



भारतीय पैकेजिंग संस्थान  
Indian Institute of Packaging

An autonomous body under the Ministry of Commerce & Industry, Govt. of India

## 3 Months Certificate Programme in Packaging Technology

(1<sup>st</sup> August 2022- 31<sup>st</sup> October 2022)- Mumbai  
(1<sup>st</sup> December 2022- 28<sup>th</sup> Feb 2023)- Mumbai

Endorsed by



WORLD PACKAGING  
ORGANISATION

Accreditation by



The Asian Packaging Federation

### PROSPECTUS

ITC (Intensive Training Course)



Autonomous Body under Ministry of Commerce & Industry, Government of India

## About Institute

The Indian Institute of Packaging (IIP) is a national apex body which was set up in 1966 by the packaging allied industries and the Ministry of Commerce, Government of India. The Institute is an autonomous body working under the administrative control of the Ministry of Commerce. The Institute endeavours to improve the standard of packaging needed for the promotion of exports and create infrastructural facilities for overall packaging improvement in India through Research and Development, Problem solving consultancy, testing and evaluation, training and education, industrial co-ordination, information dissemination and other promotional efforts. The Institute has set up state-of-the-art infrastructure for conducting testing, consultancy and training & education activities at its Head Office at Mumbai as well as other regional centers held at Delhi, Kolkata, Hyderabad, Chennai, and Ahmedabad.

## Program Objectives

Packaging plays a vital role in building the brand image of the product along with other functions of Protection, Preservation and Presentation. It is difficult to imagine a world without packaging in the current scenario. A different design of packaged products for all types of commodities has increased significantly in recent years. The Packaging industry needs to remain gear up in terms of packaging innovations to satisfy the demand of consumers and to meet market requirement. Packaging is no more restricted to common sense subject; rather it is now well recognized as a combination of science art and technology. Significantly Packaging plays a major role in modern marketing system. The importance of packaging function in business realization is becoming widely recognized and accepted by the industry. Now-a-days, packaging education is seen as a viable option for career development.

The Indian Institute of Packaging has been creating packaging professionals from the last 52 years in order to serve the industry in a professional way through its various training and educational programs on different packaging aspects. The Three months full time certificate course in packaging is specially designed to give insight knowledge on various aspects and trends of packaging. The objectives of this course is

- To provide information on various materials, processes, governing laws and regulations involved in packaging of products through classroom teaching, laboratory and industrial visits along with case studies.
- To create packaging professional from design conception to manufacturing, who learns to speak the language of packaging and utilize it as a key differentiator for his relevant industry / business.

By way of attending this 3 months packaging course, the participants will get a platform to identify new innovations as well as new opportunities in field of packaging.

## Who Should Attend

Anyone who is involved or deals or has inclination in Packaging Industry

- Professionals working in company at various levels which have direct impact on packaging of their products.
- Entrepreneurs to learn the impact of packaging on growth of their business.
- Students who have passed 12th / ITI / Diploma / Degree in any branch and wish to enhance their skill in Packaging to grow their career path and to meet challenges of the industry.

## Target Audience

Students, Working Professionals, Managers, Entrepreneurs and New Startup professionals

## Why you should attend this course

- To gain the knowledge, tools and skills to be an influential professional in the field of packaging
- Able to interact with top Packaging Professionals through different sessions on key topics of packaging
- Have glimpse of various manufacturing units deals in packaging through industrial visits.

## What you will get

- A certificate of accomplishment to differentiate your resume and advance your career.
- A sustainable perspective on package design and development.
- A platform to identify new innovations as well as new opportunities in the field of packaging.

## Course

The course comprises over 120 classroom sessions on various aspects of packaging to be dealt by experts from respective fields. Beside theoretical exposure, practical demonstrations on testing and evaluation of packaging materials and packages have been included in the programme.

Visits to various industrial establishments and production centres have also been planned to provide an opportunity to the participants in order to get familiarised with the processes of conversion, manufacturing and the selection of packaging materials as per current trends of industry.

