

STUDENT ASSOCIATION

MASTER OF COMPUTER APPLICATIONS



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**NMAM INSTITUTE
OF TECHNOLOGY**

FROM THE DESK OF HEAD OF THE DEPARTMENT



Dr. Mamatha Balipa,

Professor and Head,

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As the great American educator and author, James A. Garfield, once said, "Next in importance to freedom and justice is popular education, without which neither freedom nor justice can be permanently maintained." With this sentiment in mind, I am delighted to announce the release of our department's annual magazine, which showcases the various activities we conducted for the betterment of our students. This magazine provides a comprehensive overview of the events and initiatives that we organised over the past year to promote popular education and to empower our students with the knowledge and skills they need to succeed. At our department, we believe that education should not be limited to the acquisition of information or the development of skills. We aim to provide our students with a holistic educational experience that fosters their intellectual, social, and emotional growth. To this end, we organise a range of activities that engage our students in experiential learning, critical thinking, and collaborative problem-solving. From field trips and research projects to internships and community service programs, our initiatives are designed to develop our students into active, engaged citizens who are committed to making a positive impact on society. I invite you to peruse our annual magazine and to learn more about the innovative initiatives and inspiring accomplishments of our students over the past year. We are proud of the progress our students have made and the positive impact that our department has had on their lives. As we continue to strive for excellence in education, we remain committed to promoting popular education and to empowering our students to achieve their full potential.

We are also proud to announce that the MCA program at NMAM Institute of Technology is now accredited by the National Board of Accreditation (NBA). It is a testament to the high standard of education that is provided to our students.

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Student Development Program on Research Methodology and Publication

The Department of MCA, in collaboration with the Research Directorate of Nitte Deemed to be University, organized a two-day Student Development Program on Research Methodology and Publication on 30th and 31st January 2025 at the Sambhram Auditorium. The event aimed to enhance students' understanding of academic research practices and publication processes.

The program was inaugurated by esteemed dignitaries including Dr. Praveen Kumar Shetty, Director of Research at Nitte DU, Dr. Vijeesh V., Associate Director of Research, and Dr. Mamatha Balipa, Head of the MCA Department. In his address, Dr. Praveen Kumar Shetty highlighted the importance of maintaining research quality and integrity, setting the tone for the sessions that followed.

Across the two days, the program featured six comprehensive sessions focused on key areas of research methodology. These included the formulation of research questions, conducting literature reviews, publishing research findings, and exploring domain-specific innovations. Notable domains discussed were Artificial Intelligence and Machine Learning, Internet of Things (IoT), Image Processing, Mobile Applications, and Data Analysis.

The sessions were designed to build students' capacity to undertake independent and team-based research. Participants gained insights into both qualitative and quantitative research methods, data collection and analysis techniques, and ethical considerations in research. The program also emphasized the development of effective communication skills through sessions on writing research reports and presenting findings.

Overall, the program significantly contributed to strengthening students' research design abilities, critical thinking, and confidence in academic inquiry.





Tech-KNO'25

The Department of MCA at N.M.A.M. Institute of Technology (NMAMIT), Nitte, in collaboration with Thought Grains Solutions, Udupi, organized a highly engaging and insightful technical intercollegiate fest — Tech-KNO'25 on 7th March 2025. Designed to foster innovation, collaboration, and technical excellence among students, the event brought together aspiring tech enthusiasts from various institutions under one roof.

The fest was inaugurated by Mr. Arunachal Shetty, Co-founder and CEO of Thought Grains Solutions, who delivered an inspiring inaugural address. He motivated students to remain dedicated in their efforts and highlighted the necessity of staying abreast with rapidly evolving technologies. His words resonated with the young minds present, setting a strong tone for the technical fest.

Dr. Niranjana N. Chiplunkar, Principal of NMAMIT, presided over the ceremony. In his address, he urged students to take full advantage of the fest's offerings, especially in understanding how technical events simulate real-world interview and industry scenarios. His remarks underlined the importance of active participation in such platforms to gain career-relevant experience.

