सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
DEVELOPMENT COMMISSIONER
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES
MSME TECHNOLOGY CENTRE

MODEL CURRICULUM

Qualification Name:

Diploma (Advanced) in Footwear Manufacture & Design (ADFMD)

Qualification Code: MSME/DFMD/60

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Model Curriculum Version: 2.0

Submitted By:
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COURSES / MODULE TEMPLATE

SEMESTER I

NOS/Module: Art, Design & Fashion

NOS/Module Code: MSME/DFMD/01

Outcomes:

After completion of course Student should be able to:

- Explain about the elements of fashion
- Explain about the different fashion markets
- Explain about wide variety of shoe styles and designs
- Presentation of balanced, logical and translatable shoe designs
- Demonstrate an ability to translate art to a shoe design

Theory Hours: - **Practical Hours: 30** **Theory Marks: -** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	PR Hours	PR Marks
Unit I	Fashion Considerations	After completion of unit, Students to be made aware of the requirements for the different fashion markets, Europe, America, rest of the world.	• Line: its effect on footwear design, upper and bottom, proportion and balance • shape: the creation of different last/unit silhouettes to emphasize the design modes • Colour: the psychological effect of colour and the importance of the seasonal colour variations. • Pattern: the effect of surface pattern detailing and modeling on different materials leather &synthetic and on unit design • Texture: the effect that surface texture can have on the appearance and wearability of shoes	12	35
Unit II	Foot and Last	After completion of unit, Students should know the variety of shoe styles and designs for various categories and last suitability for the full range of shoes for different categories	• The foot and leg at rest and in motion • The wide variety of shoe styles and designs for men's'. women's' and children's shoes • The foot and leg within the shoe at rest and in motion • Last suitability for the full range of shoes for men, women and children • A wide selection of sole units, rigid and flexible of all types of materials natural and synthetic • A comprehensive selection of shoe components	12	35
Unit III	Presentation	After completion of unit, Students should a. They may develop an individual "hand writing" b. They will be able to describe production processes through the sketch/design c. They will be able to illustrate different constructions, surface textures and finishes d. Demonstrate and apply knowledge of the constraints imposed upon the shoe	• Organizing and editing work to create the most visually stimulating presentation of balanced, logical and translatable shoe design	6	30

		designer by anatomical consideration			

NOS/Module: Design & Pattern Cutting

NOS/Module Code: MSME/DFMD/02

Outcomes:

After completion of course Student should be able to:

- Explain about the Preparation of Mean Forme of LAST
- Explain about the Vacuum forme and slotted forme
- Explain about the production of a working standard
- Prepare the Specification sheet
- Production of bottom stock patterns

Theory Hours: - **Practical Hours: 90** **Theory Marks: -** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	PR Hours	PR Marks
Unit I	Introduction to Pattern Cutting Techniques	After completion of unit, Students should aware • Variety of last covering and forme taking • Production of a working standard from mean forme	• Variety of last covering and forme taking methods. • Paper tapes, vacuum forme and slotted methods. • Designing on the 3D shape of the last or forme, and geometrically designing on the flat 2D • Production of a working standard (compatible to construction allowances) and sectional patterns for the full shoe	20	10
Unit II	Production of pattern standards	After completion of unit, Students should • Familiar with the various working standards for the main styles and constructions	• Using knowledge and techniques to produce working standards for the main styles and constructions, to include Court, Oxford, Gibson, Monk, Trainer and Casual styles. • Relate to modern methods of production	20	30
Unit III	Shoe accessories	After completion of unit, Students should • Familiar with the shoe accessories	• Use of buckles, bows, straps, elastics, Velcro etc for functional and decorative purposes.	10	10
Unit IV	Production of bottom stock patterns	After completion of unit, Students should know the • Preparation of the insole and sock pattern for the various constructions	• Last manufacturers bottom plate patterns and the production of the insole and sock pattern for the various constructions	10	20
Unit V	Specialized Pattern cutting techniques	After completion of unit, Students should • Know the material economy, effecting style or line	• Pattern springing and deadening techniques for material economy, look and fit. • Appreciation of pattern interlock without effecting style or line	10	10
Unit VI	Prototype (model) preparation	After completion of unit, Students should • Know the techniques and practical shoe making	• Using the knowledge, techniques and practical shoemaking skills acquired in other areas of the syllabus produce design prototypes ready for appraisal and assessment. • An awareness of commercial requirements of suitability and excellence to be acknowledged	10	10
Unit VII	Specifications	After completion of unit, Students should know the • Preparation of specification sheet and sequence of operations	• Specification procedures for use in production, detailing of style, edge treatments, materials and components used. • Information and sequence of operations through the whole process	10	10

