NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

12th Board of Studies Meeting

Minutes of Meeting

Academic Year 2026-27

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

12/7/26

20/7/2026

Venue: *Conference Room, Department of MCA, Sardar Vallabhbhai Patel Block*

Date: *11-07-2026*

Time: *11:00 AM – 1:30 PM*

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CONSTITUTION OF THE BOARD OF STUDIES (2026-27)

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, Bengaluru - 560 103

NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

LIST OF MEMBERS - BOARD OF STUDIES (AY:2026-27)

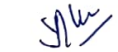
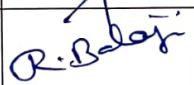
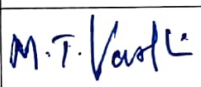
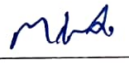
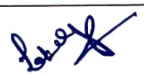
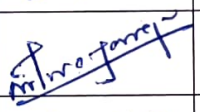
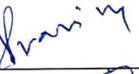
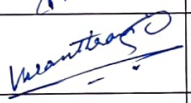
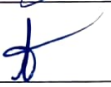
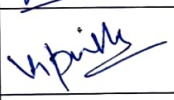
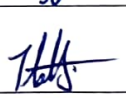
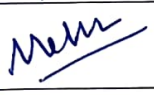
S. No	Category	Nomination of the committee	Name of the person	Designation & Affiliation
1	**Head of the Department**	Chairperson	Dr. V. Asha	Professor & Head, Department of MCA, NHCE
2	**Special Invitees (one academician from Institution of National Eminence: IIT, NIT, IIM, IISc)**	1	Dr. Manjunatha	Principal, NHCE
		2	Dr. R. J. Anandhi	Vice Principal - Academics, NHCE
		3	Dr. Jaidhar C D	Professor, Department of Information Technology, National Institute of Technology, Suratkal.
3	**Faculty members at different level with different specialization**	**Members**		
		1	Dr. Arpana Prasad	Associate Professor
		2	Prof. S.P. Sreeja	Sr. Assistant Professor
		3	Dr. Nithya Ramesh	Associate Professor
		4	Dr. M T Vasumathi	Associate Professor
		5	Dr. Mithili Devi	Associate Professor
4	**Subject experts from outside the College nominated by Academic Council**	**Members**		
		1	Prof. Lakshminarayana	Professor & Head, Department of MCA, East West Institute of Technology (EWIT), Bengaluru.

5	**Experts from outside the College nominated by VTU**	**Member**		
		1	Dr. Balaji Rajendran	Associate Director, C-DAC, Bengaluru.
6	**Representatives from Industry / Corporate sector / allied area related to placements, nominated by Academic Council**	**Members**		
		1	Mr. Pravin Kumar Sinha	Director, VISA Bengaluru.
		2	Mr. Vasanthram S	Sr. Program Manager, Arctic Wolf Networks, Bengaluru.
7	**Post Graduate meritorious alumni nominated by Principal**	**Member**		
		1	Mr. Vipul Kumar	Principal Architect, Rocket Software, Bengaluru.
		2	Mr. Melvin Vincent	Senior Customer Support Engineer, Azul Inc. Bengaluru
8	**Co-opted members**	**Members**		
		1	Dr. Sivakumar Raju	Director - Career Development Centre, NHEI
		2	Dr. N S Sukanya	Associate Professor
		3	Dr. Priya Thomas	Associate Professor
		4	Mr. M. Govindaraj	Sr. Assistant Professor
		5	Prof. A. Kalaivani	Sr. Assistant Professor
		6	Prof. J Sathya	Sr. Assistant Professor
		7	Mrs. Diksha Dhiman	Assistant Professor
		8	Mrs. Ashwitha N	Assistant Professor

HOD - MCA **VICE PRINCIPAL - ACADEMICS** **PRINCIPAL**

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 PRESENT

S.NO	NAME	SIGNATURE	S.NO	NAME	SIGNATURE
1	Dr. V. Asha		12	Prof. S.P. Sreeja	
2	Dr. R.J. Anandhi		13	Dr. B Nithya Ramesh	
3	Dr. Balaji Rajendran		14	Dr. M T Vasumathi	
4	Dr. Jaidhar C D	Online	15	Dr. Mithili Devi	
5	Prof. Lakshminarayana		16	Dr. N S Sukanya	
6	Dr. Sivakumar Raju		17	Dr. Priya Thomas	
7	Mr. Pravin Kumar Sinha		18	Prof. M. Govindaraj	
8	Mr. Vasanthram S		19	Prof. A Kalaivani	
9	Mr. Vipul Kumar		20	Prof. J Sathya	
10	Mr. Melvin Vincent		21	Prof. Ashwitha N	
11	Dr. Arpana Prasad		22	Prof. Seema Badnaware	

WELCOME ADDRESS AND INTRODUCTION OF THE MEMBERS

The 12th Board of Studies (BoS) Meeting for the Department of Master of Computer Applications was convened on 11th July 2026 at 11:30 AM in the Department of MCA, New Horizon College of Engineering.

The meeting commenced with a warm and cordial Welcome Address delivered by Dr. Arpana Prasad, Associate Professor, Department of MCA. She welcomed the Chairperson, special invitees, external academic experts, industry representatives, alumni members, faculty members, and co-opted members of the Board. A special welcome was extended to Dr. Balaji Rajendran, Associate Director, C-DAC, Bengaluru (VTU Nominee); Dr. Jaidhar C. D., Professor, Department of Information Technology, National Institute of Technology, Suratkal; Prof. Lakshminarayana, Professor and Head, Department of MCA, East West Institute of Technology (EWIT), Bengaluru; Alumni representatives Mr. Vipul Kumar, Principal Architect, Rocket Software, Bengaluru and Mr. Melvin Vincent, Senior Customer Support Engineer, Azul Inc., Bengaluru; Industry representatives Mr. Pravin Kumar Sinha, Director, VISA, Bengaluru and Mr. Vasanthram S., Senior Program Manager, Arctic Wolf Networks, Bengaluru; Dr. Manjunatha, Principal, New Horizon College of Engineering; Dr. R. J. Anandhi, Vice Principal – Academics, New Horizon College of Engineering; Dr. Sivakumar Raju; and all the internal faculty and co-opted members. She expressed her sincere gratitude to all the members for their continued support in strengthening the academic quality and curriculum of the MCA programme.

Following the welcome address, Dr. V. Asha, Professor and Head, Department of MCA and Chairperson of the Board of Studies, felicitated the distinguished external members of the Board as a token of appreciation for their valuable association with the department and their continued contribution towards curriculum development and academic excellence.

Thereafter, Dr. V. Asha, Chairperson of the Board of Studies, proceeded with the agenda of the meeting.

AGENDA 1: VISION, MISSION AND HIGHLIGHTS OF THE MCA PROGRAMME

VISION

To emerge as a department of eminence in the field of Computer Applications in serving the Information Technology Industry and the nation by empowering students with a high degree of technical, managerial and practical competence.

MISSION

To strengthen the theoretical, practical and ethical aspects of the learning while inculcating a culture of research, innovation and practical applications amongst faculty and students.

To encourage long-term interactions between the department and the IT Industry through rich involvement of the Industry in the design of the curriculum and its hands-on implementation.

To strengthen and mould students in professional, ethical, social and environmental dimensions by encouraging participation in co-curricular and extracurricular activities.