Dr. Mamatha Balipa, Head of the MCA Department, welcomed the gathering and shared an overview of the event's purpose and structure. Dr. Spoorthi P. Shetty, co-coordinator of the event, introduced the chief guest, while Dr. Mangala Shetty, event coordinator, proposed the vote of thanks. The event began on a cultural note with a prayer song rendered by Shreyal and Sowjanya, and was hosted efficiently by Vaishnavi.

Tech-KNO'25 featured three rounds of intense technical competition, aimed at testing students' problem-solving skills, technical acumen, and creativity. More than 150 graduate students from multiple colleges participated in the event, making it a dynamic and intellectually stimulating experience.

After a competitive series of tasks, students from NSAMFGC emerged as the winners, receiving a cash prize of ₹10,000. The runner-up team from Alva's College was awarded a cash prize of ₹5,000, recognizing their impressive performance and technical expertise.

The Tech-KNO'25 event delivered several impactful outcomes for its participants. It significantly contributed to skill development, enabling students to gain hands-on experience in areas like coding, robotics, artificial intelligence, and critical thinking. The fest also fostered networking and collaboration, providing students the opportunity to engage with industry professionals, faculty members, and peers, thereby encouraging knowledge exchange and future collaborative prospects. In terms of career opportunities, the competitive nature of the event and interaction with professionals helped boost participants' confidence and employability, with potential for internships or job connections. Moreover, the fest provided recognition and rewards to top performers, enhancing their academic and professional portfolios. It also supported entrepreneurial growth by motivating students to explore innovative ideas and receive feedback from experts. Finally, the competition strengthened

students' problem-solving abilities, improving their decision-making, time management, and adaptability in real-world technical scenarios. Overall, Tech-KNO'25 proved to be an enriching experience that blended learning, innovation, and career development.





Technical Talk on ISRO Space Technology and its applications

The Department of MCA, in association with Institution's Innovation Council (IIC), NMAMIT, organized a Technical Talk on "ISRO Space Technology and its Applications" on 26th March 2025 at the Sambhram Auditorium. The session was delivered by Dr. A.G. Ananth, Former Director of the RESPOND Program at ISRO and currently a Visiting Professor at NMAMIT. The session was formally introduced by Mr. Arhath Kumar, Assistant Professor, MCA Department. The event concluded with a vote of thanks delivered by Ms. Praveena Kumari M.K., and a memento was presented to the speaker by Dr. Mamatha Balipa, Head of the MCA Department.

Dr. Ananth began the session by showcasing some of ISRO's most notable milestones, including the successful completion of missions such as Chandrayaan-3, Mangalyaan, and Aditya-L1, as well as the development of key launch vehicles like PSLV, GSLV, and SSLV. He emphasized India's self-reliant navigation system, NavIC, and its growing significance. The session further delved into satellite systems, categorizing them into communication, remote sensing, and scientific satellites, with detailed discussions on subsystems such as orbit control, thermal management, and antenna systems.

A substantial part of the session was dedicated to explaining the space environment and various orbit types—from low Earth orbits (LEO) to geostationary orbits (GEO)—along with mathematical explanations related to velocity and orbital period calculations. Dr. Ananth also explored the role of AI and image processing in remote sensing, discussing the different levels of data processing, such as noise reduction, segmentation, and object recognition. Real-world applications of AI in feature extraction and resource management within space missions were highlighted, with specific relevance to MCA students.

Further, the talk covered ground systems, focusing on how satellites are tracked and controlled using parameters like azimuth and elevation. A highlight of the session was the presentation of a Chandrayaan mission video, demonstrating the lunar landing sequence, rover operations, and data collection procedures. The session emphasized how key technologies such as image processing and AI play vital roles in space exploration.

This enriching session resulted in multiple valuable outcomes. It enhanced awareness and understanding of ISRO's achievements, technological infrastructure, and the scientific principles that govern space missions. It demonstrated practical applications of space technology across fields such as agriculture, communication, disaster management, and national defense. The talk also sparked interest in research and academic collaboration, encouraging institutions and students to explore project opportunities with ISRO and similar agencies.

In addition, the speaker shed light on entrepreneurial possibilities and private-sector involvement in space technology, including areas like satellite development, data analytics, and space-based services. Participants were informed about ISRO's upcoming missions like

Gaganyaan and the organization's international partnerships, promoting a broader global perspective. Finally, the session offered insights into career opportunities and skill development programs, guiding students on internships, job roles, and training pathways in the space technology sector.