NOS/Module: Pre-Production Technology

NOS/Module Code: MSME/DFMD/03

Outcomes:

After completion of course Student should be able to:

- Explain about the structure of human foot
- Describe about various foot joints
- Explain about movements at the ankle joint and toe joint
- Brief about Muscles, Tendons and Ligaments
- Explain about the Foot arches and its Characteristics
- Explain the various stages of Foot growth
- Describe about the types of sizing system
- Convert between two sizing system
- Explain about most important LAST Dimensions
- Describe Classification of LAST
- Distinguish between Foot and LAST

Theory Hours: 30 **Practical Hours: -** **Theory Marks: 100** **Practical Marks: -**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks
Unit I	The structure of the foot and lower leg	After completion of unit, Students should aware • Functions of foot, bones of boot and various joints at the foot	• The function of the foot • Outline of the skeleton • The bones of the leg • The bones of the foot • The foot joints	6	10
Unit II	The movement of the foot in motion	After completion of unit, Students should familiar with • Foot dynamics at the toe and ankle joint	• Movement at the ankle joint • Movement at the toot joint (metatarsal/phalanges).	2	10
Unit III	Foot Arches	After completion of unit, Students should familiar with • Various foot arches and its functions	• Inner longitudinal • Outer longitudinal • Transverse • Anterior metatarsal	2	10
Unit IV	Foot development	After completion of unit, Students should know the • Bone formation from the foot growth	• Ossification • Bone distortion	2	5
Unit V	Measurement Systems	After completion of unit, Students should know the • Various sizing systems and how sizing systems are developed • Foot measuring devices at various regions	• English/British size system • American size system • French or continental size system • Mondo point size system • Europoint size system • Japanese size system • Conversion between two system • Size chart for each category • Foot measuring devices.	4	20
Unit VI	Footwear Last	After completion of unit Student should know • Classification and Various types of Footwear Last • Last Dimensions • Various proportional measurements of Last • Last Shapes, Exit Devices and Standardization • Distinguish Footwear Last and Foot	• Introduction and Importance of LAST. • Anatomy of LAST • Classification of Footwear LAST • Most Important Last Dimensions • Relationship Between Toe Spring and Heel Pitch • Proportional Measurements of LAST • Fitting of Shoe • LAST Shapes • Last exit devices • Last standardization • Last Grading • Difference Between Foot and LAST • Different Toe Styles	2	10
Unit	Basic foot fitting	After completion of unit Student	• Corresponding foot and last	3	10

VII		should know • Different foot width specifications • Different foot width indications • How to choose the fittingfootwear • Joint movement relationwith fitting • Devices to improve shoefitting	measurements • Identifying foot joint positions onfoot • Relation with foot dynamics • How to measure foot • How to measure footwear last • Allowances to be given • Size to size measurementallowances		
Unit VIII	Last and Pattern Grading	After completion of unit, Students should know the • Last grading and principles of pattern grading	• An understanding of last grading. • Principles of pattern grading by hand and pantograph machine. (If available)	3	10
Unit IX	Last features	After completion of unit, Students should know the • Last standardization and exit devices	• Requirements for different constructions • Last standardization	2	5
Unit X	Shoe design considerations	After completion of unit, Students should know the • Foot comfort relate to the various design of uppers • Various shoe constructions • Foot health's • Physical properties of materials • Selection of proper materials for foot comfort	• Foot comfort in relation to the design of uppers, height and shape • Position of seams, cut outs and straps • Fit and flexibility of the different constructions • Mechanical properties of the shoe and its components, their effect on foot movement and comfort adjustment • Physical properties of materials and the effect on foot health, water vapor, permeability, water absorption, air permeability, thermal conductivity and the vapor barrier principle • Choice of materials to allow for perspiration, absorption, heat dissipation. The use of cushioning to aid under foot comfort • The frictional effects between hose and shoe linings, insole and sole • Pattern grading and pattern making • Measurements: metric imperial and those of special application to the shoe Industry • Accuracy and tolerance levels of acceptability in design • Geometric interlock of patterns • Costing methods for different layouts (scaling) • Geometry of pattern grading • An awareness of the value of fit trial and field trial • Shoe engineering, the production of Jigs, knives and die	4	10