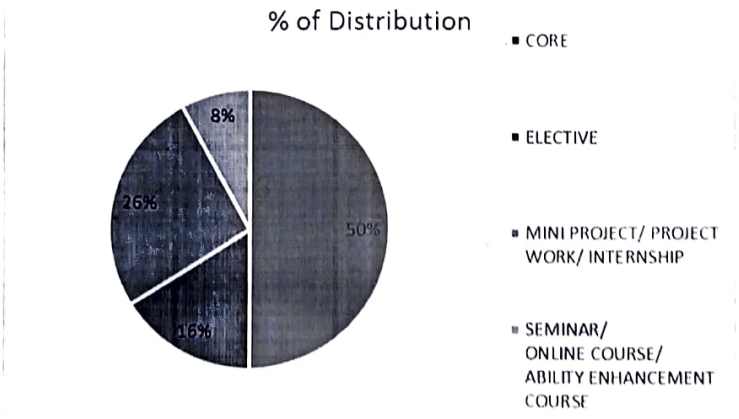
HIGHLIGHTS OF THE MCA PROGRAMME

- 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

AGENDA 2: PROPOSED SCHEME AND SYLLABUS FOR THE AY: 2026-27, BATCH: 2026-28

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
MCA DEGREE CURRICULUM – COURSE CREDIT STRUCTURE
BATCH: 2026-28: SEMESTER I TO IV

SEMESTER	CORE	ELECTIVE	MINI PROJECT / PROJECT WORK/ INTERNSHIP	SEMINAR/ ONLINE COURSE/ ABILITY ENHANCEMENT COURSE	TOTAL CREDITS
I	20	-	-	-	20
II	12	5	2	1	20
III	8	5	7	-	20
IV	-	3	12	5	20
TOTAL	40	13	21	6	80
% of Distribution	50	16	26	8	100



DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FIRST SEMESTER MCA PROGRAM
Scheme 2026 - AY 2026-27

SL NO	COURSE TYPE	COURSE CODE	COURSE TITLE	TEACHING & LEARNING SCHEME					EXAMINATION				CREDITS
				CI		LI	TW & SL	TOTAL HOURS/ SEM	DURATION IN HOURS	CIE MARKS	SEE MARKS	TOTAL MARKS	
				L	T	P							
1	AS/BSC	26MATC11	COMPUTATIONAL MATHEMATICS	30	30	-	30	90	3	50	50	100	3
2	MCA/PCC	26MCA12	PROBLEM SOLVING WITH C	45	-	-	45	90	3	50	50	100	3
3	MCA/PCC	26MCA13	OBJECT ORIENTED PROGRAMMING WITH JAVA	45	-	-	45	90	3	50	50	100	3
4	MCA/PCC	26MCA14	COMPUTER NETWORKS	45	-	-	45	90	3	50	50	100	3
5	MCA/IPCC	26MCA15	LINUX OPERATING SYSTEM AND SHELL SCRIPTING	30	-	30	30	90	3	50	50	100	3
6	MCA/IPCC	26MCA16	DATABASE MANAGEMENT SYSTEMS	30	-	30	30	90	3	50	50	100	3
7	MCA/PCCL	26MCAL17	PROGRAMMING WITH C LAB	-	-	45	-	45	3	50	50	100	1
8	MCA/PCCL	26MCAL18	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	-	-	45	-	45	3	50	50	100	1
								TOTAL		400	400	800	20

Note: **BSC** - Basic Science Course, **PCC** - Professional Core Course,
IPCC - Integrated Professional Core Course, (No SEE for lab component, only CIE), **PCCL** - Professional Core Course Lab
CI - Classroom Instruction, **LI** - Laboratory Instruction, **L** - Lecture, **T** - Tutorial, **P** - Practical, **TW & SL** - Term work & Self Learning

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

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF SECOND SEMESTER MCA PROGRAM
Scheme 2026 - AY 2026-27

SL NO	COURSE TYPE	COURSE CODE	COURSE TITLE	TEACHING & LEARNING SCHEME					EXAMINATION				CREDITS
				CI		LI	TW & SL	TOTAL HOURS/ SEM	DURATION IN HOURS	CIE MARKS	SEE MARKS	TOTAL MARKS	
				L	T	P							
1	MCA/PCC	26MCA21	DATA STRUCTURES	45	-	-	45	90	3	50	50	100	3
2	MCA/PCC	26MCA22	ADVANCED JAVA	45	-	-	45	90	3	50	50	100	3
3	MCA/PCC	26MCA23	DESIGN AND ANALYSIS OF ALGORITHMS	45	-	-	45	90	3	50	50	100	3
4	MCA/PEC	26MCA24X	PROFESSIONAL ELECTIVES-1	45	-	-	45	90	3	50	50	100	3
5	MCA/PEC	26MCA25X	LAB BASED PROFESSIONAL ELECTIVES-1	-	-	60	-	60	3	50	50	100	2
6	MCA/PCCL	26MCAL26	DATA STRUCTURES AND ALGORITHMS LAB	-	-	45	-	45	3	50	50	100	1.5
7	MCA/PCCL	26MCAL27	ADVANCED JAVA LAB	-	-	45	-	45	3	50	50	100	1.5
8	MCA/PROJ	26MCA28	MINI PROJECT	-	-	30	30	60	3	50	50	100	2
9	MCA/AEC	26MCA29X	ABILITY ENHANCEMENT COURSE	-	-	30	-	30	2	50	50	100	1
									TOTAL	450	450	900	20

Note: **PCC** - Professional Core Course, **PEC** - Professional Elective Course, **PCCL** - Professional Core Course Lab,
AEC- Ability Enhancement Course
CI - Classroom Instruction, **LI** - Laboratory Instruction, **L** - Lecture, **T** - Tutorial, **P** - Practical, **TW & SL** - Term work & Self Learning

PROFESSIONAL ELECTIVES-1		
SL NO	**COURSE CODE**	**COURSE TITLE**
1	26MCA241	CLOUD COMPUTING
2	26MCA242	CYBER SECURITY AND CYBER LAW
3	26MCA243	CRYPTOGRAPHY AND NETWORK SECURITY
4	26MCA244	ARTIFICIAL INTELLIGENCE
5	26MCA245	SOFTWARE ENGINEERING AND TESTING

LAB BASED PROFESSIONAL ELECTIVES-1		
SL NO	**COURSE CODE**	**COURSE TITLE**
1	26MCA251	BUSINESS INTELLIGENCE AND DATA ANALYTICS
2	26MCA252	MOBILE APPLICATION DEVELOPMENT
3	26MCA253	COMPETITIVE PROGRAMMING WITH PYTHON
4	26MCA254	NON RELATIONAL DATABASES (NoSQL) WITH MongoDB
5	26MCA255	ASP.NET WITH C#

ABILITY ENHANCEMENT COURSES		
SL NO	**COURSE CODE**	**COURSE TITLE**
1	26MCA291	ADVANCED EXCEL FOR DATA ANALYSIS
2	26MCA292	MICROSOFT VISIO
3	26MCA293	CONTAINERIZATION TOOLS
4	26MCA294	TYPESCRIPT PROGRAMMING
5	26MCA295	PROBLEM SOLVING USING SCALA