This technical talk effectively bridged the gap between theoretical learning and real-world space applications. It inspired students to explore new domains in science and technology, strengthening skills in problem-solving, innovation, and lifelong learning.



Data Wrangling & Snack Munching Workshop

The “Data Wrangling & Snack Munching” Workshop was conducted on 29th March 2025, from 11:00 AM to 1:00 PM, at Netravati – MCA Seminar Hall, organized by Ms. Premitha Kamath and Ms. Praveena Kumari M.K. from the Department of MCA, NMAMIT. Designed to provide hands-on experience in data preprocessing, the workshop was aimed at students with an interest in data science, machine learning, and artificial intelligence.

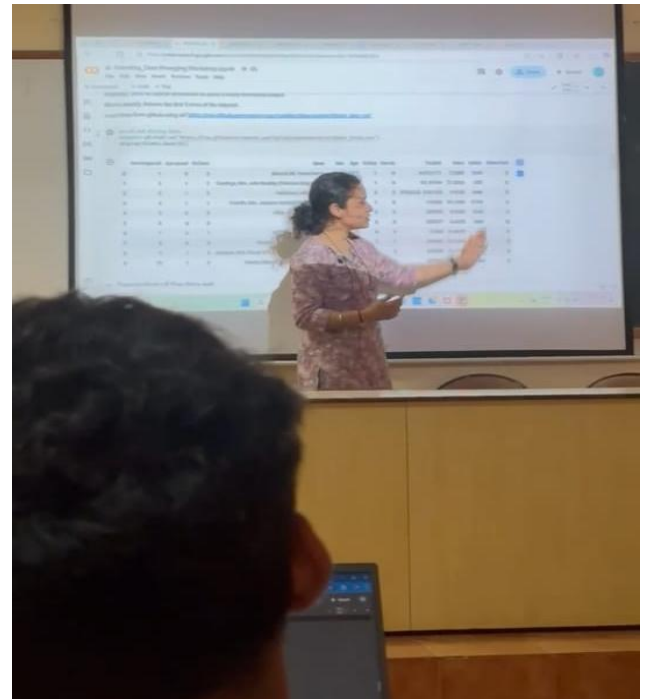
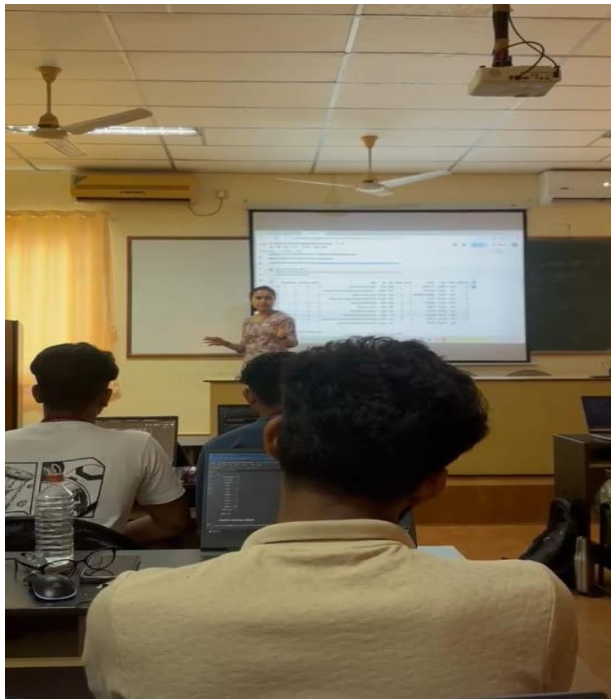
Using the Titanic dataset as a case study, the session covered a range of core data wrangling topics including Exploratory Data Analysis (EDA), data cleaning, outlier detection, and feature engineering, with a strong focus on the application of Python libraries such as Pandas, NumPy, Matplotlib, Seaborn, and Scikit-Learn. The participants engaged in live coding activities, developing practical skills in handling missing values, visualizing data, and preparing it for machine learning models.

An innovative and enjoyable feature of the workshop was the inclusion of a “potluck-style snack session”, where each participant brought snacks to share. This concept fostered a relaxed, collaborative, and fun learning environment, breaking the conventional mold of technical sessions and encouraging interaction among attendees.

