SUMMER TRAINING / INTERNSHIP & RESEARCH PROJECTS 2026

Hands-on summer training in AI, Machine Learning, Data Science, Bioinformatics, Pharmacy, Biotechnology drug design-discovery and Engineering. Job-oriented programs with live projects and real-world applications. Build practical skills for high-demand careers in emerging technologies.

CATR

Centre for Advanced Training and Research

CATR Empowering professionals with future-ready skills for a dynamic global landscape

CATR is a ***Government-registered, ISO-IAF certified institution*** delivering high-quality, globally accessible education in cutting-edge fields of science and technology. Through industry-focused training, research, and project-based learning, CATR equips learners with practical skills in AI, data science, biotechnology, and emerging technologies.

57000+ Learners | **15+** Countries | **60+** Courses

- **Industry-Recognized Certification**
- **Offline/Online Live Sessions**
- **PPTs, Study Materials & Resources**
- **Hands-on Projects & Case Studies**
- **Practical Training with Industry Tools**
- **Mentorship, Internship & Career Support**
- **Experts from IITs, NITs, AIIMS & Leading Institutions**

- Artificial Intelligence, Machine Learning
- Data Science
- Programming Python & R
- IT & Cybersecurity
- Renewable Energy
- Electric Vehicles & Sustainable Technologies
- Electronics, VLSI & Smart Systems
- Digital Skills, Web & Application Development
- Healthcare, Medical & Clinical Sciences
- Pharmacy & Bioinformatics
- Biotechnology, Life Sciences & Drug Discovery

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Program Overview

Our Summer Training in Bioinformatics, Biotechnology, and Microbiology is designed to deliver a strong blend of theoretical understanding and practical, industry-relevant skills aligned with current global demands in life sciences. The program covers cutting-edge tools and techniques across computational biology, molecular biology, drug discovery, and advanced microbiology, with a clear focus on real-world applications in biotech, pharmaceutical, and healthcare sectors.

Through hands-on workshops, project-based learning, and expert-led sessions, participants gain practical exposure to data analysis, modern laboratory techniques, and in silico approaches widely used in research and industry. This comprehensive training equips learners with job-ready competencies, enabling them to pursue careers in research, diagnostics, pharmaceuticals, and emerging biotech domains, while building a strong foundation for future academic and professional growth.

Who Can Join?

This program is suitable for B.Sc, B.Tech, M.Sc, M.Tech, B.Pharm, M.Pharm, BMLT students and graduates from Biosciences, Bioinfo, Biotech, Micro, Biochem, and other life science backgrounds. It is also ideal for students aiming for research, higher studies, or careers in healthcare and biotech industries.

SCIENCE AND TECHNOLOGY

Biosciences & Bioinformatics

Broad area of internship/training

- Advanced Bioinformatics training
- Clinical & Translational Bioinformatics
- Computational Drug Discovery
- Genomics and Proteomics
- Genome Assembly & Annotation
- Functional Genomics & Pathway Analysis
- RNA-Seq Data Analysis
- NGS Data Analysis Using Linux & R
- Clinical Variant Interpretation & Prioritization
- Drug design and discovery
- Drug screening
- Drug repurposing
- Pharmacokinetic Analysis
- Toxicity analysis of drugs/metabolites
- Machine Learning for Drug Discovery: Concepts to Applications
- Homology Modeling & Protein Structure Analysis: From Sequence to Structure
- Molecular Docking Series
- Molecular Dynamics Simulation in Drug Discovery
- Metagenomics
- In Silico rDNA Technology
- CRISPR Technology
- Fundamentals of Transgenics Part I: Gene Cloning & Vectors
- Certificate Program in DNA Barcoding
- DNA Fingerprinting and Barcoding
- Online Hands-On Training on R for Biologists
- Bioinstrumentation Techniques
- AI, Programming & Data Science Tools
- R / Bioconductor | Python (Biopython) | Linux Environment | BLAST, ClustalW | AutoDock / PyMOL | GROMACS (MD Simulation) | NCBI, Protein Data Bank, UniProt databases

