SRI DEV SUMAN UTTARAKHAND UNIVERSITY

SYLLABUS

PG Diploma

in

Post-Graduate Diploma in Packaging Science &Printing Technology (PGD-PSPT)

Post-Graduate Diploma in Packaging Science & Technology (PGD-PSPT)

1**. GENERAL OBJECTIVES OF THE COURSE : TO ENABLE THE STUDENTS**:

a. To become competent and committed professional willing to perform and excel in packaging and printing technology

b. To use competencies and skills needed for becoming a successful packaging and printing technology professional.

c. The objective of this course is to provide students with supervised professional experience within a business setting under the direction of supervisor.

2. **NAME OF THE COURSE**

Post-Graduate Diploma in Packaging Science & Technology (PGD-PSPT)

3**. DURATION OF THE COURSE**

The duration of the course shall be 12 months. The commencement and conclusion of the course shall be fixed by the university as per the starting of new academic session.

4. **ELIGIBILITY**

Any candidate who has passed any graduation program or any other equivalent examination will be eligible for the admission to the **PGD-PSPT**

INTAKE - 60 STUDENTS

SELECTION PROCEDURE – INTERVIEW AND GROUP DISCUSSION

5. **MEDIUM OF INSTRUCTION AND EXAMINATION**

Medium of instruction for **PGD-PSPT**will be in English and question paper shall be set in English.

SCHEME OF EXAMINATION/ PATTERN OF EXAMINATION

Examination Fees:

As per University norms

Eligibility for appearing at Post-Graduate Diploma in Packaging Science & Technology (PGD-PST)

Examination:

Student teacher should keep the terms with at least 75% attendence.He should complete all the practical and other work allotted in all parts of the syllabus**.**

Centre of Examination :

The Theory and practical examination will be conducted in the College campus.

Theory

The theory examination will be held at the end of the term. This examination will be of three hours duration and carry 100 marks. Objective and descriptive types of question.

Practical:

The practical examination will be held before the theory examination.

Evaluation:

1)Theory	Marks	Minimum Std of passing
	100(each paper)	50(each paper)
Total	500	250
2)Practical		
Project/dessertation	150	75
Viva voice	50	25
Total	200	100
GRAND TOTAL	700	350

Standard of a passing:

1. A student must obtain minimum 50% of marks in theory paper.
2. A student must obtain 50% of marks in practical examination separately in internal assessment.

A student must obtain 50% aggregate marks together in theory & Practical assessment to pass the Project

Award of Class:

Theory:

Class will be awarded to the students at the end of the course on the basis of aggregate marks obtained by him /her in theory part as shown in the table given below.

Sr. No.	Class	Theory
1)	First class with distinction	70% & above
2)	First class	60% & above but less than 70%
3)	Higher second class	55% & above but less than 60%
4)	Second class	50% & above but less than 55%

Practical:

There shall be a grade on the report card for the practical assessment conducted. The grades will be given as below

Mark obtained (%)	**Grade**
90 & above	O
70-89	A
60-69	B
50-59	C
Less than 50	FAIL

Backlog of Course

Students will have to acquire at least 50% marks. If he/she fails to do so, Re-examination for theory/ project work will be arranged for them during the next course. Student shall appear only in the failed subject.

Marks Weightage:

Theory Paper :Post-Graduate Diploma in Packaging Science & Technology (PGD-PSPT)

Sr. No.	PAPER	SUBJECT	Internal	External	Marks
1	**PGD-PSPT** 101	INTRODUCTION TO PACKAGING & PACKAGING MATERIAL	20	80	100
2	**PGD-PSPT** 102	QUALITY ASSURANCE, STANDARDISATION& PACKAGING LAWS	20	80	100
3	**PGD-PSPT** 103	PACKAGE PRINTING & GRAPHICS	20	80	100
4	**PGD-PSPT** 104	PACKAGING & MARKETING	20	80	100
5	**PGD-PSPT 105**	PACKAGING MACHINERY& TECHNOLOGY	20	80	100
		TOTAL	100	400	500

Practical

Sr. No.	Project/Dessertation work	Marks
1	On Packaging & Printing protocols	150
2	Viva voice	50
	TOTAL	200

LECTURES AND WORKLOAD

Lectures:

Theory &Practical: 45 mins, four lectures a day – Monday to Friday

THEORY

Participants will have the opportunity to:

- Get introduced to various types of packaging and printing training protocols and undergo many types of functional activities.
- Know more aboutfundamental and regulatory requirements of packaging and printing industry
- Get knowledge of various marketing concept related to product packaging. .
- Develop and use interpersonal communication and apply this to leadership situations.

Syllabus

Paper I

PGD-PSPT 101

(Introduction to packaging & packaging material)

Concepts in Packaging

Introduction, Role of Packaging, StatusReview of Packaging Industry,etc.

