JAIN (Deemed-to-be University)

PROGRAMMES IN INNOVATIVE AND EMERGING AREAS

Academic Years 2022-23, 2023-24

This document presents a consolidated overview of the new academic programs and innovative courses introduced in various Departments of JAIN (Deemed-to-be University). It highlights the University's commitment to academic excellence, interdisciplinary learning, and alignment with emerging industry and societal needs. These courses are conceptualized to enrich the academic ecosystem, respond to evolving societal and industry needs, and foster a spirit of innovation, inclusion, and excellence in line with NEP 2020.

FACULTY OF BASIC AND APPLIED SCIENCES

School of Sciences

Sl. No.	Programme / Department	Year Introduced	Innovation / Courses Offered
1	**M.Sc Digital Forensics and Information Security (DFIS)** Department of Forensic Science	2022-23	- **Artificial Intelligence:** Enhances data analysis and automates evidence processing. - **Incident Handling & Response:** Preparation for adverse incidents and war rooms. - **Crime Mapping:** Geographic visualization and analysis of crime data. - **Multimedia Forensics:** Authentication of digital media (images, video, audio). - **Malware Forensics:** Analysis of malware and secure coding practices. - **Cyber Ranges:** Hands-on cybersecurity training with realistic scenarios. - **Cyber Criminology:** Interdisciplinary study of crime, psychology, and security. - **Fundamentals of Information Security:** Core principles and risk management. - **Python Programming:** For data analysis and cybersecurity. - **Digital Forensic Investigation:** Evidence handling and legal frameworks.
2	**Department of Psychology and Allied Sciences** New Programmes	2022	- **M.Sc Psychology (Specialization in Child & Adolescent Psychology):** Assessment and management of youth mental health. - **Post Graduate Diploma in Neuropsychology (PGDNP):** Biological aspects of behavior in neurological settings. - **M.Sc Neuropsychology:** Exploration of neuroanatomy, cognitive neuroscience, and rehabilitation interventions.
3	**Department of Chemistry and Biochemistry** New Programme & Courses	2023-24	- **BSc Computational Biology (2023):** Integration of molecular biology, math, and IT for genomics/proteomics. - **Applied Chemistry I & II:** Industry-based knowledge and nutritional biochemistry. - **Bioethics, Biosafety and IPR:** Ethics, safety protocols, and patent laws. - **Enzyme Technology & Lab:** Protein chemistry and industrial applications. - **Non-Communicable Diseases (Theory/Lab):** Epidemiology and clinical investigation. - **Industrial Enzymes:** Enzyme engineering, immobilization, and biosensors. - **Lifestyle Diseases:** Diet, exercise, and health biomarker measurement.
4	**Department of Physics and Electronics** Specializations & Courses	2022-24	- **M.Sc Physics - Astronomy and Astrophysics:** Universe origins, structure, and dynamics. - **M.Sc Physics - Microelectronics:** Principles and design of microelectronic devices. - **M.Sc Physics - Atmospheric Physics and Chemistry:** Physical/chemical processes of Earth's atmosphere. - **Certification Course in AI & ML:** Foundational knowledge for Physics students (B.Sc & M.Sc).

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5	**Department of Microbiology and Botany** New Programmes & Courses	2023-24	- **BSc Honours (Chemistry, Microbiology and Biotechnology):** 4-year honors program aligning with global standards. - **M.Sc. Microbiology (Microbial Technology):** Fermentation, cell immobilization, and IPR. - **M.Sc Microbiology (Food and Dairy):** Industry-relevant skills for employability. - **Open Elective: Climate Change and Sustainability:** Global impacts and root causes.
6	**M.Sc in Data Science & Analytics** Department of Data Analytics & Mathematical Sciences	2022-23	- **Mathematical Methods:** Advanced techniques for complex problems. - **Foundations of Data Taming:** Data wrangling, cleansing, and warehousing. - **Robotics & AI:** Sensor data integration and autonomous systems. - **Generative AI:** Latest models for content creation. - **Big Data Analytics:** Analyzing large-scale datasets. - **Computer Vision & NLP:** Image analysis and text processing. - **Data Security:** Protection measures for data professionals.

