Where Creativity Thrives and Holistic Development Blossoms

DEPARTMENT OF MCA
AJAY KUMAR GARG ENGINEERING COLLEGE

Website: www.akgec.ac.in

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Creative • Student-Centric • Academic Excellence

Message from the Advisor's Desk

It gives me great pleasure to present this issue of the MCA departmental newsletter NAVDRISHTI, which reflects the academic vibrancy, achievements, and collective efforts of our faculty and students. The department continues to grow through quality teaching, innovative research, industry engagement, and active participation in co-curricular and extension activities.

I appreciate the dedication of the faculty members who consistently strive for academic excellence and the enthusiasm of our students who bring laurels to the department through their hard work and commitment. Such initiatives not only enhance individual competence but also strengthen the academic reputation of the institution.

I encourage all members of the academic community—faculty, students, and staff—to make the best use of the opportunities provided, remain inquisitive, and continuously reskill and upskill themselves to meet the evolving demands of academia and industry. I urge everyone to uphold the core values of discipline, integrity, and lifelong learning. I extend my sincere appreciation and best wishes to the editorial team for their dedicated efforts in bringing out this newsletter and wish the department continued success in all its future endeavours.

Dr. Amita Dev

Message from the Director

It is a matter of great pride to witness the release of this edition of the MCA Department Newsletter. The department's progress in academics, technology, and cultural activities reflects the dedication of our faculty members and the enthusiasm of our students.

This newsletter not only highlights the department's achievements but also encourages students to develop technical writing, innovation, and teamwork skills—qualities that are essential for their professional growth.

In today's dynamic educational landscape, innovation and adaptability are crucial. I am pleased to see our students actively participating in research, competitions, and community-driven initiatives that nurture both technical competence and character development. Our faculty members continue to play a pivotal role in mentoring and guiding students, ensuring they remain aligned with emerging industry trends.

I congratulate the Head of the Department, faculty members, and the editorial team for their sincere efforts in bringing out this publication. May this newsletter continue to inspire creativity, collaboration, and excellence in the years to come.

Dr. Hemant Ahuja

Message from the HOD

It gives me immense pleasure to extend my warm greetings on the release of our Department Newsletter. This publication reflects the collaborative spirit, academic excellence, and creative expression that define the Department of MCA. Over the past year, our department has witnessed remarkable achievements by both students and faculty, highlighting a strong culture of learning, research, and holistic development.

Our students have demonstrated outstanding initiative and commitment, resulting in more than 30 placements in reputed organizations such as Accenture, Infosys, Nagarro, Intellipaat, and Ed-Vedha, with packages reaching up to ₹9 LPA. These accomplishments stand as a testament to their dedication, perseverance, and industry-ready skill sets. Equally commendable are the contributions of our faculty members, whose mentorship and research orientation have played a pivotal role in nurturing student potential.

Faculty–student collaboration has led to significant research outcomes, including 23 patents and more than 20 publications in Scopus-indexed journals, conferences, books, and book chapters. Faculty members have also actively enhanced their expertise through participation in numerous Faculty Development Programs organized by reputed institutions.

The department further strengthened its academic and research ecosystem by successfully organizing impactful faculty development and academic initiatives during the year. These efforts have significantly enhanced teaching quality, research orientation, and institutional visibility.

I sincerely appreciate the editorial team for their dedicated efforts in bringing together diverse voices and presenting them thoughtfully. Let this newsletter serve as a source of inspiration and a reflection of our shared vision—to build a vibrant learning ecosystem that empowers every student and encourages innovation.

Wishing everyone continued success, growth, and excellence.

Dr. Saroj Bala

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From the Editorial Team

It is with great pleasure that we present this edition of **NAVDRISHTI**, the departmental newsletter of the **Master of Computer Applications (MCA) Department**. This publication reflects the department's academic excellence, technological progress, and commitment to innovation.

NAVDRISHTI functions as a comprehensive record of departmental progress, showcasing academic initiatives, research activities, industry collaborations, and student achievements. Developments in infrastructure and computing laboratories, expert lectures, industrial visits, technical workshops, and faculty student engagement are documented to highlight the department's sustained efforts toward excellence in teaching, learning, and research.

This edition also features faculty accomplishments in research, publications, patents, and professional recognition, underscoring the department's commitment to scholarly growth and knowledge creation. Student involvement in technical competitions, internships, placements, sports, and co-curricular activities further reflects the department's emphasis on holistic development.

We express our sincere gratitude to the **Head of the Department, MCA**, for continued guidance and leadership, and to all faculty members, students, contributors, and coordinators whose efforts made this publication possible.

We trust that **NAVDRISHTI** will inform and inspire its readers and welcome your valuable feedback and continued support.

Warm Regards

Editorial Team NAVDRISHTI
Department of MCA, AKGEC, Ghaziabad

DEPARTMENTAL HIGHLIGHTS

Achievements of the department in the past semester/year

The Department of MCA witnessed exemplary achievements by both students and faculty, highlighting a strong culture of academic excellence, research, and holistic development. Students secured **30+ placements** in leading organizations such as Accenture, Infosys, Nagarro, Intellipaat, and Ed-Vedha, with packages up to **₹9 LPA**. Faculty–student collaboration led to significant research outcomes, including **23 patents (22 published, 1 granted)** and **22+ publications** across Scopus-indexed journals, conferences, books, and book chapters. Faculty members also actively enhanced their expertise by participating in numerous **FDPs** organized by ATAL, NITTTR, and other reputed institutions. Together, these accomplishments reflect the department's commitment to innovation, industry relevance, research-driven teaching, and comprehensive student–faculty development.

The Department of MCA strengthened its academic and research ecosystem through impactful faculty development initiatives during the year.

The MCA Department successfully organized an AKTU-sponsored one-week FDP on "Research & Development in Machine Learning / Deep Learning" from 05–09 August 2024. The programme enhanced participants' understanding of ML/DL fundamentals, mathematical foundations, and real-world applications in areas such as cyber-attacks, trust management, and research ethics, along with hands-on Python sessions. The FDP included expert talks by Dr. Anurag Singh (NIT Delhi), Dr. Divakar Yadav (IGNOU, Delhi), Dr. Mansaf Alam (JMI, Delhi), and Dr. Karan Singh (JNU, Delhi), among other distinguished speakers, making it highly enriching learning experience.

In collaboration with Hansraj College, University of Delhi, the department contributed to the 8-day Malaviya Mission Teacher Training Programme (MMTTP) on NEP Orientation and Sensitization, conducted from 14-24 October 2024, with nearly 150 participants. The programme enhanced participants' understanding of NEP 2020 and its implementation in higher education. Through expert talks and interactive sessions, it facilitated capacity building, strengthened academic leadership, and encouraged learner-centric and multidisciplinary teaching practices. Overall, it equipped educators with practical insights to align curriculum planning and pedagogy with NEP goals.

These initiatives enhanced teaching quality by updating faculty knowledge and pedagogy, strengthened research orientation through exposure to advanced methodologies and ethical practices, and improved institutional visibility via collaboration with reputed institutions and national programmes, contributing to better learning outcomes, academic networking, and the department's recognition at regional and national levels.

Key Outcomes and Highlights

- Enhanced faculty expertise in Machine Learning and Deep Learning concepts and applications
- Strengthened research orientation and ethical research practices
- Improved hands-on proficiency in Python and data-driven methodologies
- Exposure to expert insights from reputed national institutions
- Capacity building aligned with NEP 2020 objectives
- Promotion of learner-centric and multidisciplinary teaching approaches
- Strengthened academic leadership and institutional visibility

Community outreach:

Objective:

To foster the habit of healthy reading among students, **AKTU University** launched a program titled **पढ़े महाविद्यालय / बढ़े महाविद्यालय**. As a part of this program, all students, faculty, and staff members took a pledge for **"दहेज मुक्त भारत"** and **"नशा मुक्त भारत"** at 12:15 PM on 07 March 2025. In addition to this, the people from adopted villages were also involved to make them aware and part of this. A team of college faculty, staff and students including **Dr. Saroj Bala, HOD**, Mr. Mukulit Goel, Assistant Professor, Mr. Jai Prakash Panwar, Lab Technician, Department of MCA, visited the village panchayat ghar and a school to conduct the pledge. Many villagers took the pledge at the panchayat ghar and the school.

