Faculty of Engineering, D.E.I. Dayalbagh, Agra Course Number: FEM501 Lasting and Making Technology

Class: B.Tech.(Footwear Technology), Status of the Course: MAJOR, Approved Session: 2014-15

Credits: 3, Periods (55 mts. each) per week: 3 (L:3+T:0+P:0), Min. Periods/Sem.: 39

This course aims to describe and develop awareness on the essentials for lasting an upper well down to last and making a permanent bond using different methods. To provides a practical understanding on the requirements for ancillary material such as threads and needles (and/ or bristles) and thread to material relationship.

UNIT - 1 INTRODUCTION

Introduction, Various types of machines and tools related to Bottom section.

UNIT - 2

Introduction and preparation of bottom components such as toe-puff, Stiffener insole, shank, welt, re-enforcements, outsole and their proper placements.

UNIT - 3

Introduction and importance of lasting, importance of hoisting and drafting, heat setting, importance and placement of different types of shank laying and importance of bottom filling.

UNIT - 4

Roughing and buffing of lasted upper and outsole, method of sole attachment, application of adhesive on upper and sole. Proper sole attachment by hand and machine, single sole attachment, nailing and riveting attachments.

UNIT - 5

Introduction and preparation of single construction in slippers, ladies belly, casual shoe, derby shoe, moccasin, veldtschoen construction, slip lasting, turn shoe etc.

- 1. Harvey, A.J., "Footwear Materials and Process Technology", LASRA Publications, New Zealand, 1982.
- 2. S.N. Gongly, 'Comprehensive footwear technology"

Faculty of Engineering, D.E.I. Dayalbagh, Agra Course Number: FEM503 Footwear Construction

Class: B.Tech.(Footwear Technology), Status of the Course: MAJOR, Approved Session:

2014-15

Credits: 3, Periods (55 mts. each) per week: 3 (L:3+T:0+P:0), Min. Periods/Sem.: 39

This course aims to describe and develop awareness on the essentials for lasting an upper well down to last and making a permanent bond using different methods. To provides a practical understanding on the requirements for ancillary material such as threads and needles (and/ or bristles) and thread to material relationship.

UNIT - 1 Direct Attachment construction

Introduction and preparation of different methods used for direct attachment like machine sewing, little way construction, cemented construction, riveted construction and stroble construction etc.

UNIT - 2 Indirect Attachment constructions

Introduction and preparation of different methods used for indirect attachment like good year welted construction, silhouette construction, staple welted construction and welted construction.

UNIT - 3 Moulded and Vulcanized constructions

Introduction and preparation of moulded constructions, DVP (Direct Vulcanization process), Injection moulding, PVC and PU. Introduction and preparation of California slip lasted.

UNIT - 4 Safety Precautions

Introduction to Safety Precautions, Their Safety Codes and norms for tools, equipments and machines and conveyer system used in footwear industry.

UNIT – 5 Finishing and final inspection

Object of finishing, Process involved in finishing of complete footwear, inspection of complete shoe, description of packing material and packing techniques.

- Harvey, A.J., "Footwear Materials and Process Technology", LASRA Publications, New Zealand, 1982.
- 2. S.N. Gongly, 'Comprehensive footwear technology"

Course Number: FEM505 Computer Aided Footwear Designing

Class: B.Tech.(Footwear Technology), Status of the Course: MAJOR, Approved Session: 2014-15 Credits: 3, Periods (55 mts. each) per week: 3 (L:3+T:0+P:0), Min. Periods/Sem.: 39

This course aims to describe and develop awareness about computer aided design(CAD) in footwear industry. The course is also supported by the lab for hands on experience.

UNIT - 1 Introduction

Definition and advantages of CAD/CAM, study of different CAD/CAM systems available, ADC and DAC, 2D and 3D coordinate system, digitization, different types of graphic file formats, colour and fill patterns.

UNIT – 2 Hardware and peripherals

Computer system, digitizer, scanner, plotter, laser cutter, printers, LAN, WAN, CNC and its implementation in last modeling.

UNIT - 3 CAD Software

Different Operating systems, structured and non-structured programs, system software and utilities, Application software, compliers, FEM in footwear.

UNIT - 4 Pattern generation, grading, costing

Mean forme digitization for 3D, Shell modification, pattern extraction, pattern marking and allowances, pattern matching, grading the shell, pattern plot out /cutout, pattern testing, wastage calculations first, second and third wastage.

UNIT - 5 Image processing

Transfer of 2D Design to 3D

Transfer of 3D Design to 2D.

Principles and strategies for collection of data or imaging data reduction and processing techniques with special reference to footwear designs.

