUTION**				**TOTAL**
				L	**T**	**P**	**S**	
1	24MCA421	CLOUD SERVICES MANAGEMENT	MCA	0	1	2	0	3
2	24MCA422	DEVOPS	MCA	0	1	2	0	3
3	24MCA423	BIG DATA ANALYTICS USING HP VERTICA	MCA	0	1	2	0	3
4	24MCA424	SOFTWARE TESTING USING SELENIUM	MCA	0	1	2	0	3
5	24MCA425	BLOCKCHAIN	MCA	0	1	2	0	3

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FIRST SEMESTER MCA PROGRAM
BATCH: 2025-27, AY: 2025-26

SL NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY (THEORY)	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	AS/BSC	25MATC11	COMPUTATIONAL MATHEMATICS	MCA	2	1	0	0	3	4	50	50	100
2	MCA/PCC	25MCA12	PROBLEM SOLVING WITH C	MCA	3	0	0	0	3	4	50	50	100
3	MCA/PCC	25MCA13	OBJECT ORIENTED PROGRAMMING WITH JAVA	MCA	3	0	0	0	3	4	50	50	100
4	MCA/PCC	25MCA14	COMPUTER NETWORKS	MCA	3	0	0	0	3	4	50	50	100
5	MCA/IPCC	25MCA15	LINUX OPERATING SYSTEM AND SHELL SCRIPTING	MCA	2	0	1	0	3	5	50	50	100
6	MCA/IPCC	25MCA16	DATABASE MANAGEMENT SYSTEMS	MCA	2	0	1	0	3	5	50	50	100
7	MCA/PCCL	25MCAL17	PROGRAMMING WITH C LAB	MCA	0	0	1	0	1	3	50	50	100
8	MCA/PCCL	25MCAL18	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	MCA	0	0	1	0	1	3	50	50	100
9	AS/NCMC	25MATC19	FOUNDATION MATHEMATICS FOR COMPUTER APPLICATIONS *	MCA	-	-	-	-	-	3	50	-	50
			TOTAL		15	1	4	0	20	35	400	400	800

Note: **BSC** – Basic Science Courses, **PCC** - Professional Core Courses,
IPCC - Integrated Professional Core Courses, (No SEE for lab component, only CIE), **PCCL** - Professional Core Course Lab
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

Research Methodology and IPR & Credited Online Courses should be mandatorily taken by the students anytime during the program, However the marks will be included in 4th semester. Students have to qualify it for the award of master's degree

*Bridge Course: Non-Credit Mandatory Course 25MATC19 - Foundation Mathematics for Computer Applications - Students who have not taken Mathematics at the 10+2 or degree level are required to study and pass this course in the 1st semester. However, this course will not be considered for vertical progression.

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF SECOND SEMESTER MCA PROGRAM
BATCH: 2025-27, AY: 2025-26

SL NO	BOARD/ COURSE	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	CONTACT HOURS WEEKLY (THEORY)	MARKS		
					L	T	P	S			CIE	SEE	TOTAL
1	MCA/PCC	25MCA21	DATA STRUCTURES	MCA	3	0	0	0	3	4	50	50	100
2	MCA/PCC	25MCA22	ADVANCED JAVA	MCA	3	0	0	0	3	4	50	50	100
3	MCA/PCC	25MCA23	DESIGN AND ANALYSIS OF ALGORITHMS	MCA	3	0	0	0	3	4	50	50	100
4	MCA/PEC	25MCA24X	PROFESSIONAL ELECTIVES-1	MCA	3	0	0	0	3	4	50	50	100
5	MCA/PEC	25MCA25X	LAB BASED PROFESSIONAL ELECTIVES-1	MCA	0	1	2	0	3	6	50	50	100
6	MCA/PCCL	25MCAL26	DATA STRUCTURES AND ALGORITHMS LAB	MCA	0	0	1.5	0	1.5	3	50	50	100
7	MCA/PCCL	25MCAL27	ADVANCED JAVA LAB	MCA	0	0	1.5	0	1.5	3	50	50	100
8	MCA/AEC	25MCA28	MINI PROJECT	MCA	0	0	0	2	2	-	50	50	100
TOTAL					12	1	5	2	20	28	400	400	800

Note: **PCC** - Professional Core Courses, **PEC** – Professional Elective Course, **PCCL** - Professional Core Course Lab,
AEC- Ability Enhancement Course
L – Lecture, **T**- Tutorial, **P**-Practical, **S** - Self Study

AEC- Students are required to select topics such as ERP, R Programming, Scripting Languages, Web Development Applications, etc. Students must develop a small prototype based on their chosen topic and demonstrate it.