Outcome: 76 persons from **Galand village** took the pledge and registered for AKTU's initiative for Women's Day 2025. The student volunteers interacted with village people in the panchayat ghar and discussed their challenges in studies.

Students Participated: *RISHABH CHAWLA, SHUBHAM SINGH, VINEET KUMAR PANDEY, PALAK SHARMA, NISHITA SHARMA*

MCA Laboratory System Configuration Overview

The MCA Laboratory offers a modern, research-ready computing environment that supports academic learning, programming, and advanced software development. Each workstation is powered by an HP Desktop 280 4G Micro tower with an Intel® Core™ i5-8500 (3.00 GHz) processor, ensuring smooth multitasking for coding, simulations, and project execution. With 8 GB RAM and a 1 TB HDD, the systems provide reliable performance and ample storage for student projects, datasets, and software tools used in the MCA curriculum.

Equipped with 18.5-inch TFT monitors, along with HP keyboards and optical mice, the lab ensures comfortable usage during extended practical sessions. With a total of 66 systems distributed across MCA-1 and MCA-2 labs, the facility enables collaborative learning and supports research-oriented activities such as data analytics, software testing, database management, and emerging technology experimentation, creating a strong foundation for innovation and skill development.

In summary, the MCA Laboratory stands as a vital academic resource that significantly enhances teaching–learning processes and practical skill development. Its modern infrastructure enables students to experiment with contemporary technologies, complete industry-oriented projects, and engage in research activities with confidence. By providing a reliable, high-performance computing setup, the lab fosters innovation, collaboration, and problem-solving abilities, preparing students to meet professional challenges and contribute effectively to the evolving field of computer applications.

EVENTS ORGANIZED

Departmental UHV Seminar Conducted

The "Departmental UHV Seminar" was conducted as part of the department's regular initiative with the key motive of promoting Universal Human Values (UHV) and nurturing ethical thinking, personal well-being, and social responsibility among participants. The seminar aimed to inspire a spirit of sustainable living by encouraging reflection on value-based decision-making, harmony in relationships, and responsible use of natural resources. Through thoughtful discussions and practical insights, attendees gained a deeper understanding of how conscious choices lead to a more meaningful, balanced, and sustainable lifestyle. This ongoing initiative continues to guide individuals toward mindful living and positive societal contribution.

FACULTY NAME	UHV SEMINAR TOPIC	SEMINAR DATE
Mr. Mukulit Goel	Feelings in relationship (Reverence)	15-12-2025
Ms. Shruti Jain	Role of Sanskars in Holistic Development	25-10-2025
Mr. Dheeraj Kumar Singh	Holistic Health	24-10-2025
Ms. Mani Dublish	Trust	19-06-2025
Mr. Avanish Srivastava	Respect	27-05-2025
Ms. Babita	Feeling of Trust	22-04-2025
Ms. Arpna Saxena	Program to ensure self-regulation and health	17-04-2025
Ms. Pooja Pandey	Respect-Right Evaluation	25-03-2025
Ms. Aman Gupta	Understanding Happiness and Prosperity	30-01-2025

Departmental Research Seminar Conducted

The "Departmental Research Seminar" was conducted as part of the department's ongoing initiative to strengthen the research culture among faculty. The seminar provided a platform for educators to share their scholarly work, discuss emerging trends, and refine research perspectives. Through meaningful exchanges and constructive feedback, faculty members enhanced their academic insight and identified new opportunities for collaborative inquiry. These ongoing activities consistently promote professional development, encourage innovation, and strengthen research-oriented thinking. They inspire participants to explore new ideas and adopt advanced practices. Overall, they cultivate a sustained commitment to meaningful and impactful research.

FACULTY NAME	RESEARCH SEMINAR TOPIC	SEMINAR DATE
Mr. Dheeraj Kumar Singh	Predictive Analysis of a holistic and sustainable education approach using clustering	10-12-2025
Ms. Arpna Saxena	Detecting Integrity Attacks in IoMT	08-11-2025
Ms. Pooja Pandey	Pathway to Green AI	29-05-2025
Ms. Aman Gupta	Cyber Security in IoVT	23-04-2025
Mr. Avanish Srivastava	Challenges in Mobile Computing	23-04-2025
Dr. Saroj Bala	Understanding Transformers	12-04-2025
Ms. Shruti Jain	Secure IoT using Machine Learning	28-03-2025
Ms. Mani Dublish	Crop Yield prediction using ML methods	30-01-2025
Ms. Babita Rajput	IoT: Energy Efficiency	24-01-2025

Guest Lectures Conducted in the Department

The Department of MCA regularly invites distinguished experts from diverse domains to campus to deliver guest lectures that bridge the gap between classroom learning and evolving industry expectations. These sessions are highly important in the current and future technology landscape, where rapid advancements in AI, cybersecurity, and data-driven systems demand continuous upskilling and real-world awareness.
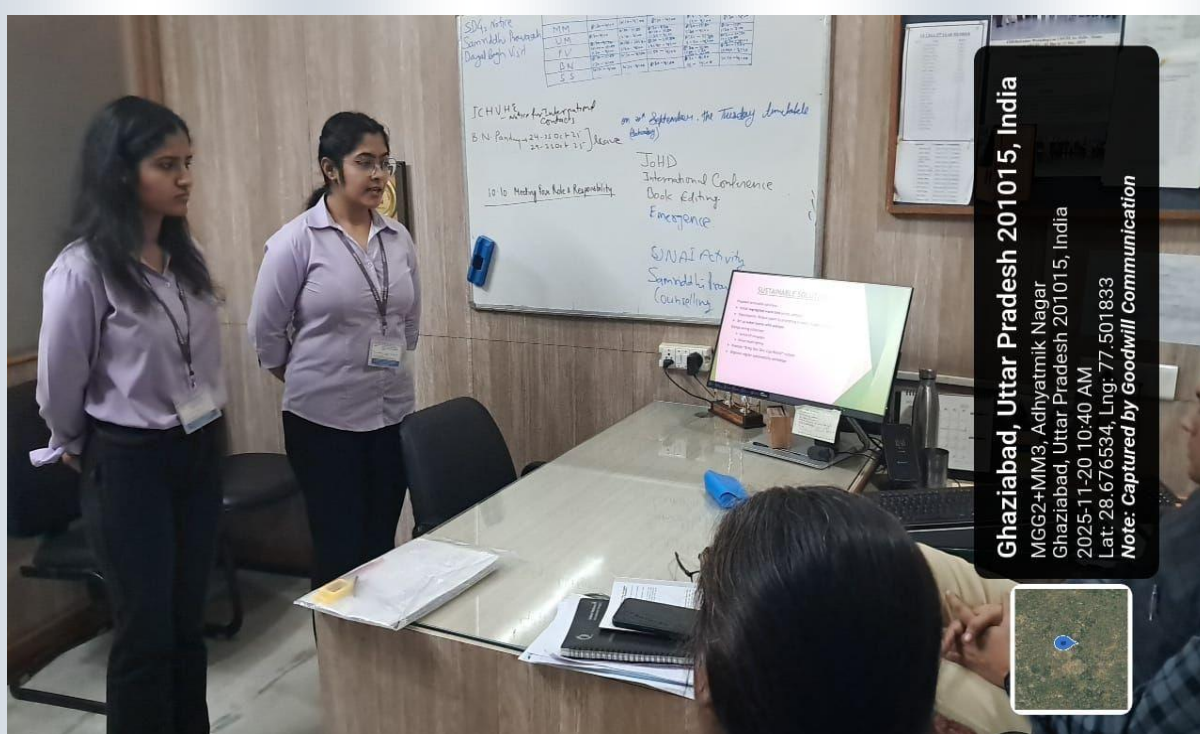
As part of this initiative, Dr. D.K. Lobiyal (Professor, CS Department, JNU) delivered a session on Natural Language Processing (NLP) on 22-05-2025, highlighting how NLP is shaping modern applications such as chatbots, search engines, sentiment analysis, and intelligent automation. The lecture offered key insights into language-based AI systems and motivated students to explore research and innovation in this rapidly growing area. Further strengthening industry relevance, Dr. Reema Thareja (Assistant Professor, CS Department, School of Open Learning, University of Delhi) conducted an expert talk on AI in Cyber Security on 29-10-2025, emphasizing the importance of AI-driven threat detection, predictive security, and safeguarding digital infrastructure in future-ready environments. Both sessions were attended by MCA students and served as valuable takeaways in terms of enhanced technical understanding, interactive learning and improved readiness for emerging technology careers.

