



## DEPARTMENT SCHOOL OF PHARMACY CIRCULAR

**No: AJU/SOHAS/141/26**

**Date 30.04.2026**

It is hereby notified to all the faculties of School of Pharmacy that the department in association with its Syllabus Revision will conduct a Short-Term Training Program (STTP) from 20th May 2026 to 26th May 2026 on Basics of Python Programming for Pharmaceutical Sciences (Theory) as per the revised B. Pharm syllabus to be implemented from 2026. The timing will be from 9:30am – 4:30 pm. For information Pharmacy Council of India (Ref No: 14-154/2025-PCI) has Implemented New B Pharma Syllabus from academic sessions 2026-2027 aligning with NEP 2020. As per instruction awareness programs need to be conducted by the institutions. This STTP will be a part of awareness programme towards the implementation of the revised syllabus for B. Pharm program to be implemented from 2026. Venue will be Block B (Room Number 211). All faculties must have to participate this program. Failing to attend this will be considered as absent in the department. Interested staff members from the department can also participate the STTP.



Dean  
School of Pharmacy  
ARKA JAIN University Jharkhand

**Dean**  
**School of Pharmacy**

**Copy to**

Vice Chancellor  
IQAC  
Office of the Registrar  
Syllabus Revised committee  
Academic Coordinator  
In charge website  
Office Record

Course Code	Course Title			Course Type
<b>BP101T</b>	<b>Basics of Python Programming for Pharmaceutical Sciences (Theory)</b>			Core
Credit	Hours Per Week (L-T-P)			Max. Hours
	L	T	P	
2	2	--	--	30
Maximum Marks	SE			ESE
50	20			30

### Course Objectives:

The objectives of this course are to:

1. Introduce the fundamentals of Python programming for pharmaceutical sciences.
2. Develop basic programming skills using control structures, functions, and data structures.
3. Provide knowledge of data handling techniques for structured dataset management.
4. Familiarize students with data analysis tools such as NumPy and Pandas for healthcare datasets.
5. Enable students to visualize and interpret pharmaceutical data.

### Course Outcomes (CO):

CO No.	Upon successful completion of this course, the students will be able to:
1	Explain the fundamentals of Python programming, including variables, data types, operators, and libraries.
2	Analyze program logic using control structures and functions.
3	Organize, manipulate, and retrieve data using data structures and file handling techniques.
4	Analyze pharmaceutical datasets using Python libraries.
5	Visualize and interpret pharmaceutical data using graphical tools.

### Detailed Syllabus:

Unit No.	Topics	No. of Lectures
I	<b>Introduction to Python programming</b> <ul style="list-style-type: none"> <li>• Installing Python and an Integrated Development Environment (IDE) [Jupyter Notebook, PyCharm, VS Code etc.], Advantages of IDEs over text editors.</li> <li>• Python variables and data types (integers, floats, strings, booleans), Type casting and basic operators (arithmetic, comparison, logical), Input and output operations.</li> </ul>	6 Hours

	<ul style="list-style-type: none"> <li>• Basic string operations and manipulation techniques.</li> <li>• Introduction to standard libraries and third-party libraries, installing and uninstalling libraries.</li> </ul>	
II	<p><b>Control Structures &amp; Functions</b></p> <ul style="list-style-type: none"> <li>• Conditional statements (if, if-else, if-elif-else), nested conditions</li> <li>• Loops (for loop, while loop).</li> <li>• Break and continue statements.</li> <li>• Defining and calling functions, passing arguments and returning values.</li> <li>• Writing modular programs for simple pharmaceutical applications- dosage calculation and BMI calculation.</li> </ul>	6 hours
III	<p><b>Data Structures &amp; File Handling</b></p> <ul style="list-style-type: none"> <li>• Lists, tuples, and dictionaries.</li> <li>• Indexing and slicing lists, basic operations on lists and dictionaries, string manipulation techniques.</li> <li>• Introduction to NumPy arrays, basic operations using NumPy (array creation, arithmetic operations).</li> <li>• Reading and writing CSV files.</li> <li>• Understanding structured healthcare datasets.</li> <li>• Importing small pharmaceutical datasets and performing basic data access and manipulation tasks.</li> </ul>	6 hours
IV	<p><b>Data Handling with Pandas</b></p> <ul style="list-style-type: none"> <li>• Introduction to Pandas library.</li> <li>• Pandas Series and DataFrame structures.</li> <li>• Reading CSV and Excel files-PK study datasets and ADR reports</li> <li>• Inspecting datasets using functions such as head(), tail(), info(), and describe().</li> <li>• Data cleaning techniques and handling missing values.</li> <li>• Filtering and selecting data based on conditions.</li> <li>• Grouping data and performing aggregation functions.</li> </ul>	6 Hours
V	<p><b>Data Visualization with Matplotlib</b></p> <ul style="list-style-type: none"> <li>• Introduction to Matplotlib.</li> <li>• Creating line plots, histograms, scatter plots, and box plots.</li> <li>• Labeling axes, titles, and legends.</li> <li>• Create plots and visualize pharmaceutical datasets - concentration-time curves for oral and IV administration, ADR reporting rates across drugs, dissolution profiles.</li> <li>• Scientific interpretation of plots.</li> </ul>	6 Hours