## Certificate

A certificate of attendance will be given to all the participants whose attendance is at least 75% of the total programme duration. Candidates passing all the examination will be awarded passing certificate.

## Performance Evaluation

Evaluation is through quizzes, written tests, discussion/literature survey and seminar presentation. In addition, there will be an individual project and group project at the end of the course.

In order to get Pass Certificate, a candidate has to acquire a minimum of 40% marks in all the quizzes, written tests, Project & viva voce examination in individual component and 50% aggregate marks.

## Facilities

The Institute is well equipped with state of art package testing Laboratory, Research and Development Centre, fitted with multimedia projector Air-conditioned classrooms, Library with vast collection of books on Packaging. The Institute has a large campus spread over 10 Acres area in the centre of Mumbai, full of greenery and fresh air with re-creational facilities along with newly built hostel and canteen facilities.



Air Conditioned Class Room



Packaging Material Laboratory



## Fee

### For Indian Participants

Non-Members - Rs. 60,000/-  
IIP Ordinary Members – 10% (discount)  
IIP – Patron / Life Member - 15% (discount)  
(Additional 18% GST will be applicable on the above fee)

### For Overseas Participants

Tuition Fees - US \$ 3,200.00  
The indicative Food & Accommodation Charges for 3 months at IIP will be US \$ 4,500.00 per participant

The Fee includes tuition Fees, essential course material along with expenditure towards transportation for industrial study tours and expert talk from industry professionals during the programme.

The Participants have to make their own arrangement for daily attendance and other incidental expenditure.

## Accommodation

The accommodation for participants who wish to reside in the campus can be provided at additional cost. The hostel fee for 3 months course duration at IIP, Mumbai is Rs. 12,500/- plus additional Rs. 1,000/- refundable security deposit. These charges are excluding food.



Hostel Block



Hostel Room

## Timings and Duration

The Classes will normally be held between 10:30 am to 5:00 pm. It will be five days in a week from Monday to Friday. Occasionally Saturday may also be used for Classes/industrial visits, if required. The duration of the programme is 3 months.

## Venue

The venue for this programme will be the Institute's premises in Mumbai, Delhi, Kolkata and Hyderabad.

## Admission Process

Candidates who desirous to take admission in this course may fill the application form after paying a sum of Rs. 100/- in cash or by demand draft in favour of "Indian Institute of Packaging" payable at Mumbai and deposit the mentioned fees. The application form can also be filled online / offline through Institute website and the form fee of Rs. 100/- to be added while depositing the course fees.

The minimum qualification required to attend this course is 10+2 and the number of seats per batch is 30 (Thirty) only. The admission to the course will be done on the basis of first come first serve, subject to availability of seats. The candidates can reserve their seat by depositing the requisite course fee along with application form.

## SYLLABUS

### 1. PACKAGING

- a) Historical background, definition of packaging as an integral part of production and marketing.
- b) Basic concepts - Physical and Physico-chemical such as colligative properties, gas laws, surface tension, dialysis, diffusion, energy measurements, etc.
- c) Package - components, separation, clearance, support, positioning, cushioning, weight distribution, suspension and closures.

### 2. PACKAGING CHARACTERISTICS

- a) Physical Characteristics of the product - physical state, weight, centre of gravity, symmetry, fragility, rigidity, surface finish, etc.
- b) Physico-chemical characteristics - susceptibility to water, water vapour, gases, odour, heat, light - mechanism of spoilage.
- c) Principles of Corrosion and its prevention.
- d) Compatibility - permissible plasticisers in plastics and coating media, their migration to food - can lining compounds and lacquers for containers for fruit and vegetables, fish, meat and other products.
- e) Package design - factors influencing design/ product-package relationship.