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF THIRD SEMESTER MCA PROGRAM
Scheme 2024 - AY 2026-27

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	9	0	9	18	50	50	100
			TOTAL		9	0	11	0	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** - Skill Development Activities

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
Scheme 2024 - AY 2026-27

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	0	2	0	2	4	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 (12 weeks)		-	-	-	3	3	-	-	-	100
5	AUD/NCMC*	24AUD45	RESEARCH METHODOLOGY AND IPR - Online		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	0	2	15	20	31	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** – Skill Development Activities

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	0	2	0	2
2	24MCA422	DEVOPS	MCA	0	0	2	0	2
3	24MCA423	BIG DATA ANALYTICS USING HP VERTICA	MCA	0	0	2	0	2
4	24MCA424	SOFTWARE TESTING USING SELENIUM	MCA	0	0	2	0	2
5	24MCA425	BLOCKCHAIN	MCA	0	0	2	0	2

NHCE MCA PROPOSED CREDIT DISTRIBUTION IN COMPARISON WITH VTU FOR BATCH 2026-28

S. No	Course Category	VTU Breakup of Credits (80)	NHCE Breakup of Credits (80)
1	Professional Core Courses (PCC, BSC, PCCL)	34	26
2	Professional Elective Courses (PEC)	10	13
3	Mini Project/ Project Work / Seminar	07	11
4	Internship	10	12
5	Online Courses (PEC)	06	03
6	Integrated Professional Core Course (IPCC)	12	14
7	Ability Enhancement Course(AEC)	01	01

AGENDA 3: SALIENT FEATURES OF THE SYLLABUS-AY: 2026-27

1. Comprehensive Core and Foundation Knowledge

- Strong foundation through courses such as Computational Mathematics, Problem Solving with C, Object-Oriented Programming with Java, Computer Networks, Linux Operating System & Shell Scripting, Database Management Systems, Data Structures, Advanced Java, and Design & Analysis of Algorithms.
- Builds competencies in programming, algorithms, databases, operating systems, networking, and software development.
- *OBE Contribution:* Collectively, the core curriculum strengthens Foundation Knowledge (PO1), Problem Analysis (PO2), Development of Solutions (PO3), Modern Tool Usage (PO4) and PSO1, enabling students to analyse, design, and develop computing solutions.

2. Strong Computational Foundation

- Computational Mathematics develops mathematical reasoning, analytical thinking, numerical methods, and computational modelling required for advanced computing domains such as Artificial Intelligence, Data Analytics, and Algorithm Design.
- *OBE Contribution:* Strengthens PO1 (Foundation Knowledge), PO2 (Problem Analysis) and PSO1, providing the analytical foundation for computing applications.

3. Experiential Learning through Integrated Labs

- Every major programming course is complemented with dedicated laboratory sessions.
- Integrated Professional Core Courses (IPCC) seamlessly integrate theory with laboratory practice, promoting concept-to-application learning.
- Hands-on learning is reinforced through Programming with C, Java, Data Structures & Algorithms, and Advanced Java laboratories.
- *OBE Contribution:* Laboratory components collectively enhance Development of Solutions (PO3), Modern Tool Usage (PO4), Individual & Teamwork (PO5) while strengthening PSO1 through practical software development.

4. **Lab-Based Electives in Emerging Technologies**

- Specialized laboratory electives provide practical exposure in Business Intelligence & Data Analytics, Competitive Programming with Python, NoSQL Databases (MongoDB), Mobile Application Development, DevOps, Cloud Services, Blockchain, Software Testing using Selenium, and Big Data Analytics.
- Enables students to gain hands-on expertise in emerging technologies aligned with industry requirements.
- *OBE Contribution:* Strengthens PO3 (Development of Solutions), PO4 (Modern Tool Usage), PO8 (Life-long Learning) and PSO2 through innovation-driven and application-oriented learning.

5. **Industry-Oriented Curriculum**

- Professional electives address emerging domains including Artificial Intelligence, Machine Learning, Cloud Computing, Cyber Security, Data Science, Ethical Hacking, Internet of Things, UI/UX Design, Blockchain, DevOps, Full Stack Development, and Mobile Application Development.
- Curriculum is aligned with evolving industry expectations and technological advancements.
- *OBE Contribution:* Strengthens PO3, PO4, PO8 and PSO2, preparing graduates to develop innovative, secure, and industry-relevant software solutions.

6. **Balanced Theory–Practice Curriculum**

- Curriculum is designed to provide an optimal balance between theoretical knowledge and practical learning, ensuring strong conceptual understanding along with hands-on implementation skills.
- Theory Component (including Technical Seminar and Online Courses): ***45 /80 Credits (56%)***
- Practical Component (including Laboratory Courses, Mini Project, Project Work, and Internship): ***35/80 Credits (44%)***
- The balanced credit distribution promotes experiential learning, innovation, research orientation, and industry readiness.
- *OBE Contribution:* Promotes holistic attainment of PO1–PO8 through a balanced integration of knowledge acquisition, practical application, professional competencies, and lifelong learning.

7. **Project-Based Learning**

- Mini Project (Semester II), Project Work (Semester III), and Internship (Semester IV) progressively develop students' ability to solve real-world problems through innovation, teamwork, and industry engagement.
- Encourages research, creativity, project planning, and professional practice.
- *OBE Contribution:* Collectively enhances PO3 (Development of Solutions), PO5 (Individual & Teamwork), PO6 (Project Management & Finance), PO7 (Ethics), PO8 (Life-long Learning) and PSO2.

8. **Professional Development and Lifelong Learning**

- Technical Seminar, Online Courses, Research Methodology & IPR, and Ability Enhancement Courses helps communication, research aptitude, ethical practice, and continuous professional development.
- Encourages participation in NPTEL, SWAYAM, VTU Online Courses, and industry certification programmes.
- *OBE Contribution:* Supports PO5 (Individual & Teamwork), PO7 (Ethics), PO8 (Life-long Learning) by promoting continuous learning and professional excellence.

9. **Outcome-Based Curriculum Design**

- OBE-driven curriculum with systematic alignment of COs, POs, PSOs, and PEOs.
- Verification of CO–PO–PSO mapping, credit structure, RBT level distribution, and assessment design for every course.
- Ensures curriculum coherence, academic quality, and compliance with AICTE, VTU, and NBA guidelines.
- *Outcome:* Strengthens constructive alignment, outcome attainment, and continuous quality improvement.

AGENDA 4: CO, PO, PSO, PEO, CREDIT AND RBT LEVEL REQUIREMENTS AND MAPPING VERIFICATION

PROGRAM OUTCOMES

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.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO1	Excel in the field of Computer Applications and contribute to academia, industry and research.
PEO2	Deliver software solutions that are socially relevant and adapt quickly to emerging technologies.
PEO3	Demonstrate professional behavior by understanding ethical and communication skills to engage in lifelong learning.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1

Apply knowledge of programming, database systems, operating systems, computer networks, software engineering, and data analytics to analyze, design, and implement computing solutions for real-world applications using modern software tools and technologies.

PSO2

Design and develop innovative, secure, ethical and sustainable software solutions using data science, artificial intelligence, cloud computing, cyber security, and full-stack development to address industry requirements and societal needs.