**Recommended References (Preferably Latest Editions):**

1. Weiss, C.J., 2017. *Scientific Computing for Chemists with Python*. Available at: <https://weisscharlesj.github.io/SciCompforChemists/notebooks/introduction/intro.html>
2. Perkovic, L., 2015. *Introduction to Computing Using Python: An Application Development Focus*. 2nd ed. Hoboken: Wiley.
3. Sweigart, A., 2025. *Automate the Boring Stuff with Python*. 3rd ed. Available at: <https://automatetheboringstuff.com/>
4. W3Schools, n.d. *Python Tutorial*. Available at: <https://www.w3schools.com/python/>
5. Datasets for Education and Research:  
Mentors and students can access healthcare datasets from sources such as Kaggle (healthcare records), government agencies (healthdata.gov, WHO, <https://www.data.gov.in/>), and clinical trial registries (<https://ctri.nic.in/>, <https://clinicaltrials.gov/>). *Always use data responsibly.*



## भारतीय भेषजी परिषद्

(स्वास्थ्य एवं परिवार कल्याण मंत्रालय के अंतर्गत सांविधिक निकाय)  
भारत सरकार

आई-300, तीसरी मंजिल, टावर-1, वर्ल्ड ट्रेड सेंटर,

नौरोजी नगर, नई दिल्ली-110029

टेलीफोन नंबर 011-65218900-01

E-mail: [registrar@pci.nic.in](mailto:registrar@pci.nic.in)



कामये दू खततानाम प्राणिनामार्तिनाशनम्

**PHARMACY COUNCIL OF INDIA**  
(Statutory body under Ministry of Health & Family Welfare)  
Government of India

I-300, 3rd floor, Tower-I, World Trade Centre,

Nauroji Nagar, New Delhi-110029

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E-mail: [registrar@pci.nic.in](mailto:registrar@pci.nic.in)

Ref No: 14-154/2025-PCI

- All Institutions running B.Pharm Course.
- All Examining Authorities/Universities approved by PCI u/s 12(2) of the Pharmacy Act, 1948.

**Sub: Implementation of New B Pharma Syllabus from academic sessions 2026-2027 (as per NEP 2020) by approved Pharmacy Institutions- U/s 12 (1) and approved Examining Authority - U/s 12 (2) .**

Sir/Madam,

Greetings to all Institutions conducting B.Pharm Course and the Examining Authorities for the launch of B. Pharm syllabus on 17.4.2026.

1. The Pharmacy Council of India, with the prior approval of the Central Government, has notified the Bachelor of Pharmacy (B.Pharm) Course Regulations, 2014. These Regulations are posted on the Council's website [www.pci.gov.in](http://www.pci.gov.in)
2. As per regulations 6 and 8 of the Bachelor of Pharmacy (B.Pharm) Course Regulations, 2014, the course of study for B.Pharm course and syllabus for each subject of study shall be as may be prescribed by the Pharmacy Council of India from time to time.
3. Earlier the Council has prescribed the Rules and Syllabus for B.Pharm Course which were implemented from 2016-2017 academic session.
4. Now the Council has revised the syllabus for Bachelor of Pharmacy (B.Pharm) as per NEP, 2020 which is available as Council's website [www.pci.gov.in](http://www.pci.gov.in)
5. Further, the Council has decided to instruct the all Universities/Colleges to implement the above, syllabus from 2026-2027 academic session and submit compliance regarding implementation of the same.
6. The Examining Authorities are further requested to conduct awareness programmes to facilitate effective implementation of the B. Pharm Syllabus.

In view of above, all the institutions running B.Pharm Course and the Examining Authorities holding examination of pharmacy students are required to strictly follow the statutory provisions contained in the said syllabus for approval under sections 12(1) and 12(2) of the Pharmacy Act, 1948. It may please be noted that further extension of approval of the pharmacy institutions u/s 12(1) and of the universities u/s 12(2) of the said Act shall depend on the implementation of the course of study and syllabus prescribed by the PCI as mentioned above.

Yours faithfully

**(ANIL MITTAL)**  
**Registrar-cum-Secretary**

**Digitally signed by**  
**ANIL MITTAL**  
**Date: 29-04-2026**  
**16:46:57**