### 3. PACKAGING MATERIALS

Technology, manufacture, conversion, properties, applications, advantages, Limitations, trends in use and forecast for future:

- a) Paper and speciality papers.
- b) Paper Board - Folding cartons.
- c) Cellulosic film and flexible Laminates.
- d) Plastics - polyethylene, polypropylene, polystyrene, polyvinyl chloride, polyvinylidene chloride, nylon, polyester, films, laminates and other combinations.
- e) Expanded polystyrene, Expanded polyethylene, Expanded polyurethane, Bubble film.
- f) Aluminium foil.
- g) Lamination and Coatings.
- h) Tinplate, 2 CP Plate, Tin-free steel including closures.
- i) Galvanised drums, coated steel drums and closures.

- j) Aluminium rigid containers, collapsible tubes, closures.
- k) Glass containers including ampoules and vials.
- l) Composite containers, composite drums and paper tubes.
- m) Textiles - Jute textiles - Sacks.
- n) Multiwall paper sacks and Plastic Woven sacks.
- o) Wood and Wooden containers, Boxes, Crates, Wire bound packing cases, Plywood cases.
- p) Corrugated Boards and Boxes-combinations with various materials.
- q) Solid Fibre Board.
- r) Traditional packaging materials and forms, like leaves, mats, baskets and clay pots.
- s) Bio-Degradable plastics in Packaging.

### 4. ANCILLARY MATERIALS

#### a) Adhesives:

1. Theory and principles of adhesion and factors affecting bond strength.
2. Different types of adhesives - vegetable, animal, inorganic and synthetic.
3. Adhesive tapes - gum paper tapes, pressure sensitive tapes, their manufacture and applications.

#### b) Cushioning:

1. Physical concepts in cushioning, energy, impact load and concept of shock as a function of deceleration, impulse and time.
2. Prevention of shock & damage to articles by various means and their measurement.
3. Types of cushioning materials and properties - space fillers cork, paper shavings, woodwool, saw dust, coir dust, paddy straw and dry grass. Resilient materials - rubberized hair, rubberized coir, poly styrene and polyurethane foams, springs, metal shock mounts, etc. Non-resilient system - rigid foams, honeycomb, etc.

**c) Reinforcements** - straps - steel, plastic, rayon based & wires bailing hoops, etc.

**d) Stitching methods** - bags/ paper and textiles, corrugated board boxes and stitching appliances.

**e) Seals** and closures.

**f) Lining compounds and lacquers** for tin containers.

**g) Labels and labelling** including instant labels

## **5. TEST PROCEDURES**

- a) For packing materials - physical, physic - chemical properties, resistance to light, insect and mould.
- b) For Packaged goods – Unit package: compatibility studies, shelf life studies – with reference to flexible, rigid packs, different types of seals, closures etc. Bulk packages – Evaluation of transport worthiness of filled packages – physical and climatic hazards.

## **6. PACKAGING OF FOOD PRODUCTS**

- a) Agriculture produce.
- b) Processed and dehydrated food.
- c) Milk and milk products.
- d) Meat and poultry products.
- e) Marine products – Shrimps.
- f) Spices.

## **7. METHOD OF STORAGE**

- a) Cold storage, and deep freezing method of storage, their design and usage.
- b) Irradiation, preservation of perishables and semi – perishables.

## **8. PACKAGING OF OTHER SPECIFIC ITEMS**

- a) Pharmaceuticals.
- b) Tea.
- c) Cosmetics and Perfumery.
- d) Soaps, detergents and shampoos.
- e) Chemicals and fertilizers.
- f) Petroleum products.
- g) Pesticides.
- h) Light Engineering Goods and domestic appliances.
- i) Heavy machinery and equipments.
- j) Textiles and Garments.
- k) Handicrafts.

## **9. SPECIALITY PACKAGES**

- a) Aerosols, easy opening devices, carry home packs.
- b) Strip packaging, shrink packaging, blister packaging, skin packaging and stretch wrapping.
- c) Systems packaging – Lined cartons, Form Fill Seal (FFS), Stand – up pouches, etc.
- d) Controlled Atmosphere packaging (CAP) and Modified Atmosphere packaging (MAP).
- e) Aseptic packaging.

