SilicoScientia Pvt. Ltd.

DYP DPU
School of Pharmacy and Research, Pune
(Formerly Dr. D.Y. Patil Institute of Pharmaceutical Sciences and Research, Pimpri, Pune Maharashtra, India)

ADVANCED DIPLOMA IN
ARTIFICIAL INTELLIGENCE AND
COMPUTATIONAL DRUG DISCOVERY

A one-year advanced diploma blending AI, ML, and bioinformatics to accelerate innovation in drug discovery.

Get hands-on experience, learn from experts, and build your future in cutting-edge biomedical research!

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Visit Our Website
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About Dr. D. Y. Patil Dnyan Prasad University's School of Pharmacy and Research, Pune

(Formerly Dr. D.Y. Patil Institute of Pharmaceutical Sciences and Research, Pimpri, Pune Maharashtra, India)

DYP DPU

The School of Pharmacy and Research (formerly known as Dr. D. Y. Patil Institute of Pharmaceutical Sciences and Research), is a prestigious institution imparting advanced pharmaceutical education since its establishment in 1994. The school offers a range of programs, including D. Pharm, B. Pharm Integrated MBA (B.Pharm + MBA (Pharm.Tech), Pharm.D, Pharm.D (PB) M.Pharm and PhD. The curriculum is thoughtfully designed to provide students with an in-depth understanding of pharmaceutical practices, drug development, healthcare systems and management skills. Recognized for its commitment to quality education, academic excellence, and industry collaborations, the school has made significant contributions to the healthcare sector and plays a pivotal role in developing self reliant pharmacists.

About SilicoScientia Pvt Ltd.

SilicoScientia Pvt.Ltd.

SilicoScientia Pvt. Ltd., the industry partner for this advanced diploma program, is a pioneer in leveraging AI, machine learning, and data-driven technologies to transform healthcare and drug discovery. With a multidisciplinary team, the company has built cutting-edge platforms that accelerate target identification, improve treatment prediction, and optimize therapeutic design. Through this collaboration, SilicoScientia offers students hands-on experience with real-world tools and research, bridging academia and industry. Their innovation-driven mission makes them an ideal partner in preparing students for the future of biomedical science.

Role of AI and ML in Drug Discovery

Artificial Intelligence (AI) and Machine Learning (ML) are revolutionizing drug discovery by enabling faster, data-driven decisions, enhancing target identification, and streamlining therapeutic design. These technologies help researchers analyze complex biological data, predict molecular interactions, and significantly reduce the time and cost of developing new treatments. With the growing demand for AI expertise in biomedical research, specialized training is essential. The Advanced Diploma in Artificial Intelligence and Computational Drug Discovery equips students with practical skills and a strong foundation to lead in research, innovation, and next-generation healthcare solutions.

PROGRAM STRUCTURE

Python Programming and Applications: Build a strong foundation in Python, one of AI and data science's most widely used languages. Learn its applications in biomedical data analysis and computational research.

JAVA Programming: Develop programming skills in Java for data handling, backend processing, and creating AI models in drug discovery workflows.

Biostatistics: Understand statistical methods essential for analyzing biological data, clinical studies, and interpreting AI model outputs accurately.

Genomics, Proteomics, and Structural Bioinformatics: Explore molecular-level data through genomics and proteomics while learning structural bioinformatics tools for target identification and drug design.

Artificial Intelligence in Healthcare and Medicine: Gain insight into the core principles and real-world applications of AI in medical diagnostics, treatment planning, and healthcare systems.

Machine Learning and Deep Learning: Learn ML/DL algorithms for pattern recognition, prediction, and decision-making in biomedical and drug discovery contexts.
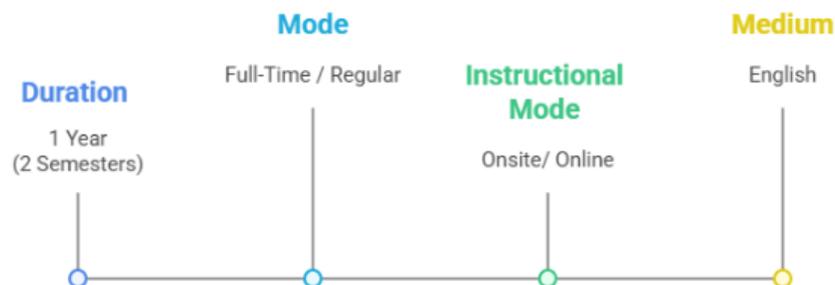
Data Analysis in Drug Discovery: Apply data mining and ML techniques to analyze biological datasets and extract meaningful insights for drug development.

Advanced Molecular Modelling Techniques in Drug Development: Understand 3D molecular modeling, docking, and simulations to predict how potential drugs interact with biological targets.

Integrating AI into Clinical Workflows: Learn how AI is transforming clinical operations, from patient monitoring to treatment personalization, enabling precision medicine.

Ethics and Regulatory Aspects of AI in Pharmaceuticals: Study the ethical, legal, and regulatory frameworks governing the use of AI in healthcare and biomedical research.

PROGRAM OVERVIEW

Duration
1 Year
(2 Semesters)

Mode
Full-Time / Regular

Instructional Mode
Onsite/ Online

Medium
English

PROGRAM HIGHLIGHTS

- Teaching Experts from Industry and Academia
- Exposure to regulatory and ethical frameworks
- Practical training on Python, JAVA, ML, and bioinformatics tools
- Hands-on experience with industry software and datasets
- Guest lectures by industry and academia leaders

ADMISSION DETAILS

Eligibility : Any of the Graduate: MBBS/ B.D.S./ BAMS/ B.H.M.S/ B. Pharm./ B.Tech./ BVSC./ B.Sc. (Nursing)/ M.Sc. in allied disciplines/ M. Pharm./ Pharm D./ B.Sc. in allied disciplines

Selection   : Personal Interview

Program Fee :

For Indian Students- INR 100,000

For International Students- as per university policy

CERTIFICATE AND EVALUATION

- Internal Assessments + term-end exams
- Grade-based performance (O to F)
- Diploma Awarded by: Dr. D.Y. Patil Dnyan Prasad University upon successful completion

INFRASTRUCTURE

- High-Performance Computing System
- Access to advanced Drug Discovery Software
- Modern, and Well-Configured Computer Lab
- Individual Workstation for each student

CAREER OPPORTUNITIES

- Computational Chemist
- Bioinformatics Analyst
- Machine Learning Engineer
- Research Associate
- AI Scientist in Drug Discovery

CONTACT DETAILS

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