UNAI Events Organised: SDG Awareness Quiz and Presentations Inspire MCA Students

The Department of MCA successfully conducted the Sustainable Development Goals (SDG) Awareness Quiz on 31 October 2025 at 10:10 AM under the United Nations Academic Impact (UNAI) initiative. Designed to deepen students' understanding of the UN-identified SDGs, the quiz encouraged participants to engage with global sustainability challenges and reflect on their role in shaping a better future. A total of 96 enthusiastic MCA First-Year students took part in the event, demonstrating keen interest and awareness.

Adding further depth to the initiative, MCA Second-Year students delivered compelling presentations highlighting the importance of SDG adoption, responsible consumption, and sustainable living practices. Their efforts enriched the session by offering real-world insights and inspiring peers toward mindful, sustainable choices.

Certificates of Achievement will be awarded to top performers. The Department extends sincere appreciation to all students for their active participation, which made the awareness programme a meaningful and impactful success.

Events organized under the Parivriddhi society from 1st January 2025 till date

Code Craft Challenge

The **Code Craft Challenge**, a premier coding competition for MCA students, was organized under the aegis of the **Parivriddhi Society on 15th January 2025**. This event aimed to foster a spirit of innovation and technical excellence among students by challenging their programming skills and problem-solving abilities. A total of 60 students participated, of whom 22 qualified for the final round.

The event concluded with the results announced by the **Department head, Dr. Saroj Bala and the Parivriddhi Society coordinator, Ms. Shruti Jain**. The participants' enthusiasm and performance underscored the event's success, reaffirming the Parivridhi Society's dedication to academic and professional growth.

Social media link: https://www.facebook.com/share/p/18M7c1i5Lb/

Business Pitch Competition

The MCA Department under the banner of the Parivriddhi Society successfully organized a **Business Pitch Competition** on **26th March 2025**. The event provided a platform for final-year students to showcase their innovative startup ideas, entrepreneurial thinking, and problem-solving skills. The primary aim of the competition was to encourage students to think creatively, assess market needs, and present feasible and scalable business models.

Several teams participated, presenting a diverse range of tech-based startup ideas addressing real-world challenges. Each team was given 10 minutes to pitch their idea, followed by a Q&A session with the panel of judges, comprising the faculty members. The presentations were judged based on **Innovation, Feasibility, Market Potential, Presentation Clarity**, and **Teamwork**.

The event concluded with a formal announcement of results by the **Head of Department (HOD)**, Dr. Saroj Bala, who appreciated the enthusiasm, creativity, and research demonstrated by all the participants. She encouraged students to take such ideas forward, refine them with mentorship, and consider incubation or startup funding opportunities. The event was a resounding success and served as a motivating experience for all aspiring entrepreneurs in the department.

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Tech Talk

The Parivriddhi Society of the MCA Department organized a vibrant and intellectually stimulating **Tech Talk event** on **16th April 2025** featuring MCA students as the speakers, presenting on a range of trending technological topics.

The objective of the event was to encourage peer learning, build confidence in public speaking, and enhance awareness of emerging technologies among students. Participants showcased their research and understanding through well-prepared presentations on Generative AI, Blockchain, Cybersecurity in the Age of IoT, etc.

Each speaker was allotted a specific time slot, followed by short Q&A sessions that sparked curiosity and interactive discussion among attendees. The talks reflected the students' in-depth research, presentation skills, and passion for technology.

The session was well-attended by students and faculty members, with the **Head of the Department, Dr. Saroj Bala, and Parivriddhi coordinator Ms. Shruti Jain** commending the student speakers for their efforts and knowledge. In her address, she highlighted the importance of staying updated with technological advancements and praised the initiative for fostering a self-driven learning culture.

The event concluded with a vote of thanks and distribution of awards to the student speakers. The Tech Talk proved to be a successful platform for students to express, explore, and engage with the ever-evolving tech landscape.

Orientation programme for the 3rd semester students

The Department of MCA at Ajay Kumar Garg Engineering College organized an orientation programme on **22nd August 2025 for 3rd-semester students** to introduce them to important academic guidelines and institutional expectations. Conducted by Prof. Saroj Bala, the session emphasized punctuality, mandatory reporting before 8:30 AM, and the impact of late arrival on GP marks. Students were briefed on the requirement to maintain at least 75% attendance to be eligible for sessional tests (STs) and pre-university tests (PUTs), with defaulters facing debarment and parental notification. They were also informed about awards for toppers, the book bank facility, and mandatory PDP attendance for placement eligibility.

The assessment structure—including STs, PUTs, and tutorials—was explained clearly. Students received detailed minor project guidelines, including group formation, weekly monitoring, and scheduled presentations on 28th August, 22nd September, and 12th November. They were also reminded of important deadlines such as Patent IDF submission on 30th September and proof of research paper submission on 15th October.

The departmental society "Parivriddhi" presented its activity calendar featuring events like Project Prism and Tech Canvas. Students were encouraged to participate in college-level activities such as hackathons, cultural programmes, sports events, and UNAI initiatives. Overall, the orientation prepared students for a disciplined, engaging, and productive semester.

Orientation programme for the 1st year students

The Orientation Programme for the MCA Batch 2025–27 was held on **18th and 22nd September 2025**, organized by 2nd-year students to welcome freshers and introduce them to the college and department. The session on 18th September began with peer introductions, helping new students settle in, followed by an inspiring address by Dr. Amita Dev, Advisor, AKGEC. She encouraged students to stay updated with advancements in AI, Machine Learning, Web Development, and related technologies, motivating them to remain focused and make the most of available opportunities. A UHV session by Prof. Gopal Babu guided students on integrating academic growth with human values like happiness and respect. After lunch, an interactive session between seniors and freshers helped build connections, and the day concluded with a campus tour highlighting key facilities.

The session on 22nd September focused on orienting students with institutional policies and introducing them to the MCA department. Prof. Saroj Bala, Head of Department, shared the department's vision, introduced faculty members, and emphasized discipline, academic sincerity, and early placement preparation. Her address set a positive and determined tone for the upcoming journey. Gratitude was extended to the AKGEC management, Director General Dr. R.K. Agarwal, and Director Dr. Hemant Ahuja for their support in ensuring the smooth conduct of the programme.

Key Highlights of Orientation Programmes

- Orientation sessions conducted for **3rd semester students (22 August 2025)** and **MCA Batch 2025–27 (18 & 22 September 2025)** to familiarize students with academic and institutional expectations.
- Emphasis on **discipline, punctuality, attendance requirements (75%)**, and their impact on assessments and eligibility.
- Clear explanation of the **assessment structure**, including STs, PUTs, tutorials, and minor project evaluation.
- Detailed briefing on **minor project guidelines**, presentation schedules, and important academic deadlines.
- Introduction to **departmental initiatives and student activities** through the society *Parivriddhi*.
- Motivational and value-based sessions covering **emerging technologies, career readiness, and human values (UHV)**.

STUDENT ACHIEVEMENTS

Academics

Our students make us proud again at the convocation ceremony held in April 2025 for the Batch 2023–24. Three students were honoured for their outstanding academic performance. Devesh Srivastava secured the 1st position, Riya Garg achieved the 2nd position, and Saloni earned the 3rd position, each receiving a cash prize in recognition of their excellence. Their remarkable achievements reflect consistent hard work, dedication, and academic discipline. The department is proud of these achievers, as they have once again brought laurels to the MCA programme and inspired their peers to strive for excellence.

Placements

During the academic session, our campus witnessed an active and successful recruitment drive with around 20 reputed companies visiting Ajay Kumar Garg Engineering College for campus placements. Leading organizations from diverse domains such as IT services, software development, product engineering, consulting, and finance participated in the recruitment process. Our MCA students secured placements in various esteemed companies, demonstrating strong technical skills, professional discipline, and readiness for industry roles. The dedicated efforts of the Training & Placement Cell, continuous training programs, and rigorous academic support have significantly contributed to this accomplishment. This achievement reflects the strong industry–academia relationship and reinforces the commitment of the department towards building successful careers for students.

The Department of MCA, Ajay Kumar Garg Engineering College, is proud to announce the remarkable achievement of our students in the current placement session. The following section presents the detailed list of students who have been successfully placed along with the respective companies. We congratulate all students for their accomplishments and extend best wishes for their professional journey ahead.

