

## Certificate Course of Industrial Pharmacy-I



The exam is conducted by National Testing Agency (NTA) in various exam centres across India. The weightage of marks: 30% For in Course Assessment and 70% of End Term Proctored Exam. All the learners who obtain 40% marks in internal assessment and 40% marks in end-term proctored exam (separately) will be eligible for certificate and credit transfer.

### Objectives

The course has been designed with the aim that after completing this course, you should be able

- To identify and practice Dosage forms; and their manufacturing techniques
- To practice all the related and practical aspect of dosage form development
- To formulate and evaluate solid, liquid and semisolid dosage forms
- To correlate the theoretical knowledge with professional and practical need of pharmaceutical industry

# **The Expert Team Industrial Pharmacy-I**

**Dr Ajay Semalty**  
(Course Coordinator & Subject Matter Expert)

**Dr Mona Semalty**  
(Co-Course Coordinator & Subject Matter Expert)

**Dr Lokesh Adhikari**  
(Subject Matter Expert)

**Production:**  
EMRC Roorkee

## **Course syllabus**

**WEEK: 12**

**MODULES 40**

### **Week 1      Preformulation I**

Preformulation I: Physical form (crystal & amorphous),  
Preformulation I: Polymorphism, particle size, shape  
Preformulation I: Solubility profile (pKa, pH)  
Preformulation I: Partition coefficient, flow properties

### **Week 2      Preformulation II**

Preformulation II: Hydrolysis, oxidation, reduction  
Preformulation II: Racemisation,  
Preformulation II: Dissolution, permeability & BCS classification  
Preformulation II: Polymerization

### **Week 3      Tablets**

Tablets: Introduction, classification of tablets. Formulation/preparing of tablets, granulation methods.

Tablets: Compression and processing problems. Equipment and tablet tooling, Tablet defects.

Tablets: Tablet coating: Types, coating materials, formulation of coating composition, methods of coating, equipments employed and defects in coating

Tablets: QC of tablets: apparatus, methods, graphical presentations, official and unofficial tests.

- Week 4      Liquid Orals**  
 Liquid orals: Formulation and manufacturing of solution, syrups and elixirs,  
 Filling and packaging  
 Liquid orals: Emulsions: I  
 Liquid orals: Emulsion II  
 Liquid orals: Suspensions: Formulation, evaluation
- Week 5      Parenterals I**  
 Parenterals I: Introduction, Preformulation of parenterals  
 Parenterals I: Formulation of Parenterals
- Week 6      Parenterals I**  
 Parenterals I: Types of Parenteral preparation  
 Parenterals I: Lay out and Production facilities
- Week 7      Parenterals II**  
 Parenterals II: Pyrogens and pyrogenicity  
 Parenterals II: Quality control of parenterals
- Week 8      Capsules**  
 Capsules: Introduction, Advantages, Disadvantages, Capsule Production, hard  
 Gelatin capsules  
 Capsules: Methods of filling capsules, Soft Gelatin Capsules  
 Capsules: Formulation Consideration, Production of soft gelatin capsules, Non-  
 gelatin soft capsules  
 Capsules: Evaluation of commercial capsules
- Week 9      Pellets and Ophthalmic Preparations**  
 Pellets: Introduction, formulation, pelletization process, equipment needed  
 Ophthalmic Preparations: Introduction, absorption through eye, formulation  
 considerations  
 Ophthalmic Preparations: formulation of eye drops, lotion, ointments  
 Ophthalmic Preparations: Methods of preparation; labeling, containers  
 Evaluation
- Week 10     Pharmaceutical Aerosols**  
 Pharmaceutical Aerosols: Definitions, Advantages, Limitation, Uses  
 Pharmaceutical Aerosols: Components of aerosols  
 Pharmaceutical Aerosols: Components and systems of aerosols  
 Pharmaceutical Aerosols: inhalers and Evaluation of Aerosols

**Week 11      Cosmetics**

Cosmetics: Introduction, absorption through skin, types of cosmetic preparations,  
Formulation of tooth pastes

Cosmetics: Formulation of lipsticks, shampoos, hair dyes

Cosmetics: Formulation of cold cream and vanishing cream, sunscreens

**Week 12      Packaging Materials Science**

Packaging Materials Science: Materials used for packaging of pharmaceutical  
products,

Packaging Materials Science: Factors influencing choice of containers Legal and  
official requirements,

Stability aspects,

Packaging Materials Science: Quality control tests of packaging materials

**List of Course Completed Students**

Sr. No.	Course Name	Name of students
1.	Industrial Pharmacy-I	Mr. Jadhav Lavkush Santosh Mr. Mamale Kalpana Babu Ms. Anawade Geeta Anil Ms. More Aishwarya Vinnayakrao Mr. Waghmare R. B. Mr. Manke M. B.