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 appreciated the integration of MOOC courses into the curriculum in alignment with the VTU Scheme and Outcome-Based Education (OBE).
   - For Batch 2026–28, the board appreciated that the students will be encouraged to complete online certification as part of the Term Work & Self-Learning (TW & SL) learning hours. Relevant certification courses will be identified through the Course Enrichment Analysis by the respective Course Coordinators. Though the certifications will not be mandatory but this tool will specifically be helpful to the fast learners.
   - The board also appreciated that for selected courses, MOOC/certification courses (e.g., CISCO Certifications and Spoken Tutorial certifications after the qualifying examination) are identified as part of the Alternate Assessment Test (AAT) component to strengthen practical and industry-relevant skills.
   - The Board appreciated the Department's recommendations on completion of MOOC courses during Semester I and Semester II though the courses are part of Sem IV scheme.
   - Members of the board further recommended that 8-week (30-hour) MOOCs be considered for 2 credits and 12-week MOOCs for 3 credits, with the duration explicitly specified in the syllabus.
   - As per board recommendations students may be encouraged to pursue Artificial Intelligence and other emerging technology-related MOOCs to enhance industry readiness and lifelong learning competencies.
2. **Inclusion of Artificial Intelligence Courses**
   - The Board appreciated the inclusion of Artificial Intelligence-oriented courses in the curriculum, recognizing the progressive integration of AI across multiple semesters through:
   - Artificial Intelligence as a Professional Elective in Semester II,
   - Machine Learning as a Core Course in Semester III,
   - Data Science as a Professional Elective in Semester III, and
   - AI Ethics as a Professional Elective in Semester IV.

- The Board further recommended introducing *Agentic AI* as a Lab-Based Professional Elective–I (2 Credits) in Semester II, replacing ASP.NET with C#. The Board observed that the proposed course would provide students with hands-on experience in designing and developing AI agents using Large Language Models (LLMs), prompt engineering, AI workflows, Retrieval-Augmented Generation (RAG), and agent orchestration. The course would enable students to build intelligent, autonomous AI applications and gain practical exposure to the rapidly evolving AI ecosystem, thereby enhancing industry readiness and aligning the curriculum with current and future technological trends.

3. **Course Title Revision for Better Curriculum Alignment**

   The Board also recommended renaming the course titled *Cyber Security and Cyber Law* to *Cyber Security*. The Board observed that the revised title would be more concise, align with contemporary industry terminology, and accurately reflect the course content and learning outcomes.

4. **Inclusion of Spring Boot Module in Advanced Java (26MCA22)**

   The Board recommended incorporating a dedicated **Spring Boot** module in **Advanced Java (26MCA22)**. The Board observed that the inclusion of Spring Boot would strengthen students' understanding of enterprise application development, RESTful web services, and modern Java frameworks, thereby enhancing industry readiness.

5. **Enhancement of Business Intelligence and Data Analytics (26MCA251)**

   The Board recommended strengthening **Business Intelligence and Data Analytics (26MCA251)**, **Lab-Based Professional Elective–I**, by enriching the laboratory with industry-oriented business analytics applications, real-world datasets, advanced data visualization techniques, and practical case studies. The Board observed that these enhancements would improve students' analytical, visualization, and data-driven decision-making skills, aligning the course with current industry practices.

6. **Inclusion of Containerization Tools in AEC**

   The Board appreciated the inclusion of Containerization Tools in the Ability Enhancement Course. The Board observed that this would strengthen students' practical knowledge of application deployment, DevOps practices, and cloud-based technologies, aligning the course with current industry requirements.

The finalized scheme and syllabus for Semester I and II of AY 2026-27 is prepared considering the above recommendations to align with the VTU guidelines and industry requirements. The recommendations and action taken is presented in Table 1.

Table 1: Summary of BoS Recommendations and Departmental Action Taken

Sl. No.	Board Recommendation	Action Taken by the Department
1	Introduce Agentic AI (26MCA252) as Lab-Based Professional Elective–I in Semester II, replacing ASP.NET with C#, to provide hands-on exposure to AI agents, LLMs, prompt engineering, RAG, and AI application development.	Accepted and implemented. Agentic AI (26MCA252) has been introduced as Lab-Based Professional Elective–I in Semester II, replacing ASP.NET with C#.
2	Rename Cyber Security and Cyber Law (25MCA242) as Cyber Security (26MCA242) to align the course title with current industry nomenclature.	Accepted and implemented. The course title has been revised to Cyber Security (26MCA242).
3	Incorporate a Spring Boot module in Advanced Java (26MCA22) to strengthen enterprise application development skills.	Accepted and implemented. A dedicated Spring Boot module has been incorporated into Advanced Java (26MCA22).
4	Strengthen Business Intelligence and Data Analytics (26MCA251), Lab-Based Professional Elective–I, by enriching the laboratory with industry-oriented business analytics applications, real-world datasets, advanced data visualization, and practical case studies.	Accepted and implemented. The laboratory syllabus has been enhanced with industry-oriented datasets, advanced visualization techniques, and practical case studies.

Based on the recommendations of the Board, the following Scheme and Syllabus for the Academic Year 2026-27 Batch 2026-28, Semesters I & II and Batch 2025-27, Semester III & IV have been finalized.

APPROVED SCHEME & SYLLABUS
AY: 2026-27 BATCH 2026-28

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FIRST SEMESTER MCA PROGRAM
Scheme 2026 - AY 2026-27

SL NO	COURSE TYPE	COURSE CODE	COURSE TITLE	TEACHING & LEARNING SCHEME					EXAMINATION				CREDITS
				CI		LI	TW & SL	TOTAL HOURS/ SEM	DURATION IN HOURS	CIE MARKS	SEE MARKS	TOTAL MARKS	
				L	T	P							
1	AS/BSC	26MATC11	COMPUTATIONAL MATHEMATICS	30	30	-	30	90	3	50	50	100	3
2	MCA/PCC	26MCA12	PROBLEM SOLVING WITH C	45	-	-	45	90	3	50	50	100	3
3	MCA/PCC	26MCA13	OBJECT ORIENTED PROGRAMMING WITH JAVA	45	-	-	45	90	3	50	50	100	3
4	MCA/PCC	26MCA14	COMPUTER NETWORKS	45	-	-	45	90	3	50	50	100	3
5	MCA/IPCC	26MCA15	LINUX OPERATING SYSTEM AND SHELL SCRIPTING	30	-	30	30	90	3	50	50	100	3
6	MCA/IPCC	26MCA16	DATABASE MANAGEMENT SYSTEMS	30	-	30	30	90	3	50	50	100	3
7	MCA/PCCL	26MCAL17	PROGRAMMING WITH C LAB	-	-	45	-	45	3	50	50	100	1
8	MCA/PCCL	26MCAL18	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	-	-	45	-	45	3	50	50	100	1
								TOTAL		400	400	800	20

Note: **BSC** - Basic Science Course, **PCC** - Professional Core Course,
IPCC - Integrated Professional Core Course, (No SEE for lab component, only CIE), **PCCL** - Professional Core Course Lab
CI - Classroom Instruction, **LI** - Laboratory Instruction, **L** - Lecture, **T** - Tutorial, **P** - Practical, **TW & SL** - Term work & Self Learning

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

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF SECOND SEMESTER MCA PROGRAM
Scheme 2026 - AY 2026-27