The workshop was attended by 35 students, with participation offered on a first-come, first-serve basis. Students actively engaged in the learning process, applying concepts in real-time and sharing positive feedback. Testimonials highlighted the unique blend of learning and enjoyment, with students appreciating the creative approach that combined technical content with an informal, snack-friendly setting.

By the end of the session, participants had gained hands-on experience with preprocessing techniques, developed a clear understanding of data visualization, and learned how to manage common data challenges such as missing values and outliers. The organizers also provided access to a Google Colab notebook (Data Wrangling Workshop_TC.ipynb) to help students revisit and practice the material.

In conclusion, the workshop successfully achieved its goal of making data wrangling approachable and engaging. It not only equipped participants with essential technical skills but also demonstrated how innovative teaching methods can enhance learning experiences. Future sessions could explore advanced topics such as automated preprocessing, feature selection, and the integration of preprocessing within end-to-end machine learning pipelines.



Three-Day Student Development Program Cloud Computing in association with WIPFLI BANGLORE

The Department of MCA, NMAMIT (Nitte DU), in association with Wipfli Bangalore, conducted a Three-Day Student Development Program on Cloud Computing from 9th to 11th April 2025 at the Sambhram Auditorium, NMAMIT. The workshop was organized under the guidance of Ms. Premitha Kamath and Ms. Praveena Kumari M.K., with over 180 MCA students actively participating in the event. The sessions were facilitated by three experienced resource persons from Wipfli: Mr. Debashish Mahapatra, Mr. Muttu Kumar, and Mr. Praveen Subbu, each bringing domain expertise in cloud technologies and enterprise solutions.

The program commenced with a formal inaugural ceremony, followed by a session led by Mr. Debashish Mahapatra, who introduced the participants to the fundamentals of Cloud Computing. Topics included cloud service and deployment models (IaaS, PaaS, SaaS; Public, Private, Hybrid), advantages of cloud architecture, and real-world applications through platforms like AWS and Azure. He used relatable examples such as online storage, streaming services, and collaborative tools to explain cloud functionalities, further emphasizing the growing reliance on cloud systems in modern software development and infrastructure management.

On Day 2, the sessions deepened with a review of cloud concepts and a dive into Big Data technologies, Azure SQL Database, Cosmos DB, and schema design approaches such as Schema on Read vs. Schema on Write. Mr. Praveen Subbu conducted a hands-on workshop on Azure Subscription and Data Factory, introducing tools like Databricks Foundation Model, data profiling, and workflow automation. He also guided participants through a practical demonstration of creating and managing agents and explained key differences between relational and NoSQL systems.

Day 3 began with a session by Mr. Muttu Kumar, who presented Azure cloud infrastructure, including DNS, Load Balancer, Azure Active Directory, and serverless computing using Azure Functions. He explained how Azure services can be used to simplify application hosting, management, and scaling. A practical deployment demo using Visual Studio Code and Azure Web App Services gave students hands-on exposure to modern DevOps practices and CI/CD pipelines. This was followed by a well-guided coding session, where participants implemented and deployed a web application on Azure, enhancing their confidence in cloud-based application development.

The final session, conducted by Mr. Debashish Mahapatra, shifted focus to Amazon Web Services (AWS). Students learned how to create and configure S3 buckets, EC2 instances, Lambda functions, and integrate them with DynamoDB. The session also introduced Python scripting with Boto3, through which participants built a basic data visualization application, offering a comprehensive view of serverless architecture and cloud resource automation.

The valedictory program was held on the final day at 3:30 PM. Ms. Mamatha Balipa, Professor and Head of the Department, along with the coordinators, commended the resource persons and the enthusiastic participation of students. Select students shared their positive experiences and key takeaways from the program. Tokens of appreciation were presented to the resource persons, and the event concluded with a vote of thanks delivered by Ms. Premitha Kamath.