## **10. LOGISTICS AND PHYSICAL DISTRIBUTION**

- a) Physical distribution and material handling methods.
- b) Handling and transportation.
- c) Unit Load Systems:
  - (i) Pallestisation: Skids and pallets – Principles, construction and application.
  - (ii) Conveyor: Loading and unloading and other mechanical handling application.
  - (iii) Containerization : Intermodal containers.
- d) Air (IATA regulations), Sea (IMDG) and Road transportation and packaging.
- e) Bar-Code in Packaging
- f) RFID in Packaging.

## **11. STANDARD AND QUALITY CONTROL**

- a) Basic concepts.
- b) Standard for packaging material - rigid, non – rigid and ancillary material.
- c) Standard for export packages – labelling and marketing regulations.
- d) Packaging quality control criteria.
- e) Sampling, variables and attributes, AQL.
- f) Implication of ISO-9000.
- g) Eco Packaging and regulation.
- h) Recycling and Disposal of Packaging Waste.

## **12. PACKAGING PROCESS, MACHINERY & EQUIPMENTS**

- a) Packaging processes and machinery – types, characteristics and specialities; selection and specification.
- b) Equipments for canning, paper / board carton, flexible packaging, etc.

## **13. PACKAGING EMBELLISHMENT AND PRINTING**

- a) Graphic design – Preparation and reproduction of artwork.
- b) Printing Techniques – Letterpress. Flexography, Lithography, Gravure, Silkscreen.
- c) Printing inks and Print evaluation.
- d) Ink-Jet Printing in Bar Coding.

## **14. PACKAGING & MARKETING**

- a) Package Design, its impact on sales, role of packaging as silent-salesman- Communication and Sales appeal.
- b) Packaging and Export Marketing.

- c) Better Packaging as an instrument of marketing.
- d) Consumer protection through better packaging.

### 15. PACKAGING ECONOMICS

- a) Principles of packaging economics.
- b) Planning of packaging and packaging material requirement.
- c) Production planning and control in packaging process.
- d) Inventory control techniques.
- e) Packaging cost – controllable and uncontrollable costs; costing methods.
- f) Cost reduction in packaging – Value Engineering approach.
- g) Packaging and loss prevention.

### 16. PACKAGING LAWS & REGULATIONS

- a) Food Safety & Standards Act, 2006
- b) The Legal Metrology Act, 2009 (Packaged Commodities Rules, 2011)
- c) UN certification code for packaging of Dangerous goods.
- d) Packaging laws and regulations – legal requirements.

### 17. PACKAGING MANAGEMENT

- a) Role of packaging technologist in an organization – his functions and effectiveness.
- b) Judicious Management of Packaging material for its optimum utilization.
- c) Packaging industry – a forecast.
- d) System approach to packaging.

#### Section II: PRACTICALS

1. On the spot studies in industrial units involved in manufacture, use, handling, transportation and storage of packaging materials.
2. Identification of packaging materials.
3. Tests for physical and physico-chemical properties of packaging material.
4. Shelf life studies for packaged goods.
5. Evaluation of transport-worthiness of filled packages.
6. Case studies.

#### Section III: PROJECT

- Project – Package Development for a selected product – a team exercise.
- Dissertation – Design & Development of package for certain product – individual Exercise.
- Presentation - A topic shall be assigned to each participant for making presentation to the group.

### Registration

The registration to this course can be done by sending duly filled application form along with attested copies of last examination passed & work experience, if any, with requisite fees either by Demand Draft in favour of “**Indian Institute of Packaging**” payable at Mumbai or by NEFT transfer at the earliest to reserve the seat. The details for NEFT transfer are as follows:

**Account Name:** Indian Institute of Packaging;

**Bank Name:** State Bank of India, MIDC Branch, Andheri East Mumbai;

**Bank Account Number:** 10606567751;

**IFSC Code:** SBIN 0007074

### Glimpse of facilities at IIP, Mumbai







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## Proposed Branches

● Kakinada (AP)

● Bangalore

● Guwahati