SL NO	COURSE TYPE	COURSE CODE	COURSE TITLE	TEACHING & LEARNING SCHEME					EXAMINATION				CREDITS
				CI		LI	TW & SL	TOTAL HOURS/ SEM	DURATION IN HOURS	CIE MARKS	SEE MARKS	TOTAL MARKS	
				L	T	P							
1	MCA/PCC	26MCA21	DATA STRUCTURES	45	-	-	45	90	3	50	50	100	3
2	MCA/PCC	26MCA22	ADVANCED JAVA	45	-	-	45	90	3	50	50	100	3
3	MCA/PCC	26MCA23	DESIGN AND ANALYSIS OF ALGORITHMS	45	-	-	45	90	3	50	50	100	3
4	MCA/PEC	26MCA24X	PROFESSIONAL ELECTIVES-1	45	-	-	45	90	3	50	50	100	3
5	MCA/PEC	26MCA25X	LAB BASED PROFESSIONAL ELECTIVES-1	-	-	60	-	60	3	50	50	100	2
6	MCA/PCCL	26MCAL26	DATA STRUCTURES AND ALGORITHMS LAB	-	-	45	-	45	3	50	50	100	1.5
7	MCA/PCCL	26MCAL27	ADVANCED JAVA LAB	-	-	45	-	45	3	50	50	100	1.5
8	MCA/PROJ	26MCA28	MINI PROJECT	-	-	30	30	60	3	50	50	100	2
9	MCA/AEC	26MCA29X	ABILITY ENHANCEMENT COURSE	-	-	30	-	30	2	50	50	100	1
								TOTAL		450	450	900	20

Note: **PCC** - Professional Core Course, **PEC** - Professional Elective Course, **PCCL** - Professional Core Course Lab, **AEC**- Ability Enhancement Course
CI - Classroom Instruction, **LI** - Laboratory Instruction, **L** - Lecture, **T** - Tutorial, **P** - Practical, **TW & SL** - Term work & Self Learning

PROFESSIONAL ELECTIVES-1		
SL NO	**COURSE CODE**	**COURSE TITLE**
1	26MCA241	CLOUD COMPUTING
2	26MCA242	CYBER SECURITY
3	26MCA243	CRYPTOGRAPHY AND NETWORK SECURITY
4	26MCA244	ARTIFICIAL INTELLIGENCE
5	26MCA245	SOFTWARE ENGINEERING AND TESTING

LAB BASED PROFESSIONAL ELECTIVES-1		
SL NO	**COURSE CODE**	**COURSE TITLE**
1	26MCA251	BUSINESS INTELLIGENCE AND DATA ANALYTICS
2	26MCA252	AGENTIC AI
3	26MCA253	COMPETITIVE PROGRAMMING WITH PYTHON
4	26MCA254	NON RELATIONAL DATABASES (NoSQL) WITH MongoDB
5	26MCA255	MOBILE APPLICATION DEVELOPMENT

ABILITY ENHANCEMENT COURSES		
SL NO	**COURSE CODE**	**COURSE TITLE**
1	26MCA291	CONTAINERIZATION TOOLS
2	26MCA292	ADVANCED EXCEL FOR DATA ANALYSIS
3	26MCA293	MICROSOFT VISIO
4	26MCA294	TYPESCRIPT PROGRAMMING
5	26MCA295	PROBLEM SOLVING USING SCALA

APPROVED SCHEME & SYLLABUS
AY: 2026-27 BATCH 2025-27

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF THIRD SEMESTER MCA PROGRAM
Scheme 2024 - AY 2026-27

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	9	0	9	18	50	50	100
			TOTAL		9	0	11	0	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** - Skill Development Activities

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
Scheme 2024 - AY 2026-27

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	0	2	0	2	4	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 (12 weeks)		-	-	-	3	3	-	-	-	100
5	AUD/NCMC*	24AUD45	RESEARCH METHODOLOGY AND IPR - Online		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	0	2	15	20	31	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** – Skill Development Activities

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	0	2	0	2
2	24MCA422	DEVOPS	MCA	0	0	2	0	2
3	24MCA423	BIG DATA ANALYTICS USING HP VERTICA	MCA	0	0	2	0	2
4	24MCA424	SOFTWARE TESTING USING SELENIUM	MCA	0	0	2	0	2
5	24MCA425	BLOCKCHAIN	MCA	0	0	2	0	2

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 throug032-0h 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

Prof. S. P. Sreeja, Sr. Assistant Professor, Department of MCA, proposed the Vote of Thanks. She expressed her sincere gratitude to the Chairperson, the VTU Nominee, Special Invitee, Subject Expert, Alumni and Industry Experts for their valuable time, insightful deliberations, and constructive recommendations. She also conveyed heartfelt thanks, to the Honourable Chairman, Dr. Mohan Manghnani, the Principal, Dr. Manjunatha, and the Vice Principal – Academics, Dr. R. J. Anandhi, for their continued guidance and support. She acknowledged the valuable presence and suggestions of Dr. Sivakumar Raju, Director – CDC, appreciated the leadership of the Chairperson, Dr. V. Asha, and thanked all the faculty members for their active participation and support. She concluded by expressing confidence that the recommendations of the Board would further strengthen the MCA curriculum and enhance its academic quality and industry relevance.

With this, the 12th Board of Studies Meeting of the Department of MCA, New Horizon College of Engineering, Bengaluru, formally concluded.

HOD-MCA

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

MCA

NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Supplementary Agendum

to the

of 12th Board of Studies Meeting, held on 11-07-2026

Agenda: Approval of the revised MCA Scheme and Syllabus in accordance with the updated VTU Scheme and Syllabus released on 09.09.2026

Minutes of Meeting

Academic Year 2026-27

Venue: *Conference Room, Department of MCA, Sardar Vallabhbhai Patel Block(Hybrid Mode)*

Date: *26.09.2026*

Time: *10:30 am*

Professor & Vice Principal (Aca)
New Horizon College of Engineering
Bellandur Post, Bengaluru - 560103

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 PRESENT-SUPPLEMENTARY AGENDUM

S.No.	NAME	SIGN.	SNo.	NAME	SIGN.
1	Dr. V Asha		11	Dr Arpana Prasad	
2	Dr .R J Anandhi		12	Dr B Nithya Ramesh	
3	Dr Balaji Rajendran	Online	13	Dr M T Vasumathi	
4	Dr Jaidhar C D	Online	14	Dr N S Sukanya	
5	Prof. Lakshminarayana	Online	15	Dr Priya Thomas	
6	Dr Sivakumar Raju		16	Prof M Govindraj	
7	Mr Pravin Kumar Sinha	Online	17	Prof. A. Kalaivani	
8	Mr Vasanthram S	Online	18	Prof J. Sathya	
9	Mr Vipul Kumar	Online	19	Prof. Ashwitha N	
10	Mr Melvin Vincent	Online			

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Agenda Item 1. WELCOME ADDRESS

The Chairperson welcomed all the members of the Board of Studies to the supplementary proceedings of the 12th Board of Studies meeting of the Department of Master of Computer Applications, New Horizon College of Engineering, Bengaluru, and expressed appreciation for their continued support and valuable contributions towards the academic development of the MCA programme.