Student Name	Program / Branch	Company / Organization	Package -CTC (LPA)	Placement Type (On/Off Campus)
RIYA CHAUDHARY	MCA	ACCENTURE	4.58	ON
CHIRAG	MCA	INFOSYS	3.6	ON
RITIKA	MCA	INFOSYS	3.6	ON
NISHITA	MCA	INFOSYS	3.6	ON
MOHIT	MCA	INFOSYS	3.6	ON
AYUSH MISHRA	MCA	INFOSYS	3.6	ON
SANDEEP NEGI	MCA	INFOSYS	3.6	ON
SHIVANI GARG	MCA	NAGARRO	4.5	OFF
KUNAL PAL	MCA	NEWGEN SOFTWARE	4.25	ON
ABHISHEK BHARDWAJ	MCA	DIREC ERP	4	ON
LAKSHAY GUPTA	MCA	CREDEX TECHNOLOGIES	5	ON
MANAS MRADUL	MCA	INTELLIPAAT	9	ON
AKASH SHARMA	MCA	INTELLIPAT	9	ON
ABHYUDYA	MCA	INTELLIPAT	9	ON
CHIRAG	MCA	CORIZO	6.5	ON

ADITYA KUMAR GUPTA	MCA	INTRAINZ INNOVATION PVT LTD	6.5	ON
HRITIK KUMAR	MCA	INTRAINZ INNOVATION PVT LTD	4	ON
RISHABH CHAWLA	MCA	INTRAINZ INNOVATION PVT LTD	4	ON
VINEET KUMAR PANDEY	MCA	INTRAINZ INNOVATION PVT LTD	4	ON
HARSH SINGH	MCA	ED- VEDHA	8	ON
TANYA SINGHAL	MCA	ED- VEDHA	8	ON
PALAK SHARMA	MCA	ED- VEDHA	8	ON
KRITI GUPTA	MCA	ED- VEDHA	8	ON
PRANJUL SHUKLA	MCA	ED- VEDHA	8	ON
PRANJAL SHRIVASTVA	MCA	VINFOCOM IT SERVICES PVT LTD	4	OFF
VIPUL KUMAR	MCA	VINFOCOM IT SERVICES PVT LTD	4	OFF
UDIT GUPTA	MCA	VINFOCOM IT SERVICES PVT LTD	4.5	OFF
AASHI SHARMA	MCA	VINFOCOM IT SERVICES PVT LTD	3.6	OFF
PALAK SHARMA	MCA	VINFOCOM IT SERVICES PVT LTD	4	OFF
MAYANK SAINI	MCA	VINFOCOM IT SERVICES PVT LTD	4	OFF
PRANJUL SHUKLA	MCA	RV UNIVERSITY, KARNATAKA	5	OFF

Sports

MCA students achieved remarkable success at **Saksham 2025 held at the college level**, showcasing excellence in both team and individual events. The MCA volleyball team secured an impressive **second place**, demonstrating teamwork, resilience, and strong sportsmanship. In individual achievements, **Lovink Tyagi, MCA 2nd year** won the **Gold Medal in the 85 kg weight category**, while **Ayush Sharma MCA 1st year** earned **Gold in the open weight category** in weightlifting and was honoured with the prestigious **Iron Man of AKGEC** award.

These sporting achievements reflect the dedication, discipline, and perseverance of our students, who successfully balanced academic responsibilities with excellence in sports. Their consistent efforts, teamwork, and competitive spirit enabled them to perform at various levels, bringing recognition and pride to both the department and the institution. Such accomplishments not only highlight individual talent but also promote values such as sportsmanship, leadership, resilience, and time management. The achievements have inspired fellow students to actively participate in sports and physical activities, fostering a culture of holistic development, fitness, and healthy competition within the campus community.

Chintu Sharma (2nd Year) actively represented the department and AKGEC in major football tournaments during the year. He played in the **Zonal Championship** in March 2025 as a member of the *Achheja Football Club*, showcasing strong skills and competitive spirit at the district level. Later, in October 2025, he participated in the prestigious **Udghosh Tournament at IIT Kanpur**, one of the largest intercollegiate sports fests in the country. His consistent involvement in high-level competitions reflects his dedication,

athletic discipline, and commitment to both personal growth and team performance, bringing pride to the MCA department.

Projects and innovation

The MCA students developed several impactful projects reflecting innovation and real-world relevance. The "Medical Chatbot" was designed as a smart healthcare assistant to provide instant responses for basic health queries and improve access to preliminary guidance. The "IoT-Based Air Quality & Temperature Monitoring System" focused on real-time environmental monitoring using sensors and dashboards to support smart and health-conscious decision-making. The "Fake News Detection System" applied machine learning to classify news as genuine or fake, promoting responsible digital awareness. The "DNS Traffic Analysis for Anomaly Detection" strengthened cybersecurity by identifying abnormal DNS patterns to support early threat detection and safer networks.

Students successfully completed a diverse set of major projects spanning AI, IoT, cybersecurity, healthcare technology, smart automation, and data-driven recommendation systems. Many of these projects demonstrated strong innovation potential and were converted into patents, with several already published or granted. In addition, 4–5 research papers emerging from these projects were published in Scopus indexed conferences under the guidance of faculty mentors. This reflects a robust culture of student–faculty collaboration, hands-on research, and outcome-based learning.

RESEARCH & INNOVATION

During the year 2025, the institute recorded four significant research publications across diverse interdisciplinary domains. These works reflect strong contributions in AI explainability, STEM education models, human-values-integrated learning, and informatics-driven educational frameworks.

Papers published in journals/conferences/Book/Chapters

During the year 2025, the institute recorded **approximately 22 significant research publications** across journals, conferences, and authored books/book chapters. The consolidated research output includes

a) Journal Publications: **Including Scopus/Web of Science/ABDC indexed journal papers**. Covering domains such as **AI explainability, STEM and UHV-based education models, predictive analytics, and educational data mining**.

1. Usha, S., Bala, S., Saranya, M. D., & Suganyadevi, S. (2025). Pixelated disparity network for hepatocellular carcinoma recognition from ultrasound images. Evolving Systems, 16(4), 113.

2. Bala, S., Arora, K., & Doss, A. N. (2025). Improving Kidney Stone Detection with YOLOV10 and Channel Attention Mechanisms in Medical Imaging. Journal of Electronics, Electromedical Engineering, and Medical Informatics, 7(3), 951-963.

3. Bala, S., Arora, K., Chowdhury, R., Kumar, P., & Nageswari, C. S. (2025). A Novel Encoder Decoder Architecture with Vision Transformer for Medical Image Segmentation. Journal of Electronics, Electromedical Engineering, and Medical Informatics, 7(1), 176-186.

4. Saxena, A., & Mittal, S. (2025). CluSHAPify: Synergizing Clustering and SHAP Value Interpretations for Improved Reconnaissance Attack Detection in IIoT Networks. International Journal of Performability Engineering, 21(1).

5. Singh, D. K., & Kumar, N. A Journey of STEM Education Model towards VBSTEM to UHV-STEM: A Clustering Based Predictive Analysis. International Journal of Environmental Sciences, 11(14s), 2025.

6. Singh, D. K., & Kumar, N. (2025). Exploring The Integration of Universal Human Values in Arts and Science Education: Perceptions, Predictive Analysis, And Pathways to UHV-Stem Using Clustering. Metallurgical and Materials Engineering, 364-375.

7. Deepika, J., Shetty, S., Selvarani, A., & Bala, S. (2025). A smart blockchain-based privacy-preserving machine learning scheme in IoT healthcare. Baghdad Science Journal, 22(6), 2086-2098.

8. Singh, S., & Gupta, A. (2025). Interactive virtual reality headset. Indian Journal of Technical Education, *48*(1), 7–10

b) Paper published in Conferences**: 15+ conference papers** in total

- **6 Scopus-indexed conference papers**
- **Conference papers** presented in reputed national/international conferences (non-indexed)

Research themes span **IoT innovations, machine learning applications, optimization models, smart healthcare devices, and intelligent systems engineering**.