The three-day workshop on Cloud Computing provided students with a comprehensive understanding of cloud service and deployment models, including IaaS, PaaS, SaaS, and Public, Private, Hybrid, and Community cloud infrastructures. Participants gained hands-on experience with prominent cloud platforms such as Microsoft Azure and Amazon Web Services (AWS), learning to work with tools like Azure Data Factory, Azure SQL, Cosmos DB, Databricks, and Snowflake. Through guided coding sessions, students developed practical skills in managing Azure subscriptions, deploying applications via Visual Studio Code, and automating data workflows using cloud services. The inclusion of real-time demonstrations and scripting with Python (using Boto3) for AWS services further strengthened their technical capabilities. The workshop also emphasized the importance of modern DevOps practices by introducing CI/CD pipelines and serverless computing using Azure Functions and AWS Lambda. By the end of the program, students had not only acquired valuable technical skills but also gained insights into real-world enterprise applications and data engineering practices. The event successfully bridged the gap between academic learning and industry expectations, fostering confidence, hands-on proficiency, and a forward-looking perspective on cloud-based career opportunities.





Shaping Your Tech Career: Opportunities with Salesforce

As part of the National Technology Day Celebrations, the Institution's Innovation Council (IIC), in collaboration with the Department of MCA, NMAMIT, organized an insightful and motivational career guidance session titled "Shaping Your Tech Career: Opportunities with Salesforce" on 8th May 2025 at the MCA Seminar Hall, NMAMIT, Nitte (Deemed to be University). The session was conducted in offline mode and witnessed active participation from 74 students and 4 faculty members.

The session was delivered by Ms. Pranathi Chaithanya Padyana, a Salesforce Developer at Autodesk, who shared her industry experience and provided strategic guidance to students on building a successful career in the tech industry. The objective of the session was to help students plan their careers early, acquire relevant technical and soft skills, and leverage platforms like Salesforce Trailhead, GitHub, LeetCode, and Kaggle to build a strong professional portfolio.

Ms. Pranathi emphasized the importance of foundational skills in programming (Java, Python), Data Structures and Algorithms (DSA), and Database Management Systems (DBMS). She also highlighted the growing demand for professionals in domains like Salesforce, DevOps, and Cloud technologies, and introduced students to Trailhead, Salesforce's gamified learning platform. She explained how Trailhead can be used to gain hands-on experience in CRM concepts, Apex programming, and Lightning components, while also earning Superbadges and certifications to enhance employability.

The session also covered practical tips for excelling in technical and HR interviews, resume building, and the value of certifications such as Salesforce Admin and AWS Cloud Practitioner. Ms. Pranathi discussed the various career paths available in the Salesforce ecosystem—including roles such as Administrator, Developer, Consultant, Architect, and Analyst—and guided students on how to build a Trailblazer profile to showcase their learning and credentials.

The event was highly interactive, with students enthusiastically participating in the Q&A segment. The speaker's insights were both motivational and actionable, providing a clear roadmap for students preparing for internships and placements.

The session was coordinated by Mr. Arhath Kumar and Ms. Praveena Kumari M. K., Assistant Professors in the MCA Department. Dr. Mamatha Balipa, Professor and Head of the Department, addressed the gathering and shared her thoughts on industry readiness and future-focused learning.

Overall, the session was successful in meeting its objective of empowering students to make informed decisions about their tech careers. It offered clarity on emerging opportunities, strategic skill-building, and industry-recognized learning tools. The session served as a timely and valuable contribution to students' professional development.



Four-Day Workshop on Flutter Framework for Cross-Platform App Development

The Department of MCA, NMAM Institute of Technology, Nitte, organized a four-day workshop on the Flutter framework from 12th to 15th June 2025. The sessions were conducted by Mr. K Shahiz S Moidin, a final-year MCA student at NMAMIT, well known for his practical expertise in mobile application development. The workshop commenced with an inaugural session on 12th June 2025, where Dr. Mamatha Balipa, Head of the Department, welcomed the gathering and spoke about the growing importance of mobile development skills and the relevance of frameworks like Flutter in today's software industry. The session began with a prayer by Ms. Pratheeksha, followed by an introduction of the resource person by Mr. Pranamya Jain. In his address, Mr. Shahiz highlighted the significance of hands-on learning and encouraged students to work on independent projects to boost their academic and professional growth. The workshop was coordinated by Ms. Ashwini K M, Assistant Professor, who ensured the smooth conduct of sessions and active participation of students. Ms. Chandushree B proposed the Vote of Thanks, and Ms. Kavyashree Karanth served as the Master of Ceremony.