The Chairperson briefly highlighted the purpose of the supplementary agendum, which was to place before the Board the relevant revisions to the MCA Scheme and Syllabus in accordance with the notifications and guidelines issued by Visvesvaraya Technological University (VTU). The revisions included provisions relating to mandatory Skill Labs and the introduction of MCA specialisations, as applicable to the programme.

The Chairperson emphasised the importance of ensuring alignment with VTU requirements and invited the members to deliberate on the supplementary agendum and offer their valuable suggestions and recommendations.

Agenda Item 2: RATIONALE FOR THE SYLLABUS REVISION

The MCA Schemes and Syllabus for the Academic Year 2026–27 was considered during the 12th Board of Studies meeting held on 11 July 2026. Subsequently, Visvesvaraya Technological University (VTU) issued the following communications requiring consideration of the applicable provisions in the MCA curriculum:

1. VTU Notification No. VTU/BGM/Skill lab/1016/2026-27/1736, dated 15 July 2026, regarding the implementation of Skill Labs for undergraduate and postgraduate programmes under the 2025 and 2026 schemes.
2. VTU Circular No. VTU/BGM/MCA/1029/2026/2123, dated 30 July 2026, regarding the introduction of specialisations in the Master of Computer Applications (MCA) programme.

In view of these communications, the Department reviewed the applicable requirements and prepared the supplementary agendum to place the proposed revisions to the MCA Scheme and Syllabus before the Board of Studies for consideration and approval.

The objective was to ensure alignment with the applicable VTU requirements and maintain the relevance and consistency of the MCA curriculum.

Agenda Item 3: CONSIDERATION AND APPROVAL OF REVISED MCA SCHEME AND SYLLABUS

The Department placed before the Board of Studies the proposed revisions to the MCA Scheme and Syllabus in accordance with the applicable notifications and circulars issued by Visvesvaraya Technological University (VTU).

The Board was invited to consider the VTU directives and the corresponding departmental actions, review the comparison of VTU and NHCE credit distribution, and examine the revised course credit structure and schemes of study for Semesters I and II.

The deliberations also covered the incorporation of mandatory Skill Labs and the applicable MCA specialisations into the curriculum. The Board was requested to review the proposed revisions and provide its recommendations for finalising the revised MCA Scheme and Syllabus for the relevant academic batches.

The following sub-agenda items were presented for consideration:

3.1 Summary of VTU Directives and Departmental Action Taken

3.2 Comparison of VTU and NHCE Credit Distribution

3.3 MCA Degree Curriculum – Course Credit Structure

3.4 Revised Scheme of Study – Semester I

3.5 Revised Scheme of Study – Semester II

3.6 Summary of BoS Recommendations and Departmental Action Taken

Agenda Item 3.1: Summary of VTU Directives and Departmental Action Taken

Subsequent to the 12th Board of Studies meeting held on 11 July 2026, Visvesvaraya Technological University (VTU) issued the following communications requiring corresponding revisions to the MCA Scheme and Syllabus. These communications and the corresponding action taken by the Department are presented in Table 1.

Table 1: Summary of VTU Directives and Departmental Action Taken

Sl. No.	VTU Directive / Requirement	Action Taken by the Department
1	Introduction of MCA specialisations as per VTU Circular No. **VTU/BGM/MCA/1029/2026/2123**, dated 30 July 2026.	The revised MCA Scheme and Syllabus incorporates three specialisation tracks offered by NHCE: Cyber Security, Data Science, and Enterprise Application Development, along with the applicable specialisation-specific courses.
2	Introduction of mandatory Skill Labs as per VTU Notification No. **VTU/BGM/Skill lab/1016/2026-27/1736**, dated 15 July 2026.	The requirement has been incorporated into the revised MCA Scheme and Syllabus for Batch 2026–28 by including Skill Lab I and Skill Lab II, carrying one credit each, as mandatory courses for the award of the degree.

Agenda Item 3.2: Comparison of VTU and NHCE Credit Distribution

The above revisions have been incorporated into the revised MCA Scheme and Syllabus for consideration and approval by the Board of Studies.

The credit distribution of the MCA programme under the VTU scheme and the NHCE scheme for Batch 2026–28 is presented in Table 2 for comparison. The table outlines the allocation of credits across the major course categories and highlights the corresponding distribution adopted by NHCE.

Table 2: Comparison of VTU and NHCE Credit Distribution for the MCA Programme (Batch 2026–28)

S. No.	Course Category	VTU Breakup of Credits (80)	NHCE Breakup of Credits (80+2*)
1	Professional Core Courses (PCC, BSC, PCCL)	22	37
2	Integrated Professional Core Course (IPCC)	8	8 (Additionally, 4 credits of an integrated course are included in PEC)
3	Professional Elective Courses (PEC)	26	16
4	Online Course (PEC)	6	6
5	Project Work	8	8
6	Internship	9	9
7	Ability Enhancement Course (AEC)/Skill Labs	1	2*
8	NCMC	i)Research Methodology and IPR (Online) ii)** Additional Mathematics	i)Research Methodology and IPR (**Online**) ii)Problem Solving Methodologies iii) ** Foundation Mathematics for Computer Applications
9	Specialization Tracks	i) Cyber Security ii) Data Science iii)Internet of Things iv) Enterprise Application Development	i) Cyber Security ii) Data Science iii)Enterprise Application Development

*Skill Lab is a mandatory course offered in Semester 1 and Semester 2 as Skill Lab I and Skill Lab II, carrying 1 credit each. Successful completion of both courses is mandatory for the award of the degree.

** 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.

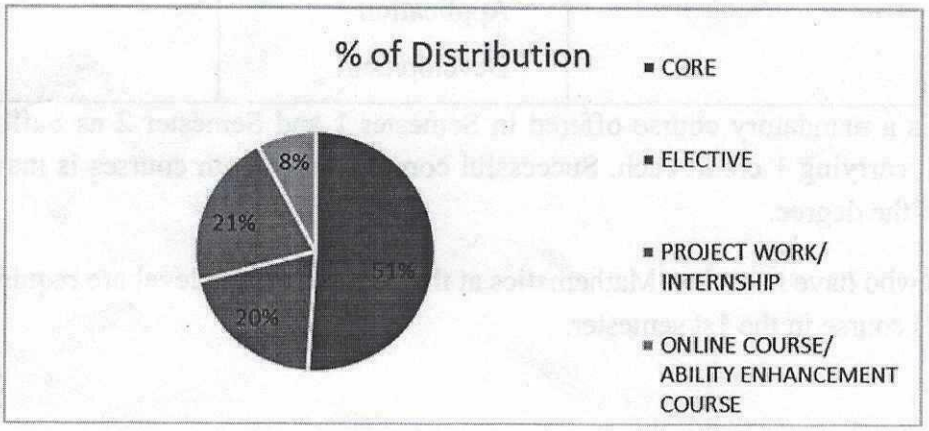
Agenda Item 3.3: MCA – Course Credit Structure

NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
MCA DEGREE CURRICULUM – COURSE CREDIT STRUCTURE
BATCH 2026-28 & 2027-29: SEMESTER I TO IV

SEMESTER	CORE	ELECTIVE	PROJECT WORK/ INTERNSHIP	ONLINE COURSE/ ABILITY ENHANCEMENT COURSE	TOTAL CREDITS
I	22	-	-	1*	22+1*
II	11	9	-	1*	20+1*
III	8	7	8	-	23
IV	-	-	9	6	15
TOTAL	41	16	17	6	80+2*
% of Distribution	51	20	21	8	100