1. Bala, S., & Arora, K. (2025, January). Interpretable Investigation of Feature Relevance and Sparsity of IoT Datasets. In 2025 6th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI) (pp. 374-379). IEEE.
2. Sharma, A., Garg, A., & Bala, S. (2025, March). Adaptive Hybridization of Particle Swarm Optimization and Grey Wolf Optimization. In *2025 International Conference on Next Generation Information System Engineering (NGISE)* (Vol. 1, pp. 1-8). IEEE.
3. Tavrez, S., Kumar, K., Sharma, H., & Saxena, A. (2024, November). Automatic Vehicle Plate Recognition and Overspeed Detection. In 2024 4th International Conference on Advancement in Electronics & Communication Engineering (AECE) (pp. 341-346). IEEE.
4. Yadav, N. K., Tiwari, A., Verma, H. K., & Saxena, A. (2024, November). Developing an Effective Model for Skin Disease Detection: Techniques and Approaches. In 2024 4th International Conference on Advancement in Electronics & Communication Engineering (AECE) (pp. 347-351). IEEE.
5. Sharma, A., Yadav, A., & Saxena, A. (2025, March). Leveraging Ensemble Methods for Robust Attack Detection in Consumer IoT Environments. In 2025 3rd International Conference on Disruptive Technologies (ICDT) (pp. 1287-1291). IEEE.
6. Chawla R, Sen M,Singh S,Kumar R ,Goel M.(2025, March).Confident cuff for providing safety and health monitoring using machine learning and IOT . In 2025 International Conference on Machine Learning and Data Science for Scientific & Industrial Applications
7. Pandey KV, Garg S, Avantika, Shashank, Goel M. (2025, March). Confident cuff for providing safety and health monitoring using machine learning and IOT. In 2025 International Conference on Machine Learning and Data Science for Scientific & Industrial Applications
8. Kumar.A, Goel M, Sharma P Pandey P, Kumar M. (2025, Feb). An improved energy optimization model for sensitive IOT devices using clustered Machine Learning. In 2025 2nd International Conference on Computational Intelligence, Communication Technology and Networking (CICTN)

c) Paper presented in Conferences:

Author Name	Paper Title	Conference Name
Mani Dublish	Optimizing the EOQ Model with Stock-Dependent Demand, Carbon Emission, and Partial Backlogging using Fuzzy Logic and Soft Computing Techniques	Soft computing and mathematical modelling (ICSCMM-24), KIET GZB, 21,22 DEC 24
Mani Dublish	Sustainable Imperfect Production Inventory Model with Variable Holding Cost, Preservation and Green Technology Investment	Soft computing and mathmetical modelling (ICSCMM-24), KIET GZB, 21,22 DEC 24
Udit Gupta, Vipul Kumar, Pranjal Srivastav, Saroj Bala	Auto Entry Guard Cum Smart Park Access	Convergence of Applied Sciences in Engineering & Technology (COASET-2025)
Chirag Kulshreshtha, Harsh Sharma, Shruti Jain	Sign Says: Sign Language Gesture Recognizer	5th International Conference on Innovations in IOT, Robotics & Automation (IIRA 5.0)
Priyanshu Verma, Krishna Singh, Umesh Kumar, Shruti Jain	Crop Disease Detection System In Agriculture	5th International Conference on Innovations in IOT, Robotics & Automation (IIRA 5.0)
Deepanshu Kumar, Garima, Shruti Jain	Leaf Disease Detection: An Ensemble Learning Approach	5th International Conference on Innovations in IOT, Robotics & Automation (IIRA 5.0)
Kunal Pal, Lakshay Gupta, Manas Mridul, Neeraj Mishra, Aman Gupta	AUTORENT: AI-Powered Intelligent Fleet Rental System	5th International Conference on Innovations in IOT, Robotics & Automation (IIRA 5.0)
Megha Mishra, Prerna Sharma, Avanish Srivastava	Intelligent Transport System for Real-Time Traffic Congestion Monitoring and Parking Management using Google Maps API	International Conference ICBRIGHT, AKGIM 13-14 Nov 2025.

Ashish Dixit, Awdhesh Gupta, Avanish Srivastava, Rashmi Vaishnav	Predictive modelling of scalability and mobility in cloud architectures using logistic regression	IEEE International Conference on ECE, RKGIT, GZB, Nov 2025. 21
Vaishnavi Gupta, Vivek Kumar, Shivani, Neha, Dheeraj Kumar Singh	Audio and Video to Text Generation using Deep Learning and Blockchain for Secure Media Transcription	International Conference ICBRIGHT, AKGIM 13-14 Nov 2025.
Aanchal, Ananya Katiyar, Akshat Saxena, Akhilesh Singhal, Dheeraj Kumar Singh	Next-Gen Repository Management System	International Conference ICBRIGHT, AKGIM 13-14 Nov 2025.

d)   Books Chapters published

Book titled as "*Data Structures Using C*" is authored by **Mukulit Goel.** The book, published by SIPH, serves as a comprehensive resource for understanding fundamental and advanced data structure concepts using the C programming language, supporting both students and educators in computer science and related disciplines.

Book chapters published with reputable publishers including **IGI Global, Chyren Publisher, SHREE Publishers, and AKGIM c**overing areas like **operating systems, AI–IoT integration, blockchain-based media transcription, smart retailing, STEM–UHV education, and next-gen repository systems**.

1. Mittal, S., Singhal, M., Dublish, M., & Noor, S. (2025). Application of IoT in Smart Retailing and Consumer Insights. In Merging Artificial Intelligence with the Internet of Things (pp. 397-430). IGI Global Scientific Publishing.
2. Dublish, M., Mishra, A. P., & Mittal, S. (2025). Strategy to Improve Psychological Elements and Customer Service in Intelligent Health Systems. Distributed and Parallel Computing, 281-297.

e)   Books Authored

Author (s)	Title of the Book	Publisher
Mukulit Goel	Data Structures Using C	SIPH, Delhi

Patent Published

This period witnessed significant progress in innovation and intellectual property creation, with a strong focus on integrating patent development into student-led major projects. A substantial number of patents were produced through close faculty–student collaboration, directly aligned with students' academic project work, reflecting a robust culture of mentorship, hands-on research, and real-world problem-solving. In total, **20+ patents** were recorded during this phase, of which **1 has been granted others are published**, highlighting both productivity and quality in research outcomes.

a)   Faculty Patents List

Patent Application No.	Title of the Patent	Inventor/s Name	Patent Published Date	Patent Publication /Granted Status
202511014817	Federated learning-based system and method for cardiovascular disease diagnosis and classification	Sanjeev Bhardwaj, Mukulit Goel, Pooja Pandey, Shruti Jain, Arpna Saxena, Sachin Jain	07/03/2025	**PUBLISHED**
202411098990	Distributed Model System for Coconut Disease Diagnosis using Federated Learning Techniques	Sanjeev Bhardwaj, Mukulit Goel, Pooja Pandey, Prachi Vashit, Ankita Singh, Tanu Sinha, Sachin Jain	31/01/2025	**PUBLISHED**
202511005657	Live sentiment analysis framework for social media data	Avanish Srivastava, Saroj Kushwah, Monika Gaur, Sneha Mishra, Amrita Bhatnagar, Bharat Singh, Rahul Kumar Pandey, Mridul Kumar Jain, Anuj Kumar Dwivedi, Ashish Dixit	28/02/2025	**PUBLISHED**

202511017115	System and method for dynamic resource management in computing environments	Mani Dublish, Avanish Srivastava, Pancham Singh	14/03/2025	**PUBLISHED**
202511017113	Adaptive threat detection and response system for cybersecurity applications	Mani Dublish, Aman Gupta	14/03/2025	**PUBLISHED**
455531-001	AI-powered automatic decision-making device	Mani Dublish, Saroj Bala, Updesh Kumar Jaiswal	16/04/2025	**GRANTED**

b)   **Students Patents List**

Patent Application No.	Title of the Patent	Inventor/s Name	Patent Published Date	Patent Publication /Granted Status
202511018266	Multi-sensor system for air quality monitoring and data analysis	Apurva Singh, Ajeet Yadav, Harsh Sahay, Harsh Raghav, Saroj Bala, Arpna Saxena	14/03/2025	PUBLISHED
202511037519	Artificial Intelligence-based agriculture monitoring and security system	Aryan Yadav, Chetan, Saroj Bala, Arpna Saxena	02/05/2025	PUBLISHED
202511035896	AI-based leaf disease detection system using ensemble deep learning and real-time web application	Deepanshu Kumar, Garima, Saroj Bala, Shruti Jain	25/04/2025	PUBLISHED