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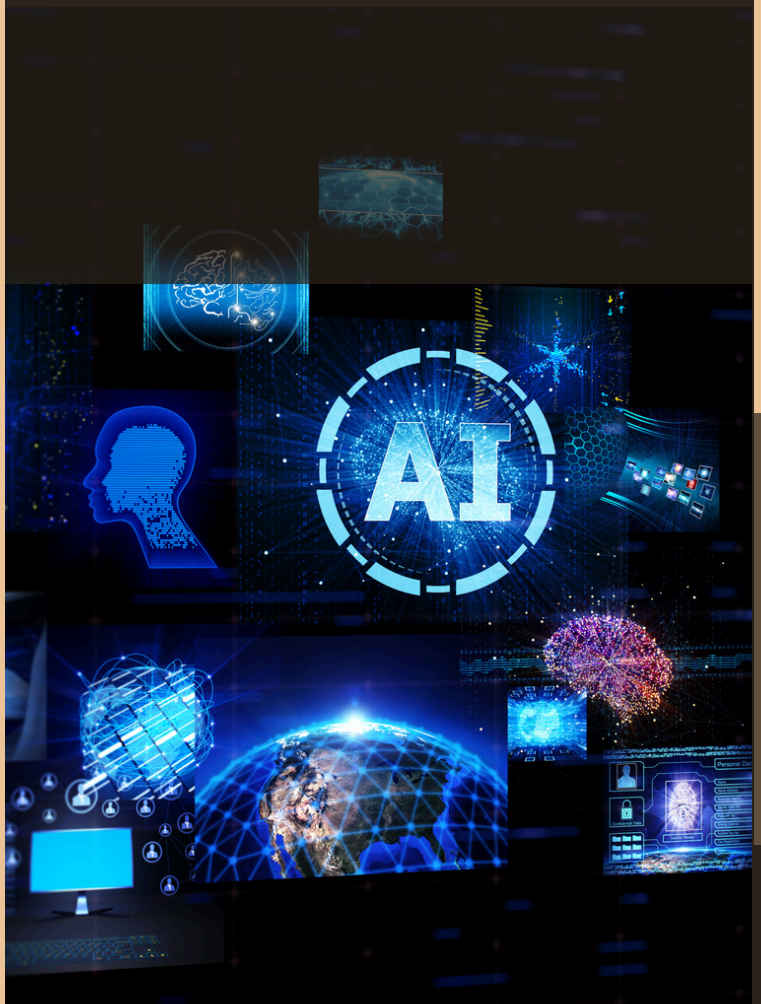
ENGINEERING

Artificial Intelligence, Machine Learning & Data Science

Programming, IT & Cybersecurity



Program Overview

The Summer Training Program in Artificial Intelligence, Machine Learning, and Data Science is designed to equip learners with in-demand digital and analytical skills required in today's technology-driven industries. Covering core concepts to advanced applications, the program emphasizes real-world problem solving, data-driven decision-making, and AI integration across domains such as healthcare, drug discovery, and engineering. With a strong focus on hands-on training, live projects, and industry-oriented tools, participants gain practical exposure to programming, data analytics, cybersecurity, and emerging technologies. This training prepares students for careers in AI development, data science, IT, and next-generation technology sectors, making them job-ready and future-focused.

Why AI & Machine Learning?

Artificial Intelligence (AI) and Machine Learning (ML) are transforming industries through smarter decisions, automation, and innovation. They help analyze data, improve efficiency, and drive better outcomes across sectors like healthcare, finance, and engineering. With growing demand, AI and ML offer strong career opportunities and enable solving real-world problems, making learners future-ready in a technology-driven world.

AI & Machine Learning Training

- AI & Machine Learning for Modern Healthcare
- Applied Artificial Intelligence & Data Science for Real-World Problem Solving
- Advanced Certificate Course on Applied AI, Data Science & Cybersecurity with Python
- Python for Data Analytics & Machine Learning
- Machine Learning for Drug Design & Analysis
- AI Developer Training Course
- AI in Immunology
- Artificial Intelligence in Drug Discovery
- Artificial Intelligence in Biomedicine & Biotechnology

Programming, IT & Cybersecurity

- Fundamentals of SQL & Database Management for Beginners
- Data Science & Cybersecurity
- R Programming & Python
- Website & Application Designing
- Biopython and Glaxy
- Digital Marketing Course

Who can Join?