*- **Note: Skill Lab Mandatory for award of degree**



Agenda Item 3.4: Scheme of Study – Semester I & II

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FIRST SEMESTER MCA PROGRAM
Scheme 2026 - AY 2026-27 & 2027-28

SL NO	COURSE	COURSE CODE	COURSE NAME	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	TLP CONTACT HOURS / SEM	TW & SL / SEM	TOTAL HOURS /SEM	EXAM HRS	MARKS		
					L	T	P	S						CIE	SEE	TOTAL
1	BSC	26MT11	MATHEMATICAL FOUNDATIONS FOR COMPUTER APPLICATIONS	AS	2	1	0	0	3	56	34	90	3	50	50	100
2	PCC	26MC12	DATA STRUCTURES WITH C	MCA	3	0	0	0	3	42	48	90	3	50	50	100
3	PCC	26MC13	OBJECT ORIENTED PROGRAMMING WITH JAVA	MCA	3	0	0	0	3	42	48	90	3	50	50	100
4	PCC	26MC14	COMPUTER NETWORKS	MCA	3	0	0	0	3	42	48	90	3	50	50	100
5	PCC	26MC15	LINUX OPERATING SYSTEM AND SHELL SCRIPTING	MCA	3	0	0	0	3	42	48	90	3	50	50	100
6	IPCC	26MC16	DATABASE MANAGEMENT SYSTEMS	MCA	3	0	1	0	4	70	50	120	3	50	50	100
7	PCCL	26MCL17	DATA STRUCTURES LAB	MCA	0	0	1.5	0	1.5	42	3	45	3	50	50	100
8	PCCL	26MCL18	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	MCA	0	0	1.5	0	1.5	42	3	45	3	50	50	100
9	AEC	26MC19	PROBLEM SOLVING METHODOLOGIES	MCA	0	0	0	0	-	28	32	60	-	50	-	PP
10	NCMC	26MT110	FOUNDATION MATHEMATICS FOR COMPUTER APPLICATIONS #	AS	-	-	-	-	-	42	48	90	-	50	-	50
			TOTAL		17	1	4	0	22	448	362	810	24	500	400	850

Note: **BSC** - Basic Science Course, **PCC** - Professional Core Course, **AEC** - Ability Enhancement Course
IPCC - Integrated Professional Core Course, (No SEE for lab component, only CIE), **PCCL** - Professional Core Course Lab
CI - Classroom Instruction, **LI** - Laboratory Instruction, **L** - Lecture, **T** - Tutorial, **P** - Practical, **TW & SL** - Term work & Self Learning

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 for the award of master's degree

#Bridge Course: Non-Credit Mandatory Course 26MT110 - 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
Scheme 2026 - AY 2026-27 & 2027-28

SL NO	COURSE	COURSE CODE			BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	TLP CONTACT HOURS / SEM	TW & SL / SEM	TOTAL HOURS /SEM	EXAM HRS	MARKS		
		CYBER SECURITY	DATA SCIENCE	ENTERPRISE APPLICATION DEVELOPMENT		L	T	P	S						CIE	SEE	TOTAL
1	PCC	26MC21	26MC21	26MC21	MCA	3	0	0	0	3	42	48	90	3	50	50	100
2	PCC	26MC22	26MC22	26MC22	MCA	3	0	0	0	3	42	48	90	3	50	50	100
3	PCC	26MC23	26MC23	26MC23	MCA	3	0	0	0	3	42	48	90	3	50	50	100
4	PCCL	26MCL24	26MCL24	26MCL24	MCA	0	0	1	0	1	28	2	30	3	50	50	100
5	PCCL	26MCL25	26MCL25	26MCL25	MCA	0	0	1	0	1	28	2	30	2	50	50	100
6	PEC	26MCCS26	26MCDS26	26MCEA26	MCA	3	0	0	0	3	42	48	90	3	50	50	100
7	PEC	26MCCS27	26MCDS27	26MCEA27	MCA	3	0	0	0	3	42	48	90	3	50	50	100
8	PECL	26MCCSL28	26MCDSL28	26MCEAL28	MCA	0	0	1.5	0	1.5	42	3	45	3	50	50	100
9	PECL	26MCCSL29	26MCDSL29	26MCEAL29	MCA	0	0	1.5	0	1.5	42	3	45	3	50	50	100
TOTAL						15	0	5	0	20	350	250	600	26	450	450	900
SKILL LABS * (MANDATORY FOR THE AWARD OF THE DEGREE; REFLECTS IN FINAL SEMESTER GRADE CARD)																	
1	AEC	26MCSL20	SKILL LAB - I		MCA	0	0	1	0	1	-	30	30	-	50	-	50

Note: **PCC** - Professional Core Course, **PCCL** - Professional Core Course Lab, **AEC** - Ability Enhancement Course, **PEC** – Professional Elective Course, **PECL** - Professional Elective Course Lab **CI** - Classroom Instruction, **LI** - Laboratory Instruction, **L** - Lecture, **T** - Tutorial, **P** - Practical, **TW & SL** - Term work & Self Learning

NOTE: *As per VTU Circular No. VTU/BGM/Skill lab/1016/2026-27/1736, dated 15 July 2026.

SECOND SEMESTER Core Courses	
Course Code	**Course Name**
26MC21	ADVANCED JAVA
26MC22	DESIGN AND ANALYSIS OF ALGORITHMS
26MC23	SOFTWARE ENGINEERING AND AGILE DEVELOPMENT
26MCL24	ADVANCED JAVA LAB
26MCL25	DEVOPS

CYBER SECURITY SPECIALIZATION		DATA SCIENCE SPECIALIZATION		ENTERPRISE APPLICATION DEVELOPMENT SPECIALIZATION	
Course Code	**Course Name**	**Course Code**	**Course Name**	**Course Code**	**Course Name**
26MCCS26	CYBER SECURITY & ETHICAL HACKING	26MCDS26	ARTIFICIAL INTELLIGENCE AND AGENTIC AI	26MCEA26	ENTERPRISE APPLICATION TESTING & QUALITY ASSURANCE
26MCCS26	CRYPTOGRAPHY AND NETWORK SECURITY	26MCDS27	DATA SCIENCE	26MCEA27	AI FOR ENTERPRISE APPLICATIONS
26MCCSL29	ETHICAL HACKING LAB	26MCDSL28	AGENTIC AI LAB	26MCEAL28	SOFTWARE TESTING & QUALITY ASSURANCE LAB
26MCCSL29	CRYPTOGRAPHY AND NETWORK SECURITY LAB	26MCDSL29	BUSINESS INTELLIGENCE AND DATA ANALYTICS LAB	26MCEAL29	AI FOR ENTERPRISE APPLICATIONS LAB

Agenda Item 3.5: Summary of BoS Recommendations and Departmental Action Taken

The recommendations of the Board of Studies and the corresponding action taken by the Department are summarised in Table 3.