PackagingDevelopment(Factors&Criteria)

Product & Packaging, Material Characteristics, Packaging Evaluation.

Packaging Media (Science, Technology, Manufacture, Conversion, Properties &Applications)

Paper & Board, Fibre Board Boxes, Composite Containers, Drums, Cellulosics, Glass, Metal Containers and Components, Polymers and Plastics, Flexible Packaging Materials,Wooden Containers, Crates, IBCs, Flexible &Rigid,Textiles andJute.

Ancillary Packaging Materials

Principles and Theory of Adhesion, Adhesive – Materials, Types/Varieties and Properties and Applications, Cushioning Theory, Materials, Types/VarietesandPropertiesandApplications, Cushion Systems and Design, Corrosion Preventives, Reinforcements, Printing Inks, Coatings and Lacquers, Colorants for Plastics, Labels, Caps, Closures, Wads, Master Batches, etc.

Paper II

PGD-PSPT 102

(Quality Assurance, Standardisation& Packaging laws)

Quality Assessment &Performance Evaluation

Testing,SignificanceofTesting,QualityControl andQualityAssurance,SQCTechniques,Shelf-lifeEvaluation,ProductPackageCompatibility, Migration, Transport-worthiness Testing, TestingofAncillaryMaterials,MachineMaterial Interaction, IMDG, UN / IATA Testing,etc.

Standardisation, Variety Reduction & Cost Optimisation

Standards – Objectives & Benefits, Standardisation, Variety Reduction, Packaging Costs & Economics, Value Analysis, ISO 9001: 2000, ISO 14000-2000, etc.

Packaging Laws & Regulations

Legal Metrology, Weights and Measures Laws andRules,JuteControlOrder,LossPrevention, PFA, FDA, Pollution Control, HACCP, Safety & HSE,etc.

Paper III

PGD-PSPT 103

(Package Printing &Graphics)

Package Printing

Pre-Press,PrintingProcesses,Letterpress,Offset, Lithography,Flexography,Gravure,Screen,Pad, Foil Stamping, Digital Printing (Inkjet, Thermal), Computer-to-Plate. ColourManagement, Colour Measurement,etc.

Package Graphics

Package Design, Role of Graphics, Package Aesthetics, Decoration Aspects, Layout and Feature Selection, etc.

Product Packaging

AgriculturalProducts,ProcessedFoods,Marine Products, Pharmaceuticals, Cosmetics, Toiletries, Soaps &Detergents, Chemicals, Pesticides, Textiles, Handicrafts, Technology& Systems, CAP/ MAP, Vacuum Packaging, Gas Packaging, IQF, Cool and Cold Storage, Freeze Drying.

Paper IV

PGD-PSPT 104

(Packaging & marketing)

Packaging Distribution & Marketing

Distribution, Branding, Retailing, Break Bulks and Unit Load Devices, Palletisation, Containerisation Packaging – a tool for distribution, etc.

Package Coding & Marking

Marking & Coding, Bar Coding, Ship Marking, IMDG / IATA Coding, etc.

Package Storage and Handling

Storage Types, Damage Control, Warehousing and Handling Equipments& Techniques, etc.

Packaging & Environment

EcoIssues,WastageControl,WastageDisposal, Eco Friendly Packaging,etc.

Management Concepts in Packaging

PackaginginOrganisationStructure,Packaging
– Relevance to Supply Chain Management, Marketing, Export Marketing, e-Commerce, Industrial Policy and Packaging, etc.

Paper V

PGD-PSPT 105

Packaging Machinery& *Technology*

Packaging Machinery

Principles and Theory of Packaging Machines, TypesofFillingMachines,WrappingMachines, VFFS, HFFS, Thermoform-fill-seal, Bottling Machines, Induction Sealing, Ink Jet Printing, Coding, Capping, Marking, Labelling, on line– end of line systems, shrink and stretch wrapping, cartoning and case packing,etc.

CAD in Packaging

CAD for Packaging, Structural Design, Role of Structure, Diemaking, Drawing, Moulds. Prototypes, Samples, etc.

Engineering & Workshop Technology

Engineering Drawing, Wood Working, Metal Working, Mechanics, etc.

Specialized InstitutionalTraining

SpecialisedTraining **of PrintingTechnology.**

Specialised Training in Packaging Pre- production Technology, Pre-press, Colour Management, Colour Measurement and Structural Design through **Esko-Graphics.**

Industrial and Institutional Visits

VisitstoIndustries,InstitutionsandExhibitions for a first-handknowledge.

Industrial Training
3-4 months Industrial Training.

GroupProjects

Project – I: **Innovation & CreativePackaging**

Project – II: **Packaging Design/Development and Related Subjects**