This program is ideal for B.Tech, B.Sc, BCA, M.Tech, M.Sc, MCA students and graduates from engineering, computer science, IT, and science backgrounds. It is also suitable for beginners, aspiring data scientists, AI enthusiasts, and professionals looking to upgrade their skills in emerging technologies

Learn from Expert Faculty of IITs, NITs & Leading Institutions

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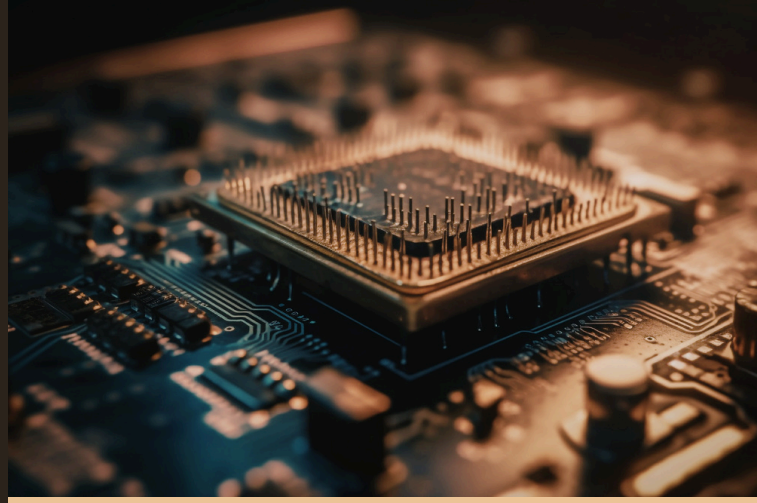
ENGINEERING

Energy, Renewable Systems & Smart Technologies

Electronics



Program Overview

These training programs in Energy, Renewable Systems, Smart Technologies, and VLSI Design are designed to equip learners with future-focused technical skills aligned with evolving industry needs. Covering advanced concepts such as renewable energy modelling, hybrid energy systems, smart grids, and electric vehicle technologies, along with hands-on VLSI design training, the program provides strong practical exposure to real-world applications.

With increasing global demand for clean energy solutions, smart infrastructure, and semiconductor technologies, these domains offer excellent career opportunities in power sector, EV industry, energy consulting, chip design, and electronics manufacturing. Participants gain industry-relevant expertise, problem-solving abilities, and technical proficiency, making them job-ready for roles in both core engineering industries and cutting-edge technology sectors.

Who can Join?

These programs are ideal for B.Tech, M.Tech, Diploma, and B.Sc/M.Sc students and graduates from Electrical, Electronics, Electrical & Electronics, Mechanical, Energy Engineering, and related fields. They are also suitable for aspiring engineers, professionals, and individuals interested in renewable energy, EV technology, smart grids, and VLSI design. Beginners with a basic understanding of engineering fundamentals and a keen interest in emerging technologies can also enroll.

Energy, Renewable Systems & Smart Technologies Training

- Advanced Energy Management & Renewable System Modelling (By IIT Faculty)
- Industry & Research Training on Sustainable Hybrid Energy Systems (By IIT Faculty)
- Smart Grid Systems (Design, Automate & Secure Future Power Grids)
- Electric Vehicles (EV) & EV Grid Systems

Electronics & VLSI Design

- Job-Oriented VLSI Design Training with Live Project
- Drone Design and Development
- Embedded system with SoC 5G and Antennna Design

Learn from Expert Faculty of IITs, NITs & Leading Institutions

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MEDICAL SCIENCES

Advanced Medical Sciences & Healthcare Technologies

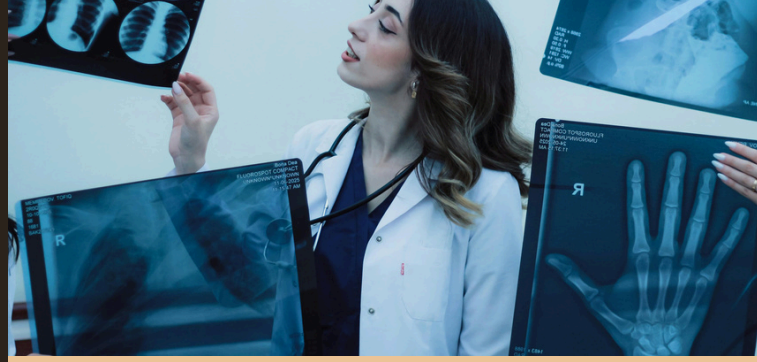
Program Overview

This Summer Training in Medical Sciences is designed to equip learners with clinical knowledge, research skills, and emerging healthcare technologies aligned with modern medical and pharmaceutical industries. The program integrates core medical concepts with advanced domains such as genomics, precision medicine, clinical research, and artificial intelligence in healthcare.