Table 3: Summary of BoS Recommendations and Departmental Action Taken

Sl. No.	Recommendations of the Board of Studies (BoS)	Departmental Action Taken
1	Rename "Cyber Security & Ethical Hacking" as "Cyber Security and Ethical Hacking".	The course title has been revised to Cyber Security and Ethical Hacking (26MCCS26).
2	Retain Cryptography and Network Security as a separate course.	The course is retained as Cryptography and Network Security (26MCCS27).
3	Offer Ethical Hacking Lab and Cryptography and Network Security Lab as separate laboratory courses.	The two laboratories are included as Ethical Hacking Lab (26MCCSL28) and Cryptography and Network Security Lab (26MCCSL29).
4	Retain Artificial Intelligence and Agentic AI and Data Science and Visualization under the Data Science specialization.	Both courses are retained as Artificial Intelligence and Agentic AI (26MCDS26) and Data Science and Visualization (26MCDS27).
5	Include separate laboratory courses for Agentic AI and Data Science and Visualization.	Agentic AI Lab (26MCDSL28) and Data Science and Visualization Lab (26MCDSL29) are included.
6	Retain Enterprise Application Testing and Quality Assurance and AI for Enterprise Applications under the Enterprise Application Development specialization.	Both courses are retained as Enterprise Application Testing and Quality Assurance (26MCEA26) and AI for Enterprise Applications (26MCEA27).
7	Retain the corresponding laboratory courses for Enterprise Application Testing and Quality Assurance and AI for Enterprise Applications.	Software Testing and Quality Assurance Lab (26MCEAL28) and AI for Enterprise Applications Lab (26MCEAL29) are included.
8	Replace Critical and Creative Thinking Skills with Problem Solving Methodologies, focusing on quantitative aptitude, logical reasoning, analytical thinking, numerical techniques and cognitive ability.	Problem Solving Methodologies (26MC19) is included in Semester I as an Ability Enhancement Course (AEC), covering quantitative analysis, numerical problem-solving techniques, gamification and cognitive reasoning.

Agenda Item 3.6: Revised Scheme and Syllabus Approved by the Board

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
SCHEME OF FIRST SEMESTER MCA PROGRAM
Scheme 2026 – Batch 2026-28 & 2027-29

SL NO	COURSE	COURSE CODE	COURSE NAME	BOS	CREDIT DISTRIBUTION				OVERALL CREDITS	TLP CONTACT HOURS / SEM	TW & SL / SEM	TOTAL HOURS /SEM	EXAM HRS	MARKS		
					L	T	P	S						CIE	SEE	TOTAL
1	BSC	26MT11	MATHEMATICAL FOUNDATIONS FOR COMPUTER APPLICATIONS	AS	2	1	0	0	3	56	34	90	3	50	50	100
2	PCC	26MC12	DATA STRUCTURES WITH C	MCA	3	0	0	0	3	42	48	90	3	50	50	100
3	PCC	26MC13	OBJECT ORIENTED PROGRAMMING WITH JAVA	MCA	3	0	0	0	3	42	48	90	3	50	50	100
4	PCC	26MC14	COMPUTER NETWORKS	MCA	3	0	0	0	3	42	48	90	3	50	50	100
5	PCC	26MC15	LINUX OPERATING SYSTEM AND SHELL SCRIPTING	MCA	3	0	0	0	3	42	48	90	3	50	50	100
6	IPCC	26MC16	DATABASE MANAGEMENT SYSTEMS	MCA	3	0	1	0	4	70	50	120	3	50	50	100
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8	PCCL	26MCL18	OBJECT ORIENTED PROGRAMMING WITH JAVA LAB	MCA	0	0	1.5	0	1.5	42	3	45	3	50	50	100
9	AEC	26MC19	PROBLEM SOLVING METHODOLOGIES	MCA	0	0	0	0	-	28	32	60	-	50	-	PP
10	NCMC	26MT110	FOUNDATION MATHEMATICS FOR COMPUTER APPLICATIONS #	AS	-	-	-	-	-	42	48	90	-	50	-	50
			TOTAL		17	1	4	0	22	448	362	810	24	500	400	850

Note: **BSC** - Basic Science Course, **PCC** - Professional Core Course, **AEC** - Ability Enhancement Course
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#Bridge Course: Non-Credit Mandatory Course 26MT110 - 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
Scheme 2026 - Batch 2026-28 & 2027-29

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3	PCC	26MC23	26MC23	26MC23	MCA	3	0	0	0	3	42	48	90	3	50	50	100
4	PCCL	26MCL24	26MCL24	26MCL24	MCA	0	0	1	0	1	28	2	30	3	50	50	100
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TOTAL						15	0	5	0	20	350	250	600	26	450	450	
SKILL LABS * (MANDATORY FOR THE AWARD OF THE DEGREE; REFLECTS IN FINAL SEMESTER GRADE CARD)																	
1	AEC	26MCSL20	SKILL LAB - I		MCA	0	0	1	0	1	-	30	30	-	50	-	50

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NOTE: *As per VTU Circular No. VTU/BGM/Skill lab/1016/2026-27/1736, dated 15 July 2026.

SECOND SEMESTER Core Courses	
Course Code	**Course Name**
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26MC22	DESIGN AND ANALYSIS OF ALGORITHMS
26MC23	SOFTWARE ENGINEERING AND AGILE DEVELOPMENT
26MCL24	ADVANCED JAVA LAB
26MCL25	DEVOPS

CYBER SECURITY SPECIALIZATION		DATA SCIENCE SPECIALIZATION		ENTERPRISE APPLICATION DEVELOPMENT SPECIALIZATION	
Course Code	**Course Name**	**Course Code**	**Course Name**	**Course Code**	**Course Name**
26MCCS26	CYBER SECURITY AND ETHICAL HACKING	26MCDS26	ARTIFICIAL INTELLIGENCE AND AGENTIC AI	26MCEA26	ENTERPRISE APPLICATION TESTING AND QUALITY ASSURANCE
26MCCS27	CRYPTOGRAPHY AND NETWORK SECURITY	26MCDS27	DATA SCIENCE AND VISUALIZATION	26MCEA27	AI FOR ENTERPRISE APPLICATIONS
26MCCSL28	ETHICAL HACKING LAB	26MCDSL28	AGENTIC AI LAB	26MCEAL28	SOFTWARE TESTING AND QUALITY ASSURANCE LAB
26MCCSL29	CRYPTOGRAPHY AND NETWORK SECURITY LAB	26MCDSL29	DATA SCIENCE AND VISUALIZATION LAB	26MCEAL29	AI FOR ENTERPRISE APPLICATIONS LAB

Agenda Item 4: APPROVAL OF THE REVISED MCA SCHEME AND SYLLABUS

The Board of Studies is requested to review and approve the revised MCA Scheme and Syllabus for the academic batches 2026–28 and 2027–29, incorporating the applicable VTU directives and the departmental revisions presented in the supplementary agendum.

Resolution: The Board of Studies reviewed the revised MCA Scheme and Syllabus and recommended its approval for implementation, subject to the applicable VTU guidelines and institutional approval procedures.

Agenda Item 5: VOTE OF THANKS

The meeting concluded with a vote of thanks to the Chairperson, all members of the Board of Studies, and the faculty members for their valuable suggestions, constructive discussions, and contributions towards the revision of the MCA Scheme and Syllabus.

The Department expresses its sincere appreciation to all members for their support and guidance in strengthening the academic framework of the MCA programme.

HOD MCA	**VICE-PRINCIPAL (ACADEMICS)**

Head of the Department
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