- 1. Aki Choklat, "Footwear Design",
- 2.

Faculty of Engineering, D.E.I. Dayalbagh, Agra Course Number: FEM601 Footwear Pattern Design And Grading System

Class: B.Tech.(Footwear Technology), Status of the Course: MAJOR, Approved Session: 2014-15 Credits: 3, Periods (55 mts. each) per week: 3 (L:3+T:0+P:0), Min. Periods/Sem.: 39

This course aims to provide knowledge and skills to students that is required to apply the principle Footwear Pattern Design, Grading System and its place in the manufacturing process. It is also provide the knowledge in the production of pullover and shoe models.

UNIT - 1 INTRODUCTION

Selection of footwear by consumer's Age, Sex, Comfort, aesthetics, profession etc. Influence of climatic conditions. Different size system, difference between human foot and shoe making last, variation between Right and Left foot sizes,

UNIT - 2 Selection of last

Selection of last depending on smartness, comfort and elegance. Location of points on last (Center Line, joints and vamp point), Making on last (Center line, front, back, tread line), chappal and sandal Pattern, Preparation of insole and sole pattern of shoe.

UNIT - 3

Preparation of section pattern for upper and lining for various designs, Oxford, Derby, Monk, Casuals with and without elastic, Grescion, Ankel Boot, Long Boot, Court Shoe. Pattern Making: tools and machinery, materials on which pattern are cut, Difference between plastic and wooden last, storage of pattern.

UNIT - 4

Alteration of last according to foot measurements, With special emphasis on foot deformation and orthopedics problems.

Preparation of patterns of bottom components, computer aided footwear designing pattern making & pattern cutting, Graphic system to find correct area of patterns.

UNIT - 5 Grading

Principles of Grading, Grading Methods such as by hand, pantograph, geometrical, comparative and radial tools system, Grading with the help of computer, Pattern nesting and grading.

- Harvey, A.J., "Footwear Materials and Process Technology", LASRA Publications, New Zealand, 1982.
 S.N. Gongly, 'Comprehensive footwear technology"

Faculty of Engineering, D.E.I. Dayalbagh, Agra Course Number: FEM605 Leather Goods and Garments Manufacturing

Class: B.Tech.(Footwear Technology), Status of the Course: MAJOR, Approved Session: 2014-15 Credits: 3, Periods (55 mts. each) per week: 3 (L:3+T:0+P:0), Min. Periods/Sem.: 39

This course aims to describe and develop awareness on the essentials for Leather Goods and Garments Manufacturing.

UNIT - 1 INTRODUCTION

Classification of leather garments based on design, usage, fashion; principles of tailoring, Types of leather used in garments, Properties of garment leather.

UNIT - 2

Designing of leather garments and preparation of sectional patterns, Minimization of Leather wastage, Designing and Fabrication of gloves, headwear, sports goods such as football, hokey and cricket ball.

UNIT – 3 Machinery and equipments

Machinery and equipments for leather goods and garments such as sewing machine, button hole and button stitching machines, ironing press.

Tools: gimping, scissors, wooden and iron hammers, stone slab, measuring tapes, cryons etc. Dummies for checking fittings.

UNIT - 4

Principles of cutting components, colour matching, texture, feel, type of stitching and attachments used, Sequence of operations for assembly of components for garments.

UNIT – 5 Ironing and Finishing

In process inspection and final Inspection, Quality control, Finishing and packing.

- 1. Harvey, A.J., "Footwear Materials and Process Technology", LASRA Publications, New Zealand, 1982.
- 2. S.N. Gongly, 'Comprehensive footwear technology"

Faculty of Engineering, D.E.I. Dayalbagh, Agra Course Number: FEM 605 Finishing and Packaging Technology

Class: B.Tech.(Footwear Technology), Status of the Course: MAJOR, Approved Session: 2014-15 Credits: 3, Periods (55 mts. each) per week: 3 (L:3+T:0+P:0), Min. Periods/Sem.: 39

All the products manufactured or processed are packed in some way or other. With trade barriers vanishing, export has increased which further demand more and more packaging. Packaging is a very competitive field. It embraces various disciplines of science and technology. With the increasing importance of packaging and its growth, it is necessary for footwear students to learning about finishing and packaging.

UNIT - 1 Finishing

Object of Finishing – Types of finishing, Different finishing procedure for different types of footwear. Materials used in finishing, Inspection of complete shoe.

UNIT - 2 Packaging

Definition, Importance and process of packaging. Types of Packaging, Description of packaging material and packaging techniques, Package components. Export Packaging, Transit Hazards – Road, Rail, & Air- Test Procedures for Evaluation of Transport – worthiness.