# Certificates of Course Completed Students



## SWAYAM ONLINE COURSE CERTIFICATION

*This certificate is awarded to  
**Jadhav Lavkush Santosh**  
for successfully completing the four credit course  
**Industrial Pharmacy-I**  
with a consolidated score of 61%  
from the evaluation based on continuous online assessments and the Proctored  
examination held in month of March 2021.*



Roll No. : 4010212593

*This course was offered by Dr. Ajay Semalty of HNB Garhwal University*

Marks in Online Assignments		Marks in Proctored Exam		Total Score	
Total	Obtained	Total	Obtained	Total	Obtained
30	22	70	39	100	61

J. B. Nadda  
National Coordinator  
Consortium for Educational Communication (CEC),  
New Delhi



Prof. Arun Singh Rawat  
Controller of Examination  
H.N.B. Garhwal University, Garhwal

Issued On : 03/08/2021

To validate and check scores: <https://swayam.gov.in>

## SWAYAM ONLINE COURSE CERTIFICATION

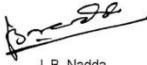
*This certificate is awarded to  
**Kalpna Balu Mamale**  
for successfully completing the four credit course  
**Industrial Pharmacy-I**  
with a consolidated score of 78%  
from the evaluation based on continuous online assessments and the Proctored  
examination held in month of March 2021.*




Roll No. : 4010205989

*This course was offered by **Dr. Ajay Semalty** of **HNB Garhwal University***

Marks in Online Assignments		Marks in Proctored Exam		Total Score	
Total	Obtained	Total	Obtained	Total	Obtained
30	26	70	52	100	78

  
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National Coordinator  
Consortium for Educational Communication (CEC),  
New Delhi



  
Prof. Arun Singh Rawat  
Controller of Examination  
H.N.B. Garhwal University, Garhwal



## SWAYAM ONLINE COURSE CERTIFICATION

*This certificate is awarded to  
**Geeta Anil Anawade**  
for successfully completing the four credit course  
**Industrial Pharmacy-I**  
with a consolidated score of 61%  
from the evaluation based on continuous online assessments and the Proctored  
examination held in month of March 2021.*



Roll No. : 4010202440

*This course was offered by **Dr. Ajay Semalty** of **HNB Garhwal University***

Marks in Online Assignments		Marks in Proctored Exam		Total Score	
Total	Obtained	Total	Obtained	Total	Obtained
30	28	70	33	100	61

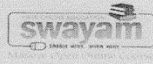
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### SWAYAM ONLINE COURSE CERTIFICATION

*This certificate is awarded to  
More Aishwarya Vinayakrao  
for successfully completing the four credit course  
Industrial Pharmacy-I  
with a consolidated score of 73%  
from the evaluation based on continuous online assessments and the Proctored  
examination held in month of March 2021.*



Roll No. : 4010207898

*This course was offered by Dr. Ajay Semalty of HNB Garhwal University*

Marks in Online Assignments		Marks in Proctored Exam		Total Score	
Total	Obtained	Total	Obtained	Total	Obtained
30	25	70	48	100	73

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### SWAYAM ONLINE COURSE CERTIFICATION

*This certificate is awarded to  
Rahul Sugriv Waghmare  
for successfully completing the four credit course  
Industrial Pharmacy-I  
with a consolidated score of 67%  
from the evaluation based on continuous online assessments and the Proctored  
examination held in month of March 2021.*



Roll No. : 4010212658

*This course was offered by Dr. Ajay Semalty of HNB Garhwal University*

Marks in Online Assignments		Marks in Proctored Exam		Total Score	
Total	Obtained	Total	Obtained	Total	Obtained
30	26	70	41	100	67

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## SWAYAM ONLINE COURSE CERTIFICATION

*This certificate is awarded to  
Manke Mahesh Bandappa  
for successfully completing the four credit course  
Industrial Pharmacy-I  
with a consolidated score of 85%  
from the evaluation based on continuous online assessments and the Proctored  
examination held in month of March 2021.*



Roll No. : 4010206565

*This course was offered by Dr. Ajay Semalty of HNB Garhwal University*

Marks in Online Assignments		Marks in Proctored Exam		Total Score	
Total	Obtained	Total	Obtained	Total	Obtained
30	30	70	55	100	85

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