Throughout the four days, students participated in interactive sessions and practical coding activities that focused on a wide range of topics including an overview of Flutter and Dart, setting up the development environment, designing user interfaces with widgets, handling forms and input validation, state management, connecting to APIs and parsing JSON, routing and navigation, integrating Firebase, app debugging, and deployment. By the end of the workshop, students acquired practical knowledge of cross-platform mobile app development, gained familiarity with the Dart language and Flutter framework, and built and tested interactive mobile app prototypes. They also learned how to handle real-time data using APIs and Firebase, improved their problem-solving and teamwork skills, and felt motivated to pursue careers in mobile app development and related fields. The workshop effectively contributed to achieving the program outcomes PO1, PO2, PO3, PO4, PO5, PO6, and PO8.





Four-Day Student Development Program on Full Stack Development using MERN Stack

The Department of MCA, NMAM Institute of Technology, Nitte, in association with WENAMITAA (NMAMIT Alumni Association), organized a four-day Student Development Program on Full Stack Development using the MERN Stack from 18th to 21st June 2025. The sessions were conducted by Mr. Vijay B R and Mr. Mahadev Prasad from Mevi Technologies LLP, Bengaluru, who brought their strong industry experience and technical expertise to guide students through practical aspects of building web applications using MongoDB, Express.js, React.js, and Node.js.

The program began on 18th June 2025 with an inaugural session where Dr. Mamatha Balipa, Head of the Department of MCA, welcomed the gathering and spoke about the increasing demand for full stack developers in the current job market. The session started with a prayer by Ms. Kavyashree Karanth, a 2nd semester MCA student, followed by a lamp lighting ceremony conducted by Mr. Vijay B R, Mr. Mahadev Prasad, Dr. Mamatha Balipa, Ms. Raksha Puthran, and Ms. Ashwini K M. After this, Mr. Pranamy Jain, 2nd semester MCA student, introduced the resource persons. In his inaugural address, Mr. Vijay B R shared insights into the growing opportunities in full stack development, encouraged students to build real-time projects, and highlighted the importance of staying updated with evolving technologies. Ms. Kavyashree Karanth delivered the Vote of Thanks, expressing gratitude to all dignitaries, coordinators, and participants, while Ms. Shamitha Shetty, 2nd semester MCA student, served as the Master of Ceremony. The program was coordinated by Ms. Raksha Puthran and Ms. Ashwini K M, Assistant Professors in the Department of MCA, who ensured smooth execution and active participation throughout the event.

Over the four days, participants engaged in hands-on coding sessions, live demonstrations, and collaborative mini projects covering topics such as an introduction to the MERN stack and full stack architecture, database operations using MongoDB, API development with Express.js, designing front-end interfaces using React.js, server-side scripting with Node.js, connecting client and server components, implementing authentication and security, deploying applications with GitHub and Heroku, debugging, and project management techniques. Through this program, students developed a strong foundation in full stack web development, gained practical experience in building and deploying real-time applications, and learned about modern development workflows including authentication, routing, and version control. They also improved their technical collaboration and project organization skills, felt better prepared to take up internships and real-world software projects, and were motivated to adopt a mindset of continuous learning and application development. The program contributed to achieving the program outcomes PO1, PO2, PO3, PO4, PO5, PO6, and PO8.



Comprehensive Placement Readiness Program



The Placement Training Program was organized by Abhyuday, the Placement Department of NMAM Institute of Technology (NMAMIT), for the first-year MCA students in collaboration with 10 Seconds Company. The primary objective of this program was to provide students with comprehensive preparation, skill enhancement, and professional guidance to help them perform effectively during campus placements. The training sessions were conducted from July 14th to July 31st, spanning over two weeks of intensive learning and practice. The program covered a wide range of modules, including technical training, where students were introduced to important programming concepts, problem-solving techniques, and software development fundamentals. The aptitude development sessions focused on improving logical reasoning, quantitative ability, and verbal skills, which are essential components of most placement tests. In addition to technical and aptitude training, the program also included communication and interview preparation sessions, where students were guided on resume building, group discussions, and personal interviews. These sessions helped students gain confidence and develop a professional attitude towards corporate interactions.

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