UNIT - 3 Tests

Tests, Testing equipment and requirements of packaging materials, Environmental issues. Mechanisms of Spoilage, Cushion Design and Prevention of shock Damage. Corrosion prevention in packaging.

UNIT – 4 Packaging machines, Printing and Labeling

Different packaging machines, Printing and Printing Machines, Labels and Bar Coding.

UNIT – 5 Branding and Launching

Definition, Importance and process of Branding. Product Development, Launching of new Product.

SUGGESTED READINGS:

Better Packaging, Better World, Instituto de Embalagens - Brazil.
Walter Soroka, Fundamentals of Packaging Technology-Fourth Edition
21 January 2010.
Hand Book of Packaging Technology, ISBN – 8186732670

S Natarajan , M Govindarajan , B Kumar, Fundamentals of Packaging Technology, Jain Book Depot.

Non-Faculty Half Course

Course Number: OMH101, Course Title: COMMUNICATION TECHNIQUES HINDI I Class: B.Com, Status of Course: MAJOR COURSE, Approved since session: 2009-10 Total Credits: 3, Periods(50 mts. each)/week: 4(L-4+T-0+P/S-0), Min.pds./sem: 52

UNIT 1: शब्द रचना – व्याकरण

हिन्दी वर्णमाला, (ख) शब्द भेदः विकारी शब्द (विशेषण, किया,संज्ञा तथा सर्वनाम), (ग) अविकारी शब्द (किया विशेषण, संबंध बोधक, समुच्चय बोधक, विस्मय बोधक)

UNIT 2: शब्द रचना – व्याकरण

 (क) शब्द रचनाः संज्ञा से विशेषण तथा किया बनाना / किया से विशेषण तथा संज्ञा बनाना, (ख) उपसर्ग और प्रत्यय, (ग) समुच्चारित शब्द

UNIT 3: विराम चिन्ह

(क) विराम चिह्न, विराम चिह्नों की उपयोगिता तथा उसके भेद, (ख) विराम चिह्नों के अन्य भेद – I (निर्देशक चिह्न, अपूर्ण विराम, विवरण चिह्न, योजक, संक्षेप चिह्न) (ग) विराम चिह्नों के अन्य भेद – II (उदाहरण चिह्न, कोष्ठक, हंसपद, लोप या निर्देश चिह्न, समानतासूचक)

UNIT 4: अशुद्धियाँ एवं उनका संशोधन

(क) शब्दों सेंबंधी सामान्य अशुद्धियाँ तथा उनका संशोधन,
 (ख) वाक्य संबंधी अशुद्धियाँ एवं उनका संशोधन,
 (ग) वाक्य संबंधी अन्य अशुद्धियाँ एवं उनका संशोधन

UNIT 5: अनुवाद एवं निबन्ध

(क) अनुवाद, अनुवादक के गुण, अनुवाद प्रकिया, (ख) अंग्रेजी से हिन्दी अनुवाद, अंग्रेजी से हिन्दी अनुवाद की भूलें तथा उनका निराकरण, (ग) निबन्ध

Course Number: OMH201, Course Title: COMMUNICATION TECHNIQUES HINDI II Class: B.Com, Status of Course: MAJOR COURSE, Approved since session: 2009-10 Total Credits: 3, Periods(50 mts. each)/week: 4(L-4+T-0+P/S-0), Min.pds./sem: 52

UNIT 1: संक्षिप्त लेखन

(क) संक्षिप्त लेखन, (ख) संक्षिप्त लेखन के लिए आवश्यक निर्देश, (ग) संक्षिप्त लेखन के भेद UNIT 2: पत्र लेखन

(क) पत्र लेखन – प्रारम्भिक आलेखन, (ख) व्यापारिक पत्र – व्यावहारिक पत्र, (ग) आवेदन पत्र UNIT 3: पत्र लेखन

(क) अशासकीय पत्र, शासकीय पत्र, अर्द्धशासकीय पत्र, (ख) ज्ञापन, कार्यालय ज्ञापन, परिपत्र, मंजूरी पत्र, (ग) पत्र व्यवहार के कुछ अन्य रूप

UNIT 4 : टिप्पणी

(क) टिप्पणी कार्य एंव आलेखन, (ख) टिप्पणी के प्रकार, (ग) प्रारुप की आदर्श रुप रेखा

UNIT 5 : वाक्यांश एवं शब्दावली का हिन्दी रूपान्तर

(क) केन्द्रीय एवं प्रावेशिक सरकारों तथा विभिन्न कार्यालयों से सम्बन्धित पद संज्ञाओं तथा विभिन्न कार्यालयों के नामों का हिन्दी रूपान्तर, (ख) सामान्य प्रशासनिक शब्दावली का हिन्दी रूपान्तर, (ग) परिभाषिक अंग्रेजी वाक्यांशों का हिन्दी रूपान्तर

Syllabus - N.F.H.C.