Through expert-led sessions and practical insights, participants gain exposure to real-world clinical practices, diagnostics, research methodologies, and healthcare innovations. This training builds a strong foundation for careers in clinical research, hospitals, pharmaceuticals, biotechnology, and digital health, making learners industry-ready in today's evolving medical landscape.

Who can Join?

- B.Sc / M.Sc (Life Sciences, Microbiology, Biotechnology, Biochemistry, Biomedical)
- B.Tech / M.Tech/ BCA / MCA (Computer Science & Application Biotechnology, Bioinformatics, Biomedical Engineering)
- MBBS, BDS, B.Pharm, M.Pharm, Nursing & Allied Health Sciences students
- Research scholars & PhD aspirants
- Healthcare, pharma & biotech professionals seeking skill enhancement



Healthcare Technology & Research

- Artificial Intelligence in Modern Healthcare
- Clinical Research, Trials & Regulatory Affairs

Molecular Medicine & Advanced Therapeutics

- Molecular Medicine
- Cancer Biology, Genomics & Drug Repurposing
- Biomolecules and Metabolism: From Fundamentals to Disease Mechanisms
- Immunology and Vaccine Design
- Precision Medicine

Clinical & Surgical Sciences

- Biomechanics of Joints and Implants (By IIT Faculty)
- Clinical Surgical Anatomy for Operation Theatre & Anaesthesia Practice
- RadAnat: Radiological Anatomy Training and Workshop

Training by Top Medical College Faculty & Industry Experts

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Program Overview

Our Summer Training Programs (one to six week) in Pharmaceutical Sciences, Bioinformatics, Biotechnology, and Microbiology are designed to equip pharmacy students with industry-relevant skills, practical exposure, and job-oriented competencies aligned with the pharmaceutical, biotech, and healthcare sectors. These short-term programs focus on hands-on learning, real-world applications, and modern tools used in drug discovery, clinical research, and pharma industries. Participants gain practical exposure to drug design, data analysis, regulatory processes, microbiology, and AI-driven pharma applications, building a strong foundation for careers in industry, research, and higher studies.

Who Can Join?

- D. Pharm B.Pharm & M.Pharm Students (All Years)
- Students from Pharmaceutical Sciences & Pharmacy Practice
- Final-year students seeking industry exposure & job skills
- Students preparing for careers in Pharma Industry, Clinical Research, QA/QC & Regulatory Affairs
- Aspirants interested in Drug Discovery, Bioinformatics & AI in Pharma

PHARMA SCIENCES

Pharma Innovation & Drug Development

Pharmacy Training Program

- GMP, QA & Pharmaceutical Manufacturing
- Pharmaceutical Microbiology & Sterile Techniques
- AI in Drug Discovery & Pharma
- Bioinformatics for Pharmacy
- Pharmaceutical Regulatory Affairs
- Analytical Techniques in Pharma
- Drug Discovery & Molecular Docking
- Clinical Research & Pharmacovigilance

Other recomended courses for Pharmacy students

- Computational Drug Discovery
- Machine Learning for Drug Discovery: Concepts to Applications
- NGS Data Analysis Using Linux & R
- Metagenomics
- In Silico rDNA Technology
- R for Biologists
- Bioinstrumentation Techniques
- Analytical Microbiology Techniques
- Industry-Oriented Skills in Microbiology & Molecula Biology
- Artificial Intelligence in Modern Healthcare
- Molecular Medicine
- Cancer Biology, Genomics & Drug Repurposing
- Biomolecules & Metabolism
- Immunology and Vaccine Design
- Precision Medicine
- Artificial Intelligence in Biomedicine & Biotechnology

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Why Choose CATR?

- Training by IIT, NIT, AIIMS & Top Institution Experts
- Industry-Oriented & Job-Focused Programs
- Live Projects with Real-World Applications
- Multi-Domain Learning (AI + Bio + Medical + Engineering)
- Flexible Online Learning with Lifetime Access*
- Strong Focus on Practical Skills, Not Just Theory

Program duration and Fee

*** Group Discount Available**

- **4 Weeks Summer Training**
  - 💰 Fee: ₹6,000
- **6 Weeks Summer Training**
  - 💰 Fee: ₹8,000
- **8 Weeks Summer Training**
  - 💰 Fee: ₹10,000

Limited Seats | Early Enrollment Recommended
Start Your Career Transformation This Summer

Contact Us

Ready to advance your career? Connect with our team to learn more about course schedules, fees, and enrollment procedures.

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