

DEPARTMENT OF PRINTING AND PACKAGING TECHNOLOGY

TE : V SEM (CBGS)

Subject: Plastic Processing and Conversion Technologies (PPC501)

- CO1. Describe the fundamental concepts in plastic processing and conversion technology.
- CO2. Analyse the various plastic materials and its application
- CO3. Understand and use suitable conversion technique as per the end product
- CO4. Produce plastic products by using various conversion techniques
- CO5. Perform different testing methods for plastic product
- CO6. Study different processing parameters required in industry

Subject: Gravure Printing(PPC502)

- CO1. Describe the various components of gravure printing machine and its functions.
- CO2. Explain various design aspects gravure cylinder and the process of engraving it.
- CO3. Summarise the various operations performed while printing on Gravure machine
- CO4. Discuss various inks and substrates used for gravure process with quality control measures.
- CO5. Describe various web handling and registration control for gravure printing
- CO6. Discuss various inks and substrates used for gravure process.

Subject: Ancillary Packaging Materials (PPC503)

- CO1. Perform the main testing procedures and understand the requirements for testing ancillary packaging materials.
- CO2. Choose and design packaging solutions with respect to the right ancillary material for the target product/package.
- CO3. Elaborate the properties and functions of various ancillary materials.
- CO4. Choose the right label for a specific packaging application.
- CO5. Analyze the types of straps & tapes and describe their application in different packages.
- CO6. Describe the significance of codings and coatings in packaging.

Subject: Theory of Machines and Designs(PPC504)

- CO1. Analyse the stresses and strains in mechanical components, and understand, identify and quantify failure modes for mechanical parts
- CO2. Describe the basic machine elements used in machine design.
- CO3. Design machine elements to withstand the loads and deformations for a given application, while considering additional specifications.
- CO4. Develop the approach to design the component under realistic conditions.
- CO5. Design Machine element against static loading
- CO6. Develop the ability to design the component under realistic conditions.

Subject: Instrumentation and Process Control (PPC505)

CO1. Knowledge of measuring devices and signal conditioning will help students to select the correct transducer as per the requirement.

CO2. Students will be able to confidently design a PID controller using opamps or through MATLAB program.

CO3. The understanding of applications of PLC's in latest printing machines and also packaging machines will be developed.

CO4. Understanding applications of PLC's in industries and printing and packaging machines

CO5. To explain PLC and SCADA systems and their use in process control

CO6. To Understand and formulate various applications like DAS and data logger

Subject: Communication and Corporate Skills (PPS501)

CO1. Write a technical report in specific format.

CO2. Write a technical proposal in specific format.

CO3. Use interpersonal skills effectively and enhance communication.

CO4. Prepare the Notice, Agenda and Minutes of a formal meeting.

CO5. Understand the importance of ethics and apply it for their career advancement.

CO6. Understand employment skills and prepare a resume along with the skills required to face an interview

TE : VI SEM (CBGS)

Subject: Packaging Machineries and Systems (PPC601)

- CO1.Suggest the packaging material use and its conversion as per the product geometry.
- CO2.Suggest the filling machine required for the line operations.
- CO3.Choose the ancillary machineries required in the line operations based on the product to be packed
- CO4.Analyse the different conveying system used for various line operations
- CO5.Select different online and offline testing methods that are required during the converting operations or on the packaging lines.
- CO6.Suggest Methods and Machine used for case packing.

Subject: Food and Pharmaceutical Packaging (PPC602)

- CO1.Analyse and choose a barrier material for a specific food product based on barrier properties studied
- CO2.Analyse and choose a preservation method for a specific food product based product sensitivity and shelf life required.
- CO3.Describe the various characteristics of pharmaceutical drugs and their sensitivities
- CO4.Select the right type of package form for a pharma product, based on the product nature, form & size.
- CO5.Determine the shelf life of given food and develop the technique to improve the same.
- CO6.Develop a pharmaceutical package to increase the stability of the medicine during its storage.

Subject: Industrial Products Packaging (PPC603)

- CO1.Effectively choose packaging materials based on characteristics of industrial products.
- CO2.Describe the various properties & defects of wood packaging material
- CO3.Analyze the various hazards & environmental issues related to Packaging and select a specific protection method for the product.
- CO4.Choose various bulk carriers for industrial packaging based on the type of product.
- CO5.Analyse various types of internal fitments for product protection and retainment.
- CO6.Explain the characteristics and applications of various wooden package forms.

Subject: Flexographic Printing (PPC604)

- CO1.Learners develop ability to operate flexography machine.
- CO2.Learners acquire skills to handle trouble shoot on flexography presses.
- CO3. Learners will be able to identify press type & configuration.
- CO4.Learners will be able to discuss the merits & demerits of press types & structural variants.
- CO5.Learner will be able to Analyse the ink & Subtrate for any print job.
- CO6.Learners will describe the Quality control, Environmental & safety tools & regulations available.

Subject: Packaging Distribution Dynamics (Elective I) (PPE601)

CO1. Analyse the hazards encountered in distribution and determine protection requirement

CO2. On the basis of principles of distribution dynamics estimate the vibration, shock encountered by a product in distribution

CO3. Calculate cushioning requirement for a product in distribution.

CO4. Perform tests to gauge package performance in distribution.

CO5. Analyse ways to reduce the effect of vibration, shock and handling of product during distribution.

CO6. Explain the method for developing the cushion curve and damage boundary curve.

Subject: Inks and Coatings (Elective I) (PPE602)

CO1. Explain the formulation for different types of inks

CO2. Explain the ink components for different printing processes and materials

CO3. Test and analyze the properties of inks and coatings.

CO4. Suggest ink for a given process

CO5. Troubleshoot problems related to ink synthesis

CO6. Suggest suitable varnish for a given application.

Subject: Security Printing (Elective I) (PPE603)

CO1. Analyse & describe the Digital image anatomy for Pre-press environment.

CO2. Analyse & describe the concepts in digital printing with its Merits & De-merits.

CO3. Summarise the process involved in Digital work-flow & data handling.

CO4. Elaborate the importance of security printing with respect to use in everyday life.

CO5. Describe first line inspection of different documents & Creation of various security devices.

CO6. Discuss the significance of Brand protections and tools available.

Subject: Print Finishing and Converting (Elective I) (PPE604)

CO1. Analyze the print finished product.

CO2. Examine the Product for the entire process involved in manufacturing and finishing.

CO3. Discuss the print finishing requirements for variety of different segment jobs.

CO4. Analyze the layout and imposition of the job

CO5. Identify and rectify post finishing process problems

CO6. Discuss the various post finishing terminology

Subject: Package Design and Graphics (PPL601)

- CO1. Define basic design terminology,
- CO2. Identify and apply the available design tools using various CAD softwares
- CO3. Identify and apply the available design tools using various CAD softwares
- CO4. Create Graphics Design for folding cartons/Plastic containers
- CO5. Analyze various package design
- CO6. Design an artwork/graphics for a label

Subject: Industrial Visit (PPS601)

- CO1. Analyze the print, packaged, converted & finished product
- CO2. Examine the Product for the entire process involved in manufacturing, converting and finishing.
- CO3. Understand operational workflows for various Industries.
- CO4. Analyse Plant Layout, Inventory & Logistics provisions.
- CO5. Understand the Organisational structure and Manpower requirements.
- CO6. Discuss the Safety-Health-Environmental practices, Laws, Regulations & Certifications found in the Industry.