Faculty of Engineering

MUH 181 – Sangeet Kriyatmak-1

I Semester

UNIT 1: Sargam evam Alankar

UNIT 2: Bhajan

UNIT 3: Patriotic Song

UNIT 4: Raag Yaman ki Bandish

UNIT 5: Taal – Dadra, Keherwa, Roopak evem Teentaal

MUH 281 – Sangeet Kriyatmak-2

II Semester

UNIT 1: Introduction to swar/Taal vadya - Baithak

UNIT 2: Sargam evam Alankar

UNIT 3: Playing/Singing of Dhun/Geet

UNIT 4: Playing/Singing of Prayer

UNIT 5: Playing/Singing of University Song

Physics and Computer Science. Academic Council Presentation: November 21, 2015

Course: PHM 303 Title: Introduction to Quantum Mechanics

Class: B.Sc., Status of the Course: MAJOR

Credits: 3, Periods (50 mts each) per week: 3 (L:3+T:0+P/S:0), Min. Periods/Sem: 42

Unit 1: Origins of Quantum Mechanics

8 Periods

Atomic spectrum and Wave-particle duality: Compton scattering, Franck-Hertz Experiment, Davisson-Germer experiment. X-rays, production, continuous and characteristic spectra, Moseley's law, x-ray diffraction, Bragg's condition. Blackbody radiation, Feynman's description of two-slit experiment. Uncertainty principle and complementarity.

Unit 2: Schrodinger's Wave Mechanics and Operator Formalism

9 Period

Schrodinger Equation, Statistical Interpretation of the wavefunction, Review of Probability — mean, variance of a continuous distribution, expectation value and uncertainty of position, Dirac Delta function, Normalization of the wavefunction, measuring momentum and the momentum operator, expectation value and uncertainty of momentum, the uncertainty principle. Hilbert space, observables: hermitian operators, eigenfunctions and eigenvalues of hermitian operators, generalized uncertainty principle, Dirac notation.

Unit 3: Time-Independent Schrodinger Equation

8 Periods

Stationary states, the time independent Schrodinger equation, infinite square well and its solutions, the harmonic oscillator -- algebraic solution and analytical solution, free particles and wave-packets, dispersion of wavepackets, delta-function potential, finite square well, one-dimensional scattering.

Unit 4: Quantum Mechanics in three dimensions

9 Periods

Schrodinger equation in spherical coordinates, separation of variables, angular equation and spherical harmonics, radial equation; the hydrogen atom, principal, orbital and magnetic quantum numbers of the hydrogen atom, Stern-Gerlach experiment, gyromagnetic ratio and Bohr magneton, angular momentum, spin.

Unit 5: Identical Particles

9 Periods

Identical particles, symmetric and antisymmetric wavefunctions, Bosons and fermions, exchange forces, Intro to Quantum Statistical Mechanics: Bose-Einstein and Fermi-Dirac Statistics, Blackbody radiation. Helium atom, Periodic table and Hund's rules, spectral notation for atomic states, free electron gas, degeneracy pressure and Fermi energy, Dirac Comb and Band structure.

Suggested Readings:

Textbook: Griffiths, Introduction to Quantum Mechanics, Prentice-Hall.

PREREQUISITE: PHM281 APPLIED PHYSICS II

Physics and Computer Science. Academic Council Presentation: November 21, 2015

Course: PHM601, Title: Quantum Mechanics

Class: B.Sc. Honors, Status of the Course: MAJOR

Credits: 4, Total Periods (50 minutes each) per week: 4 (L:4 + T:0 + P:0) Min Pds/Term: 56

Unit 1: Mathematical Formalism

10 Periods

Delta function and Fourier Transform. Wave packet: propagation and dispersion. Operators and states, Review of linear algebra -- vector spaces, linear transformations, Hermitian matrices, unitary matrices, commutators, eigenvectors and eigenvalues, function spaces, bra ket notation, Hilbert Space, momentum space wavefunctions, and proof of generalized uncertainty principle, energy-time uncertainty principle.