202511041056	AI-Based Virtual Try-On System for Enhanced Online Clothing Shopping Experience	Nilesh Singh, Prabhakar Bhatt, Pawan Kumar Pandey, Saroj Bala, Babita Rajput	16/05/2025	PUBLISHED
202511035897	AI-based system for real-time sign language recognition and communication assistance	Chirag Kulshreshtha, Harsh Sharma, Saroj Bala, Shruti Jain	25/04/2025	PUBLISHED
202511041054	AI-based crop disease detection system using deep learning and real-time image analysis	Priyanshu Verma, Umesh Kumar, Krishna Singh, Saroj Bala, Shruti Jain	16/05/2025	PUBLISHED
202511041052	IoT-enabled smart diaper for special care of the specially-abled, elderly, and infants	Risabh Chawla, Mayank, Raman, Shubham, Saroj Bala, Mukulit Goel	16/05/2025	PUBLISHED
202511041055	Intelligent Home Service System for AI Matching, Automated Scheduling, and Secure Payments	Amit Kumar, Abhinav Sharma, Saroj Bala, Babita Rajput	16/05/2025	PUBLISHED
202511041140	A system and a method to match roommates using AI and conflict Prediction	Ritik Garg, Varun Rajput, Vaibhav Mishra, Avanish Srivastava	16/05/2025	PUBLISHED
202511041139	A system method to enable cognitive-aware, AI-powered community and career development in academic institutions	Vishal Sharma, Satyam Kulshreshtha, Sandeep Singh Negi, Nabh Gupta, Saroj Bala, Avanish Srivastava	16/05/2025	PUBLISHED
202511041058	Random Forest-Based Personalized Career	Hritik Kumar, Abhay Tripathi, Himanshu	16/05/2025	PUBLISHED

	Recommendation System for Optimized Academic and Career Guidance	Tiwari, Harshit Tripathi, Saroj Bala, Pooja Pandey		
202511018262	Automated financial management system for expense tracking and budgeting	Ayush Kr Singh, Ayush Mishra, Harsh Singh, Aman Gupta, Mani Dublish	14/03/2025	PUBLISHED
202511018264	Intelligent travel planning and itinerary optimization system	Himanshu, Devansh Yagyaseni, Harsh Baranwal, Harsh Pal, Saroj Bala, Mani Dublish	14/03/2025	PUBLISHED
202511041055	Intelligent Home Service System for AI Matching, Automated Scheduling, and Secure Payments	Amit Kumar, Abhinav Sharma, Saroj Bala, Babita Rajput	16/05/2025	PUBLISHED
202511041056	AI-Based Virtual Try-On System for Enhanced Online Clothing Shopping Experience	Nilesh Singh, Prabhakar Bhatt, Pawan Kumar Pandey, Saroj Bala, Babita Rajput	16/05/2025	PUBLISHED
202511021847	A system and method for AI-powered intelligent vehicle rental management and automated customer interaction	Kunal Pal, Lakshay Gupta, Manas Mridul, Neeraj Mishra, Aman Gupta	21/03/2025	PUBLISHED
202511037518	Peer-based learning recommendation system using rule-based selection	Kriti Gupta, Shruti Saxena, Tanya Singhal, Saroj Bala, Aman Gupta	02/05/2025	PUBLISHED
202511017119	Automated health assessment system based	Abhishek Bharadwaj, Abhyudya Vats, Abhinav Sharma, Chandan Kumar	14/03/2025	PUBLISHED

	on user input and data analysis	Shah, Saroj Bala, Aman Gupta		
202511037520	Health record management system utilizing facial recognition for secure patient identification and data access	Kartavya Kaushik, Tarun Pal, Nityam Sharma, Saroj Bala, Aman Gupta	02/05/2025	PUBLISHED
202511056258	System for adaptive hybridization of PSO and GWO algorithms	Aakash Sharma, Aryan Garg, Saroj Bala, Aman Gupta	27/06/2025	PUBLISHED
202511037521	Automated system for vehicle entry and parking management	Pranjal Srivastav, Udit Gupta, Vipul Kumar, Saroj Bala, Aman Gupta	02/05/2025	PUBLISHED
202511041057	Wi-Fi-controlled assistive robot car	Yash Keshri, Kavyansh Tyagi, Shakshi Deshwal, Saroj Bala, Aman Gupta	16/05/2025	PUBLISHED
202511042114	Wearable apparatus for safety and health monitoring with artificial intelligence-based emergency detection	Vineet Kumar Pandey, Shivani Garg, Anantika Tewari, Shashank Pandey, Saroj Bala, Mukulit Goel	14/11/2025	PUBLISHED
202511041056	AI-Based Virtual Try-On System for Enhanced Online Clothing Shopping Experience	Nilesh Singh, Prabhakar Bhatt, Pawan Kumar Pandey, Saroj Bala, Babita Rajput	28/04/2025	PUBLISHED
2025110410565	Intelligent Home Service System for AI Matching, Automated Scheduling and Secure Payments	Amit Kumar, Abhinav Sharma, Saroj Bala, Babita Rajput	28/04/2025	PUBLISHED

FDP Attended

Faculty members actively participated in multiple FDPs conducted by reputed national training bodies and academic institutions like ATAL, NITTR etc.

January 2025

Faculty Name	FDP Name	Organized By
Saroj Bala	Data Science using Python	NITTTR, Chandigarh
Arpna Saxena	AI and Security: Current Trends and Future Research, ATAL, AICTE	AKGEC
Aman Gupta	FDP on Data Science using python	AKGEC
Aman Gupta	ATAL FDP on Emergence of Cloud Computing	ATAL
Shruti Jain	AI and Security: Current Trends and Future Research	ATAL
Shruti Jain	Gen AI & Chat GPT Application in the Industry	ExcelR Edtech Pvt. Ltd.
Avanish Srivastava	Data Science using Python	NITTTR, Chandigarh
Avanish Srivastava	Clean and Green Technologies	NITTTR, Chandigarh
Avanish Srivastava	Innovation & Intellectual Property Rights	Tecnia Institute of advanced studies, Rohni Delhi
Pooja Pandey	Data Science using Python	NITTTR, Chandigarh
Pooja Pandey	AI- Driven future of Healthcare and Telemedicine	ATAL
Mani Dublish	Data Science using Python	NITTTR, Chandigarh
Mani Dublish	Innovation & Intellectual Property Rights	Tecnia Institute of advanced studies, Rohni Delhi
Babita	Data Science using Python	NITTTR, Chandigarh
Mukulit Goel	Data Science using Python	NITTTR, Chandigarh

February 2025

Faculty Name	FDP Name	Organized By
Saroj Bala	ATAL FDP on generative AI: Techniques, Tools, and Applications	ATAL
Arpna Saxena	3 Days FDP on Research oriented approach for ML Algos using Python	AKGEC
Aman Gupta	FDP on AR VR and AI for Innovative Teaching and Learning Experiences	NITTTR, Chandigarh
Aman Gupta	3 Days FDP on Research oriented approach for ML Algos using Python	AKGEC

Shruti Jain	"A Research Oriented Practical Approach for Machine Learning Algorithms using Python"	AKGEC
Avanish Srivastava	UHV-II FDP	AICTE, AKGEC, Gzb
Avanish Srivastava	Machine Learning using Python	NITTTR, Chandigarh
Pooja Pandey	Machine Learning using Python	NITTTR, Chandigarh
Pooja Pandey	8-day Face-to-Face UHV-II FDP	AICTE, AKGEC, GZB
Mani Dublish	Machine Learning using Python	NITTTR, Chandigarh
Mani Dublish	"A Research Oriented Practical Approach for Machine Learning Algorithms using Python"	AKGEC
Babita	UHV-II FDP	AICTE, AKGEC, Gzb

March 2025

Faculty Name	FDP Name	Organized By
Arpna Saxena	AICTE FDP on Innovation & Entrepreneurship	AKGEC
Aman Gupta	AICTE FDP on Innovation & Entrepreneurship	AICTE, AKGEC, Gzb
Aman Gupta	FDP on Impact of AI on Automated Software Development and Delivery	AKGEC
Mani Dublish	Innovation & Intellectual Property Rights	AKGEC
Mani Dublish	Impact of Artificial Intelligence on Automated Software Development and Delivery	AKGEC

August 2025

Faculty Name	FDP Name	Organized By
Saroj Bala	Demystifying Transformers: The Brains Behind Generative AI	ATAL
Arpna Saxena	IoT with Machine Learning in Defence Applications	E&ICT-NIT, Patna
Babita	Augmented Reality / Virtual Reality (AR/VR)	ExcelR Edtech Pvt. Ltd.

