DEPARTMENT OF PRINTING AND PACKAGING TECHNOLOGY

SE : III SEM (CBCS)

Subject: Applied Mathematics -III (PPC301)

CO1.Obtain and invert Laplace Transform using standard results and shifting theorem.

CO2.Determine eigen values &eigen vectors of a matrix and power or exponential of a matrix using them.

CO3.Formulate and analyze mathematical problems followed by drawing clear and reasonable conclusions.

CO4.Infer about a particular sample with high degree of reliability.

CO5.Formulate and analyze statistical problems followed by drawing clear and reasonable conclusions.

CO6.Apply fourier transform in engineering learning

Subject: Packaging Introduction & Concepts (PPC302)

CO1. Effectively observe and compare the different package forms

CO2.Describe the importance of compatibility studies and their associated parameters

CO3.Analyze the various hazards & environmental issues related to Packaging

CO4.Analyze the aesthetics of a package and the differentiating factors

CO5.Elaborate the importance of quality in packaging

CO6.Explain significance of packaging in terms of today's market

Subject: Introduction to Printing Technology (PPC303)

CO1.Distinguish various printing principles like planography, intaglio & relief.

CO2.Compare the process of image generation on the basis of typography, reprography & layout making.

CO3.Analyze the various Press configurations of Offset, Gravure, Flexography&Letterpress.

CO4.Classify Inks and Substrates used in various Printing technologies.

CO5.Recognize various materials used in printing operations and distinguish Print finishing operations

CO6.Choose an appropriate Printing process for any given Printing job.

Subject: Paper Based Packaging Materials(PPC304)

CO1. Explain the raw materials involved in pulping and paper making process

CO2. Explain the operations involved in pulping and paper making process

CO3. Identify the manufacturing process for different types of paper based Packages.

CO4. Design and estimate material requirements for major forms of paper based packaging.

CO5. Test and analyze the major properties of paper based packaging materials.

CO6. Describe the manufacturing process for different types of paper based Packages.

Subject: Glass, Metal and Textile Based Packaging Materials (PPC305)

CO1.Describe & interpret the various manufacturing process for glass bottles, metal cans & tubes and textile based bags .

CO2.Explain various design aspects for various types of package forms made up of glass.

CO3.Explain various design aspects for various types of package forms made up of metal.

CO4.Summarize the aerosol technology and its wide application in packaging.

CO5.Discuss various quality control and testing procedures for these package forms.

CO6.Describe the basics of fabric & textile technology to produce bags of various materials like jute, hemp etc.

Subject: Applied Mathematics III Tutorial (PPT301)

CO1.Obtain and invert Laplace Transform using standard results and shifting theorem.

CO2.Determine eigen values &eigen vectors of a matrix and power or exponential of a matrix using them.

CO3.Formulate and analyze mathematical problems followed by drawing clear and reasonable conclusions.

CO4.Infer about a particular sample with high degree of reliability.

CO5.Formulate and analyze statistical problems followed by drawing clear and reasonable conclusions.

CO6.Apply fourier transform in engineering learning

Subject: Principles of Graphic Arts and Design (PPL301)

CO1.Create a design based on specific requirement.

CO2.Analyze the usage of particular colour & text in Package design.

CO3.Generate various design layouts with proper visual impacts.

CO4.Create a design for folding carton with appropriate software.

CO5.Edit an image and use it in a Package design.

CO6.Generate Logos for a given concept or product.

Subject: Screen Printing Laboratory (PPL302)

CO1.Prepare screen printing image carrier by direct, indirect photographic methods.

CO2.Demonstrate the use of different photographic films for mesh preparation according to image.

CO3.Produce different printed samples for various substrates like fabric, glass, acrylic, wood by selecting suitable inks & coatings for that material.

CO4.Produce & analyze a halftone dot image generated for four color printing and registration of color.

CO5.Analyze the common faults in Screen Printing Process

CO6.Printing of two color job in textile and paper materials

Subject: Paper Based Material Testing (PPL303)

CO1.Check grammage and thickness of paper & paperboard.

CO2.Find out burst factor of paper.

CO3.Perform stiffness test.

CO4.Perform Puncture resistance of CFB.

CO5.Identify flute types in CFB

CO6.Make paper carry bags as per the standard.

Subject: Glass, Metal and Textile Based Packaging Materials Tutorials (PPL304)

CO1.Use various testing standards

CO2.Calculate capacity & dimensions for containers

CO3.Analyze Thermal shock & chemical resistance for glass bottles

CO4.Perform & Analyze coating related tests for metals used for cans

CO5.Analyze corrosion tests for metals

CO6.Conduct tests for textile based materials

SE : IV SEM (CBCS)

Subject: Plastics in Packaging (PPC401)

CO1. Describe the various polymerization mechanisms and techniques.