FACULTY OF ARTS, HUMANITIES AND SOCIAL SCIENCES

Sl. No.	Programme / Department	Year Introduced	Innovation / Courses Offered
7	**BA in Economics and Public Policy** Department of Economics	2022-23	- **Semester 1-2:** Micro/Macro Economics, Public Finance, Statistics for Economics. - **Semester 3:** Public Policy Administration, Data Analytics, Basics of Sustainability. - **Semester 4:** Economic Policy Analysis, Global Economy, Econometrics, Financial Accounting for Public Systems. - Connects economic theories with real-world policy-making and data analysis.
8	**BA & MA Journalism and Mass Communication** Department of Journalism and Mass Communication	2022-23	- **Data Journalism:** Blends investigative reporting with data analysis. - **Rural and Urban Administration:** Governance comparison and GIS for planning. - **Integrated Marketing Communication:** Cohesive strategies across channels. - **Community Radio and Development:** Participatory communication for social change. - **Introduction to Public Administration:** Policy implementation and civil service preparation.

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9	**MA in Political Science and International Relations** Centre for Research in Social Sciences and Education (CERSSE)	2022-23	- Rigorous training in political analysis, policy-making, and international affairs. - Exposure to think tanks, political organizations, and bureaucrats. **Open Elective - Gender and Politics:** Intersectional aspects of social groups in politics.
10	**School of Law** New Master of Laws (LLM) Programmes	2022-23	**LLM - Criminal Law and Criminal Justice:** Investigation to sentencing, trial advocacy, and ethics. **LLM - Intellectual Property Law:** Global IP significance, policy making, and domestic/international law. **LLM - Corporate and Commercial Law:** M&A, securities regulation, and corporate governance.

FACULTY OF APPLIED COMPUTING

School of Computer Science & Information Technology

Sl. No.	Programme / Department	Year Introduced	Innovation / Courses Offered
11	**Department of Computer Science & Information Technology** BCA & MCA Programmes	2022-23	**Bachelor of Computer Applications (BCA):** **BCA-ITH (IT in Healthcare):** Clinical Decision Support, EHR, IoT for Healthcare. **BCA-AI:** Cognitive Computing, NLP, Recommendation Systems. **BCA-Cybersecurity:** Computer Hacking & Forensic Investigation. **General Courses:** Research Methodology, Python, iOS Development, Cloud Data Analytics. **Master of Computer Applications (MCA):** **General:** R Programming, Business Intelligence, Deep Learning, IT Governance. **MCA (ISMS):** Cyber Law (Digital privacy, AI regulations). **MCA (AIML):** Machine Learning Using Python, Big Data Analytics, NLP.
12	**Department of Animation & Virtual Reality** New Laboratory Courses	2023-24	**Personality and Career Management Lab:** Soft skills and self-branding workshops. **Shot Production Techniques Lab:** Pre-visualization to post-production workflows. **Portfolio Creation Lab:** Curating professional portfolios using digital tools. **Sound Design Lab:** Innovative sound recording and mixing. **AI for Games:** Implementing AI-driven systems in game design. **Analog Sculpting:** Integrating traditional clay sculpting with digital workflows.

FACULTY OF CREATIVITY AND DESIGN

School of Design Media and Creative Arts

Sl. No.	Programme / Department	Year Introduced	Innovation / Courses Offered
13	**Department of Art & Design** New Programmes & Specializations	2022-24	- **MA-Graphic Design:** Blends traditional principles with AR and interactive design. - **MA-Animation and VFX:** Advanced digital animation and visual storytelling. - **BA (Communication Design - Animation/VFX):** Visual Art, Digital Art, Character Design. - **BA-UI/UX with Graphic Design:** User research, interaction design, usability testing. - **BA-Fashion Design:** Textile science, trend forecasting, and accessories. - **MA-Fashion Design:** Advanced draping, sewing, and sustainable fashion. - **BA/MA - Interactive Game Art (IGADD):** Game mechanics, VR/AR, AI in games. - **BFA & MFA:** Studio practice combined with theoretical studies.

FACULTY OF MANAGEMENT STUDIES

CMS Business School

Sl. No.	Programme / Department	Year Introduced	Innovation / Courses Offered
14	**MBA Digital Marketing**	2023-25	- **Marketing in the Digital World:** Metaverse, blockchain, and AI segmentation. - **Email/Mobile Strategies:** AI automation and omnichannel lead nurturing. - **Digital Marketing for Sales:** AI sales funnel optimization and social selling. - **Content Marketing & ORM:** AI content generation and sentiment analysis. - **Digital Privacy & Ethics:** GDPR, AI ethics, and data protection. - **Affiliate & Influencer Marketing:** Blockchain for fraud prevention. - **Digital Entrepreneurship:** Lean startup, NFTs, and Web3 business models. - **Social Media Listening:** Real-time sentiment tracking and competitive intelligence.