Unit 2: Time Independent Perturbation Theory

12 Lectures

General Formulation of time-independent perturbation theory, first order corrections to energy levels and wavefunctions, second order corrections to energies; degenerate perturbation theory, Application to hydrogen: fine structure — relativistic corrections and spin-orbit coupling, weak field Zeeman effect and Paschen-Back Effect, Hyperfine Splitting, Stark Effect.

Unit 3: Variational Principle and WKB Approximation

11 Lectures

The variational principle, application to Helium, Hydrogen molecule ion (Chandrasekhar's trial wavefunction), WKB approximation, tunnelling and Gamow's theory of alpha decay, Connection formulas and semi-classical limit (Wilson-Sommerfeld quantization)

Unit 4: Time-Dependent Perturbation Theory

11 Lectures

General formulation, application to two-level systems, transition probabilities, Fermi's Golden Rule, sinusoidal perturbations, Emission and Absorption of Radiation, Selection Rules

Unit 5: Scattering

11 Lectures,

Concept of a Differential Scattering Cross-Section, Partial wave analysis, optical theorem, Born approximation. examples.

Suggested Readings:

R Shankar, *Principles of Quantum Mechanics*, Springer. Griffiths, *Introduction to Quantum Mechanics*

PREREQUISITE: PHM303 Introduction to Quantum Mechanics

Course Number: STH101, Course Title: साहित्येतिहास: नाटक एवं निबंध

(SAHITYETIHAS: NAATAK & NIBANDH)

Class: B.A., Status of Course: HALF COURSE, Approved since session: 2014-15
Total Credits: 3, Periods (55mts.each)/week: 3 (L-3+T-0+P/S-0), Min.pds./sem: 39

UNIT 1: भास-'चारुदत्तम्' अंक प्रथम एवं द्वितीय

UNIT 2: भास-'चारुदत्तम्' अंक तृतीय एवं चतुर्थ

UNIT 3: 'चारुदत्तम्' से आलोचनात्मक प्रश्न

UNIT 4: संस्कृत साहित्य का इतिहास-रामायण, महाभारत, महाकाव्य, नाटक, गीतिकाव्य एवं जन्तुकथा

UNIT 5: २० पंक्तियों का संस्कृत भाषा में निबन्ध

सन्दर्भ ग्रन्थः

रामकृष्ण आचार्य - संस्कृत निबन्धान्त्रलि रमेशचन्द्र शास्त्री - संस्कृत निबन्ध माला पांडेय एवं व्यास - संस्कृत साहित्य की रूपरेखा गेराला वाचस्पति - संस्कृत साहित्य का इतिहास उपाध्याय बलदेव - संस्कृत साहित्य का इतिहास

Course Number: STH102, Course Title: गद्य, पद्य, व्याकरण एवम् अनुवाद

(GADYA, PADYA, VYAKARAN & ANUVAAD)

Class: B.A., Status of Course: HALF COURSE, Approved since session: 2014-15 Total Credits: 3, Periods (55mts. each)/week: 3 (L-3+T-0+P/S-0), Min.pds./sem: 39

UNIT 1: हितोपदेश (मित्र लाभ १ से १०० श्लोक तक)

UNIT 2: भगवद्गीता (तीसरा अध्याय)

UNIT 3: हितोपदेश एवं भगवद्गीता पर आलोचनात्मक प्रश्न

UNIT 4: (a) राम, हरि, गुरु रमा, मित, नदी, धेनु, वधू, पुस्तक, वारि (b) सन्धि (i) स्वर सन्धि- अकः सवर्णे दीर्घः, इकायणिच, वृद्धिरेचि एचोऽयवायावः, आद्गुणः (ii) व्यंजन सन्धि-स्तोःश्चुनाश्चुः, ष्टुनाष्टुः झलांजशोऽन्ते (iii) विसर्ग सन्धि- विसर्जनीयस्यसः, ससजुषोरूः (c) कृदन्त-तव्यत्, अनीयर्, क्त और क्तवतु, शतृ और शानच्, तुमुन् और ल्यप्

UNIT 5. सरल अनुवाद (हिन्दी से संस्कृत में)

सन्दर्भ ग्रन्थ

कपिलदेव द्विवंदी - संस्कृत व्याकरण वाबूराम त्रिपाठी - संस्कृत व्याकरण वाबूराम सबसेना - संस्कृत व्याकरण प्रवेशिका अमरनाथ पांडेय - संस्कृत व्याकरण ज्योत्सना कपिलदेव द्विवंदी - रचनानुवाद कीमुदी श्रीनवास शास्त्री - संस्कृत रचना अनुवाद प्रभा

पांडेय एवं व्यास - संस्कृत साहित्य की रूपरेखा