November 2025

Faculty Name	FDP Name	Organized By
Saroj Bala	Open-Source Tools for Research	NITTTR, Chandigarh
Saroj Bala	Role of Responsible Artificial Intelligence (AI) in Driving Global Progress Towards Sustainable Development Goals (SDG)	ATAL
Arpna Saxena	Cyber Shield 360°: A Comprehensive Workshop on Cybersecurity Practices and Threat Management	ATAL
Shruti Jain	Harnessing AI and Emerging Technologies for Research and Startup Innovation	ATAL
Shruti Jain	Next-Gen Business Intelligence: Leveraging AI and Machine Learning for Transformational Growth	ATAL
Avanish Srivastava	UHV-II Refresher FDP	AICTE, AKGEC, Gzb
Pooja Pandey	Harnessing AI and Emerging Technologies for Research and Startup Innovation	ATAL
Mukulit Goel	UHV-II REFERESHER	AKGEC
Mukulit Goel	Role of Responsible Artificial Intelligence (AI) in Driving Global Progress Towards Sustainable Development Goals (SDG)	ATAL

December 2025

Faculty Name	FDP Name	Organized By
Aman Gupta	Security and Privacy issues and their countermeasures in the era of Artificial Intelligence	ATAL
Aman Gupta	CyberSecure—Threat Intelligence and Defense in IoT Ecosystem	ATAL

MOOC Courses

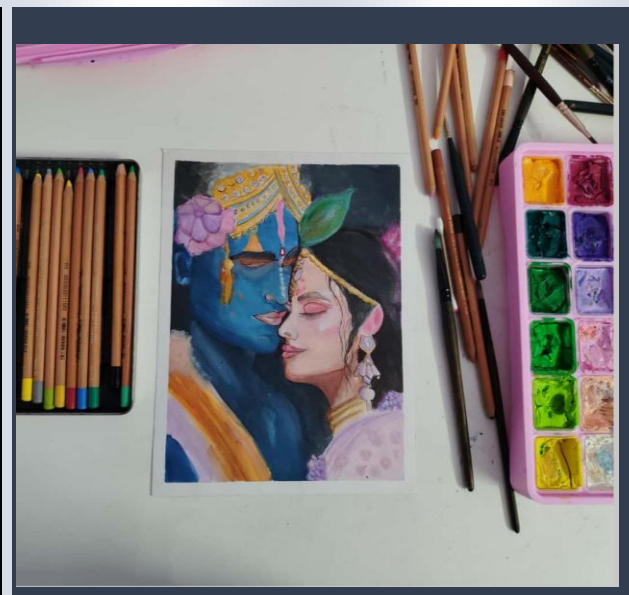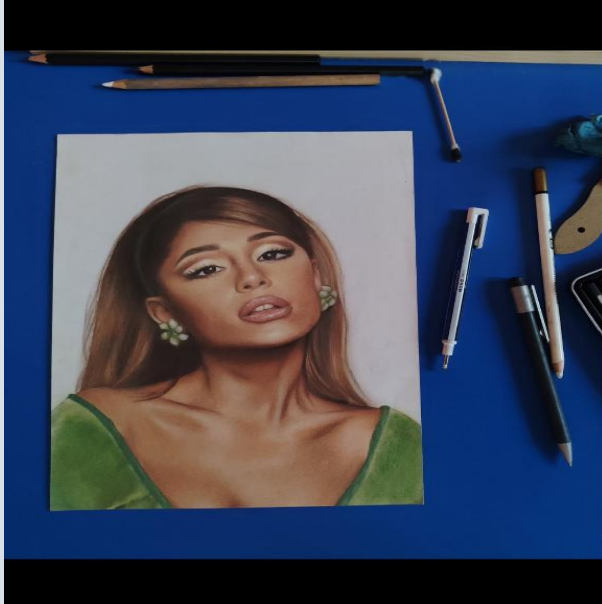| Faculty Name	MOOC Online Course
Dheeraj Kumar Singh	Intellectual Property Portfolio Management
Mukulit Goel	Introduction to Industry 4.0 and Industrial Internet of Things
Babita Rajput	Introduction to Industry 4.0 and Industrial Internet of Things
Aman Gupta	Data Science Using Python, Cyber Security and Privacy
Pooja Pandey	Introduction to Industry 4.0 and Industrial Internet of Things

EVENTS ORGANIZED

Workshops

The Department of MCA in collaboration with TIFAC organized a workshop on the basics of IOT for Students of MCA 2nd Year on **11/11/2025 in the PI lab of TIFAC Building**. This workshop offers basics of IOT with Hands on Exposure to the various sensors with implementation under Raspberry Pi programming environment. This Workshop is conducted by Mr. Himanshu Tripathi. The event was held under the guidance of **Dr. Saroj Bala, HoD– MCA, Prof. Ashiv Shah, Head TIFAC-CORE** and reflects AKGEC's commitment to industry-oriented academic excellence.
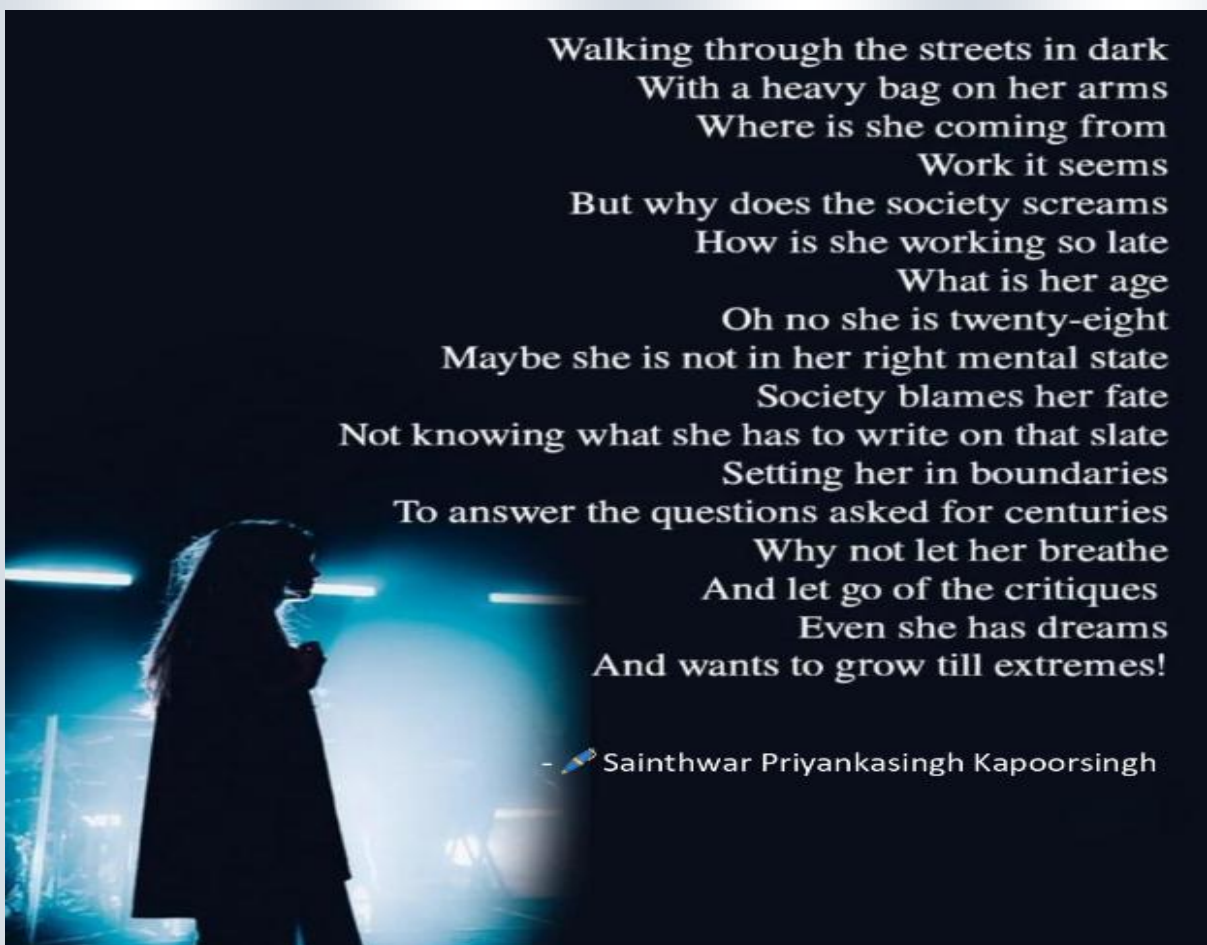
CREATIVE SECTION

By: Aditya Arya, MCA 2nd year

By: Aditya Arya, MCA 2nd year

Walking through the streets in dark
With a heavy bag on her arms
Where is she coming from
Work it seems
But why does the society screams
How is she working so late
What is her age
Oh no she is twenty-eight
Maybe she is not in her right mental state
Society blames her fate
Not knowing what she has to write on that slate
Setting her in boundaries
To answer the questions asked for centuries
Why not let her breathe
And let go of the critiques
Even she has dreams
And wants to grow till extremes!