PROFESSIONAL ELECTIVES-1								
SL NO	COURSE CODE	COURSE	BOS	CREDIT DISTRIBUTION				TOTAL
				L	T	P	S	
1	25MCA241	CLOUD COMPUTING	MCA	3	0	0	0	3
2	25MCA242	CYBER SECURITY AND CYBER LAW	MCA	3	0	0	0	3
3	25MCA243	CRYPTOGRAPHY AND NETWORK SECURITY	MCA	3	0	0	0	3
4	25MCA244	ARTIFICIAL INTELLIGENCE	MCA	3	0	0	0	3

LAB BASED PROFESSIONAL ELECTIVES-1								
SL NO	**COURSE CODE**	**COURSE**	**BOS**	**CREDIT DISTRIBUTION**				**TOTAL**
				L	**T**	**P**	**S**	
1	25MCA251	BUSINESS INTELLIGENCE AND DATA ANALYTICS	MCA	0	1	2	0	3
2	25MCA252	MOBILE APPLICATION DEVELOPMENT	MCA	0	1	2	0	3
3	25MCA253	COMPETITIVE PROGRAMMING WITH PYTHON	MCA	0	1	2	0	3
4	25MCA254	NON RELATIONAL DATABASES (NoSQL) WITH MongoDB	MCA	0	1	2	0	3
5	25MCA255	ASP.NET WITH C#	MCA	0	1	2	0	3

AGENDA 6: APPROVAL OF SCHEME & SYLLABUS

The Board of Studies members reviewed the revised scheme and syllabus, ensuring that their recommendations and suggestions were appropriately incorporated. Following the review, the members approved the modified draft for final implementation.

AGENDA 7: STAKEHOLDERS FEEDBACK AND CONSIDERATIONS

Feedback and suggestions from students, exit surveys, faculty course feedback, PTM discussions, and external expert members are systematically incorporated into BoS decisions to ensure a well-rounded and complaint-free curriculum.

- **Student Course Feedback:** Collected every academic semester for all individual courses through a feedback link provided by the Library and Information Centre, NHCE.
- **Exit Survey:** Conducted with graduating students as they leave the campus, capturing their reflections on infrastructure, curriculum, placement opportunities, and other facilities.
- **Faculty Course Feedback:** Obtained from faculty members who taught the courses during the academic semester. Inputs regarding the strengths, weaknesses, content, and delivery modes are carefully reviewed and considered.
- **Parent-Teacher Meetings (PTM):** Held twice a year, during the interim periods of odd and even semesters. The faculty coordinator documents the remarks and suggestions received during these meetings, which are then incorporated into BoS decisions.

VOTE OF THANKS

The Chairperson of the Board of Studies (BoS), Dr. V. Asha, consolidated the valuable recommendations proposed by the members after detailed deliberations on curriculum design, industry integration, and student-centric learning approaches. The suggestions were reviewed thoroughly and were unanimously accepted by all members of the Board. It was assured that the approved changes would be implemented in the syllabus and scheme of the Department of MCA for the Academic Year 2025–26, specifically for Semester III and Semester IV. These revisions reflect the commitment of the department to continually enhance the learning framework in alignment with the latest technological advancements and industry expectations. The meeting also highlighted the significance of introducing innovative teaching methodologies, lab-oriented electives, project-based learning, professional value-added programs, and industry–academia collaborations. Members emphasized the need to equip students not only with strong academic foundations but also with practical competencies, creativity, and problem-solving skills that would help them excel in diverse professional domains. The session concluded with a Vote of Thanks proposed by Prof. S. P. Sreeja, Senior Assistant Professor, Department of MCA. She expressed her heartfelt gratitude to the Chairperson, external subject experts, VTU nominee, industry representatives, alumni members, and internal faculty for their active participation and insightful inputs. She acknowledged the efforts of the department in organizing the meeting and appreciated the collaborative spirit of the Board, which has ensured that the MCA program continues to remain academically rigorous and industry-relevant.

With this, the 11th Board of Studies Meeting of the Department of MCA, New Horizon College of Engineering, Bengaluru, formally concluded.

HOD MCA

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