CO2. Differentiate between thermoplastics & thermosets.

CO3. Effectively communicate the relation between effects of temperature and crystallinity of polymers.

CO4. Identify and categorize various plastics by chemical and instrumentation methods.

CO5. Choose a plastic material for a specific application based on their physical and chemical properties.

CO6. Describe the properties that are important from the point of view of plastic processing.

Subject: Ancillary Packaging Materials (PPC402)

CO1. Analyze various cushioning materials and describe their properties.

CO2. Analyze the types of adhesives and apply the concept of adhesion in the packaging.

CO3. Elaborate the functions of various closures and choose a closure for a specific application.

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: Colour Reproduction (PPC403)

CO1. Summarize the Colour Vision theory and its concept.

CO2. Discuss & summarize the conventional and digital method of colour separation.

CO3. Examine images and modify them with colour correction.

CO4. Measure the densitometric terms and analyze graphically.

CO5. Summarize the spectrophotometric terms and perform relative measurements of various printed samples.

CO6. Recognize the input & output devices being used.

Subject: Offset Printing (PPC404)

CO1. Describe the various terminologies in offset printing process.

CO2. Operate offset machines and evaluate single colour sheet feed press.

CO3. Identify and rectify suitable solutions for errors associated with platemaking and pressroom.

CO4. Analyze troubles related with quality and can produce possible remedies to minimize print problems.

CO5. Identify the conversion technology of offset printed jobs

CO6. Plan & Layout the imposition of commercial jobs.

Subject: Digital Electronics & Microcontrollers (PPC405)

CO1. Describe any logical expression using basic gates.

CO2. To examine the structure of various number systems and its application in digital design

CO3. Discuss the combinational & sequential circuits like encoder, decode, flip-flop, registers & counters.

CO4. Identify features of various Microcontroller.

CO5. Write and execute assembly language programs.

CO6. Summarize the need and functioning

Subject: Principles of Graphic Arts and Design-II (PPL401)

CO1. Create a Package design based on specific requirement.

CO2. Create Ups using the editing software for given substrate dimension.

CO3. Generate various design layouts with proper visual impacts.

CO4. Create a design for folding carton with appropriate software.

CO5. Edit an image and use it in a Package design

CO6. Design a Website and Upload in Internet.

Subject: Plastic Material Testing (PPL402)

CO1. Identify plastic material by chemical and instrumentation method.

CO2. Perform simple tensile test on UTM.

CO3. Determine ESCR of a plastic sample.

CO4. Perform impact test using dart impact method.

CO5. Determine cooefficient of friction of plastic films.

CO6. Analyzethermogram from a DSC.

Subject: Colour Reproduction Laboratory (PPL403)

CO1. Match any two given colours under prescribed light source

CO2. Measure density and compare with the standards.

CO3. Analyse the colour difference between any two given printed samples

CO4.Measure various vitals of Print quality such as Dot gain, Print contrast, Hue error &Grayness and Trapping

CO5. Comment on Print quality based on measured values

CO6. Suggest Corrections required to achieve better print quality

Subject: Offset Printing* (PPL404)

CO1. Analyse the problem of printed sample & troubleshoot it

CO2. Perform printing on single color offset printing machine

CO3. Evaluate the number of sheets required for printing a particular job.

CO4. Evaluate the inking & dampening system condition through testing.

CO5. Plan & provide a dummy pack for a particular product.

CO6. Evaluate the conversion technologies used for a commercial pack.

Subject: Digital Electronics & Microcontrollers Laboratory (PPL405)

CO1. To demonstrate the knowledge of operation of logic gates.

CO2. To apply Boolean theorems, DeMorgan's theorems and Karnaugh maps reduction methodto simplify logic problems.

CO3. Create the appropriate truth table from a description of a combinational logic functions.

CO4. Demonstrate the knowledge of operation of basic types of flip-flops.

CO5. To analyze and design digital combinational circuits includingarithmetic circuits (half adder, full adder, half subtractor and full subtractor).

CO6. Develop skill in simple program writing for 8051.

Subject: Ancillary Packaging Material Testing (PPL406)

CO1. Determine peel / bond strength of an adhesive.

CO2. Perform shear resistance test on tape/label.

CO3. Determine the grammage of all components in a label.

CO4. Determine tack of a self-adhesive tape or a label by Rolling Ball Tack Tester.

CO5. Determine opening and closing torque for closures.

CO6. Effectively perform strapping and taping of a CFB Box.