- Sainthwar Priyankasingh Kapoorsingh

By: Sainthwar Priyankasingh Kapoorsingh, MCA 1st year

UPCOMING PLANS

The following activities have been planned for the upcoming semester to enhance academic quality, student engagement, and departmental growth. The department has set up the following goals for the upcoming academic semester.

- Industry-oriented courses
- Research-based projects
- Outcome-based learning
- Holistic development of faculty, staff and students
- Faculty development

Academic Plans

The Department of MCA has planned a structured set of value-added initiatives to be implemented during the final semester of the MCA program, in addition to the prescribed AKTU curriculum, with the objective of enhancing students' personality, technical competence, and professional readiness. The plan includes a two-day intensive workshop on Aptitude and Reasoning to strengthen analytical and problem-solving abilities, followed by three one-week (40 hours each) skill-oriented training programs in emerging and core domains. These comprise hands-on training in Machine Learning and Data Science using Python to build data-driven competencies, a comprehensive Web Development program to enhance full-stack development skills, and focused training in Java programming to reinforce object-oriented and enterprise application development. Collectively, these initiatives aim to equip students with industry-relevant skills and improve their employability and success as future professionals.

The **objective** of the planned actions for the Even Semester is to strengthen students' technical competence, practical exposure, and industry readiness by emphasizing hands-on learning, advanced skill development, and research orientation. Through structured training programmes, workshops, internships, and project-based research activities, the department aims to bridge the gap between theory and practice, enhance employability skills, promote innovation, and encourage scholarly contributions, thereby preparing students for professional, academic, and research-oriented career pathways.

Student Development Plans

Plan for activities to be held in the even semester 2025-26 under the Parivriddhi Society

- **Speak Smart – A Talk-Show Style Communication Event** is planned to enhance students' interactive speaking and discussion skills.

  Objective: The activity aims to improve articulation, critical thinking, active listening, and on-the-spot communication. It also helps students develop confidence, clarity, and the ability to engage in meaningful, structured conversations—skills essential for professional presentations, teamwork, and leadership.

  Outcome: Students will learn to express ideas confidently, respond thoughtfully during discussions, and participate effectively in collaborative dialogues, leading to stronger communication and interpersonal skills.

- **Buzz & Beats Battle – A Quiz on General Topics** is planned as an engaging, fast-paced knowledge competition for students.

  Objective: The event aims to broaden students' awareness of diverse domains, sharpen their recall abilities, and enhance quick-thinking skills. It also encourages healthy competition, teamwork, and active participation while strengthening general knowledge and cognitive agility.

  Outcome: Students will develop improved awareness of current and general topics, faster response skills, and greater confidence in competitive settings. The event will also promote collaborative learning, curiosity, and a habit of staying informed.

The **objective** of the Student Development Plan (SDP) for the Even Semester 2025–26 under the Parivriddhi Society is to foster holistic student growth by strengthening communication, cognitive, and interpersonal skills beyond the academic curriculum. Through interactive and engaging activities such as *Speak Smart* and *Buzz & Beats Battle*, the plan aims to enhance students' confidence, articulation, critical thinking, teamwork, and general awareness.

These initiatives are designed to create an inclusive learning environment that promotes active participation, healthy competition, and leadership qualities, thereby preparing students for professional interactions, collaborative work environments, and lifelong learning.

Faculty Development Plans

The following faculty and staff development programmes have been finalized.

- **NEP: Orientation and Sensitization**

Objective: To familiarize faculty with the key principles, vision, and framework of the National Education Policy (NEP) 2020 and orient teachers towards multidisciplinary and holistic teaching-learning approaches promoted under NEP.

Outcome: Improved readiness among teachers to redesign curricula according to flexibility, multidisciplinary approach, and skill integration and enhanced ability to implement learner-centric pedagogies such as experiential learning, project-based learning, internships, and value-added courses.

- **Deep Learning**

Objective: To provide faculty with a strong conceptual understanding of deep learning architectures, including CNNs, RNNs, LSTMs, GANs, Transformers, and autoencoders, develop research-oriented thinking by exposing faculty to state-of-the-art deep learning trends, applications, and benchmark datasets and enhance the ability to identify research gaps and formulate research problems in areas such as computer vision, NLP, IoT, cybersecurity, and healthcare analytics.

Outcome: Faculty become capable of developing end-to-end deep learning projects for real-world applications and research. The ability to guide PG students and scholars in research-based projects, dissertations, and innovative prototypes increases.

- **Geodata Processing using Python and Machine Learning**

Objective: The program sponsored by the Indian Institute of Remote Sensing (IIRS), aims to equip faculty members and students with essential conceptual and practical knowledge in geospatial data analysis. It focuses on introducing the fundamentals of geodata, spatial data types and sources, and preprocessing techniques, while demonstrating the effective use of Python and machine learning for geospatial analysis and visualization.

Outcome: Upon completion of the program, participants will gain hands-on experience in applying Python-based tools and machine learning algorithms to real-world geospatial problems, including remote sensing data analysis and spatial modelling. The program will enhance participants' analytical and technical skills, enabling them to apply geodata-driven approaches for research, decision-making, and advanced academic or industry-oriented applications.

Infrastructure / Administrative Plans

- **Centre of Excellence- Artificial Intelligence and Data Analytics (CE-AIDA)**

The department is establishing a Centre of Excellence (CoE) dedicated to advanced computing, artificial intelligence, and deep learning research. The centre will be equipped with five high-performance GPU systems capable of supporting large-scale model training, high-speed data processing, and complex computational tasks. This facility will serve as a hub for cutting-edge research, enabling faculty and students to work on innovative projects and publish quality research papers. This will also support interdisciplinary collaborations, skill development initiatives, and hands-on learning through workshops, FDPs, and project-based activities.

ACKNOWLEDGEMENT

"The strength of any institution lies not only in its achievements, but in the people who inspire, guide, and empower every step of the journey."

We express our sincere gratitude to the Management of AKGEC for their unwavering support and commitment to academic excellence. Their continuous efforts in providing world-class infrastructure, state-of-the-art technological resources, and a highly conducive learning environment have empowered both students and faculty to grow, innovate, and excel. Their vision and encouragement form the backbone of every initiative that contributes to the holistic development of our MCA community.

We, as editorial board members, with profound respect and gratitude, extend our heartfelt thanks to **Prof. Amita Dev, Advisor, AKGEC**, whose vision, guidance, and constant encouragement have been the driving force behind this newsletter. Her insightful suggestions and unwavering support have shaped the direction, quality, and purpose of this publication.

We extend our heartfelt thanks to **Dr. Hemant Ahuja, Director, AKGEC**, for his continuous support and for fostering an environment that encourages innovation, learning, and overall holistic development.

Our special thanks to **Dr. Saroj Bala, HOD MCA**, for her valuable guidance, motivation, and consistent support throughout the preparation of this newsletter.

We deeply appreciate the cooperation, contributions, and constant encouragement of the faculty members of the MCA Department, whose dedication has added immense value to this publication.

Lastly, we acknowledge the creative efforts of our MCA students, whose enthusiasm, ideas, and teamwork have added life and vibrancy to this newsletter.

"Great achievements are always a collective effort, and this newsletter stands as a reflection of the dedication, creativity, and unity of our MCA family."

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NAVDRISHTI * 2025-26