Sl. No.	Programme / Department	Year Introduced	Innovation / Courses Offered
15	**MBA Family Business Management**	2024-26	- **Family Business Enterprises:** Governance and succession strategies. - **Business Communities Legacy:** Historical impact of Indian business communities. - **Social Entrepreneurship:** Ventures with social/environmental goals. - **HR in Family Business:** Talent acquisition for family entities. - **Scaling-up & Diversification:** Growth frameworks and risk reduction. - **Global Family Businesses:** Managing cross-border cultural/regulatory factors. - **Succession Planning:** Managing leadership transitions and continuity.
16	**MBA Digital Business & Marketing**	2025-26	- **Growth Hacking & Performance Marketing:** Experimentation, viral loops, and data-driven acquisition. - **Neuro Marketing:** Using fMRI/EEG data and sensory stimuli to influence consumer behavior.

FACULTY OF ENGINEERING AND TECHNOLOGY

Sl. No.	Programme / Department	Year Introduced	Innovation / Courses Offered
17	**Department of Information Science and Engineering**	2022-23	- **Foundations of Cloud Computing:** Cloud infrastructure and modern computing. - **Full Stack Development:** Modern tracks in software engineering. - **Data Communication and Networks:** NS3 and Packet Tracer simulation tools.
18	**Department of Civil Engineering**	2022-24	- **Problem Solving via C:** Computational thinking in construction. - **Biology for Engineers:** Bio-inspired sustainable design. - **Environmental Engineering:** Green building and waste management. - **Surveying II & III:** Drones and LiDAR technology. - **Scientific Foundation of Health:** Built environment and public health. - **Project Centric Learning:** Hands-on complex real-world projects. - **Software Aided Construction:** Management using Primavera/MS Project.

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19	**Department of Mechanical Engineering**	2022-24	- **Mobile and Micro Robots:** Micro-scale actuation and swarm robotics. - **Energy Storage for EVs:** Battery management and charging infrastructure. - **Hydraulics and Pneumatics:** IoT-based monitoring and smart control. - **Biology for Engineers:** Biomechanics and biomaterials. - **PCL - Research & Entrepreneurship:** Commercializing research outcomes.
20	**Department of Computer Science and Engineering** (AIDE & CSBS)	2022-24	- **Intro to Python for AI/DE:** Foundation for AI/Data Engineering. - **Essentials of Big Data:** Handling massive datasets (Hadoop/Spark). - **Generative AI:** Generating high-quality text/image/audio. - **Quantum Computation:** Quantum algorithms and post-quantum crypto. - **Edge Computing:** Processing data at the source. - **DevOps:** Automation of software development lifecycle. - **Recommender Systems:** Personalization algorithms. - **Human AI and Teaming:** Collaborative intelligence.
21	**Department of Food Technology**	2022-24	- **Advances in Food Technology:** Component reactivity and packaging. - **IoT in Food Industry:** Tech in production and distribution. - **AI and ML in Food:** Modeling and predictive analysis. - **Technology for RTC/RTE:** Processing ready-to-cook/eat products. - **Food Business Management:** Operations and financial management.
22	**Department of Aerospace Engineering**	2022-23	- **Navigation Guidance and Control:** Modern guidance laws and PID controllers. - **Ramjet and Scramjet Propulsion:** Hypersonic air-breathing propulsion systems.
23	**Department of Electronics and Communication Engineering**	2022-24	- **Concepts of AI:** Applications in healthcare and robotics. - **Web Development:** React, Angular, Node.js, Web 3.0. - **Satellite Communication in 5G:** LEO satellites and global broadband. - **Embedded System in Medicine:** Hardware for healthcare monitoring. - **RFID and Flexible Sensors:** Architecture and industry deployment. - **Spread Spectrum Technology:** Secure signal transmission.

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24	**Department of Electrical and Electronics Engineering**	2024	- **B.Tech EEE - Electric Vehicle:** Powertrains, BMS, charging infra. - **B.Tech EEE - Microgrid Technologies:** Decentralized sustainable energy. - **Modern Power Converters:** Advanced electronics for grids. - **Smart Grid Technologies:** IoT integration and real-time monitoring.

FACULTY OF COMMERCE

Sl. No.	Programme / Department	Year Introduced	Innovation / Courses Offered
25	**Department of Commerce (B.Com)**	2022-24	- **Fundamentals of Trading:** Live simulations in stock/currency markets. - **Technology in Commerce:** Digital transformation and automation. - **HR Analytics:** Power BI/Tableau for workforce planning. - **International Banking & Innovations:** Blockchain in finance. - **Financial Psychology:** Behavioral finance simulations. - **Digital Marketing:** Hands-on SEO, SEM, and Google Analytics. - **Employee Wellbeing:** Wellness programs and productivity. - **Entrepreneurship:** Incubator programs and startup field trips. - **International Tax Laws:** Cross-border regulations.