

**Date: 28<sup>th</sup> March 2025/Saturday**

**Title: “Transforming the Pharmaceutical Research: Exploring the Design of Experiment for Quality Research”**

**Objective:**

- To understand DOE (Design of experiments) is a powerful data collection and analysis tool that can be used in a variety of experimental situations.
- Identify interactions between factors and model the behaviour of the response as a function of the factors.
- To find the optimal levels of factors to achieve desired outcomes.
- To reduce variability in the process or product.

**Program Outcome: PO1, PO2, PO6, PO7, PO9, PO10, PO11**

**Details of the Organisers:** A Guest lecture was organized in the auditorium of the college and was coordinated by Dr. Jaya Agnihotri and Dr. I. Ramya.

**Details of the Resource Person:** Dr. Khushwant Yadav, Associate Professor at SPP School of Pharmacy & Technology Management, Mumbai. Dr. Khush Yadav has an experience of more than 15 years in both Industry and Academics. He has been a Research Scientist and has done collaborative research with the National Institute for Research in Reproductive Health (NIRRH), ICMR Lab, Mumbai; Institute of Nuclear Medicine & Allied Sciences (INMAS), DRDO Lab, Delhi etc. His publications have been listed in Articles by Elsevier. He is recipient of Fellow of Institute of Chemists (India).

**Participants Details:**

Total no. of college students: 50

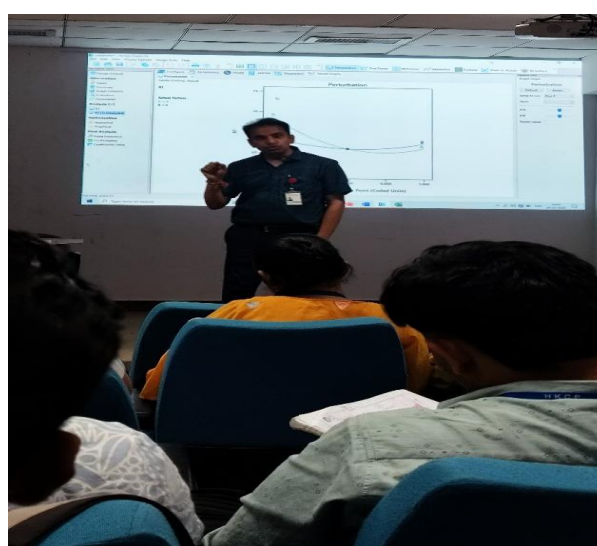
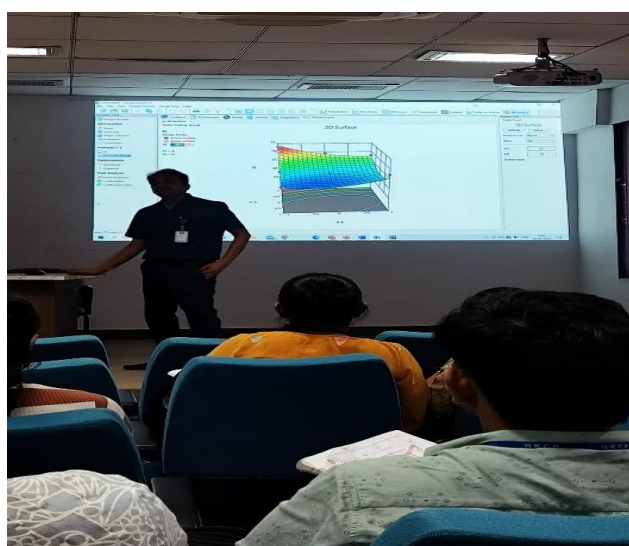
Total no of Faculty: 10

**Summary of the Lecture:**

A guest lecture on “Transforming the Pharmaceutical Research: Exploring the Design of Experiment for Quality Research” was organized by the Skill Enhancement initiatives Committee H. K. College of Pharmacy on 28<sup>th</sup> March 2025. The event began with a warm welcome to the speaker followed by a brief introduction of the speaker and objectives of the seminar. Dr. Khushwant discussed the importance of DOE which can identify important interactions that may be missed when experimenting with one factor at a time. He added that all possible combinations can be investigated (full factorial) or only a portion of the possible combinations (fractional factorial) can be investigated. Dr. Khushwant explained how planning the execution of an experiment enables avoiding frequently encountered problems in analysis. He emphasized blocking, randomization, and replication as key concepts in creating a design experiment. At the end of the session, Dr. Yadav taught about 3D-Graphs, design matrix and how to run experimental

runs for the factors being investigated. The design matrix showed all possible combinations of high and low levels for each input factor which can be coded as +1 and -1. Overall, the seminar was informative and inspiring.

#### Photo Gallery:



### Key Outcome of the Lecture/Activity:

- Students gained knowledge regarding evaluation of alternatives and identify the root causes of defects and variations.
- Participants understood to optimize process settings to achieve the best results and how to reduce costs and increase efficiency.
- Students were explained about screening design that narrows the field of variables under assessment. Knowledge on Full factorial design that studies the response of every combination of factors and factor levels were gained to a certain extent.

### Link for social media:

<b>LinkedIn:</b>	• <a href="https://www.linkedin.com/posts/h-k-college-of-pharmacy-mumbai-303524222_skill-development-cell-of-h-k-college-of-activity-7331917324544806912-Z9rr?utm_source=share&amp;utm_medium=member_desktop&amp;rcm=ACoAADf2WrMBUFgAeZVznddoMfc3VtpDnyqdS4Y">https://www.linkedin.com/posts/h-k-college-of-pharmacy-mumbai-303524222_skill-development-cell-of-h-k-college-of-activity-7331917324544806912-Z9rr?utm_source=share&amp;utm_medium=member_desktop&amp;rcm=ACoAADf2WrMBUFgAeZVznddoMfc3VtpDnyqdS4Y</a>
<b>Facebook:</b>	• <a href="https://www.facebook.com/photo/?fbid=1161558849317089&amp;set=a.470185965121051">https://www.facebook.com/photo/?fbid=1161558849317089&amp;set=a.470185965121051</a>
<b>Instagram:</b>	• <a href="https://www.instagram.com/p/DKBlp9lIbIZ/?utm_source=ig_web_copy_link&amp;igs_h=MzRIODBiNWFIZA==">https://www.instagram.com/p/DKBlp9lIbIZ/?utm_source=ig_web_copy_link&amp;igs_h=MzRIODBiNWFIZA==</a>

*Jagdish*

**Dr. Jaya Agnihotri**  
**Dr. I. Ramya** *for*  
Event Coordinators

*A Raut*

**Dr. Anagha Raut**  
IQAC Coordinator

*Phanse*

**Dr. Tushar N. Lokhande**  
Principal