NOS/Module: Materials & Testing I

NOS/Module Code: MSME/DFMD/04

Outcomes:

After completion of course Student should be able to:

- Explain about the leather processing
- Explain about the physical testing of leather
- Explain in detail about the chemical testing of leather
- Explain in detail about leather unit sole manufacture
- Brief about various types of toepuff & stiffeners and its manufacturing process

- Brief about the manufacturing process, properties and performance evaluation of various soling materials.
- Explain about heels and wedges used in shoe manufacture.
- Explain about shanks, fillers and top-pieces
- Explain in detail properties of adhesives, tests for adhesion
- Describe about recent developments in footwear materials

Theory Hours: 60 **Practical Hours: 30** **Theory Marks: 100** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks	PR Hours	PR Marks
Unit I	Survey of the classes of materials used in shoe making.	After completion of unit, Students should know the • Fibrous & non-fibrous materials, textiles	• Fibrous materials • Textiles. • Non-fibrous materials • Thermoplastic and non-thermoplastic materials; adhesives, moulding materials, synthetics, reinforcements.	5	10	5	10
Unit II	Trends in modern materials	After completion of unit, Students should know the • Recent trends of materials used in shoe manufacture	• Physical and chemical changes which are important in shoe manufacture	5	10	3	10
Unit III	Leather	After completion of unit, Students should know the • Leather tanning process and various types of tanning	• Outline of leather production • Physical tests • Chemical and physical tests on fastness of finish	10	15	5	15
Unit IV	Textiles and Synthetic materials	After completion of unit, Students should know the • Textiles and synthetic materials and strength & stretch of materials	• A descriptive outline of textiles and synthetic (plastic) materials. • Tests on the strength, stretch and directional properties of fabrics & synthetics	5	10	5	10
Unit V	Properties	After completion of unit, Students should know the • Various properties includes functional, comfort etc	• Water vapour permeability • The important properties of shoe upper materials • Tear resistance as applied to cutting, skiving and stitching operations • Upper reinforcements improving strength, restricting stretch, increasing rigidity. • A descriptive survey o{ upper reinforcing tapes, bindings and fabrics.	5	15	3	15
Unit VI	Components	After completion of unit, Students should know the • Various reinforcement materials , insole manufacturing, different soling materials & its manufacturing	• Toe puffs & stiffeners • Insoles Leather & combination types. • Insole construction • Soles • Heels and wedges • Top-pieces • Shanks wood, steel and plastic. • Fillers • Comparative properties tor durability, flexibility,	10	15	3	15

			density, ageing.				
Unit VII	Testing of materials to include their specific properties	After completion of unit, Students should know the • Physical testing on rubber, plastic materials and adhesives	• Physical tests on the main properties • A survey of bottom leather production • A survey of rubber technology • A survey of plastics technology • The effects of temperature on thermoplastics and thermosetting materials • Modern adhesives, Properties of adhesives • Tests on adhesives	10	15	3	10
Unit VIII	Recent developments in materials	After completion of unit, Students should know the • Recent development of upper, insole and sole components used in shoe manufacture	• Uppers, soles and components	10	10	3	15

NOS/Module: Clicking Technology I

NOS/Module Code: MSME/DFMD/05

Outcomes:

After completion of course Student should be able to:

- Explain about the basic styles of footwear and components
- Explain about materials used in footwear manufacture
- Explain about common defects on leather
- Brief about causes of stretch direction.
- Describe leather grading and leather sorting
- Explain in detail about leather properties and inspection.
- Brief about cutting preparations before cutting.
- Explain about principles of leather cutting
- Explain about hand and machine cutting
- Explain about handling and storage of knives in clicking department
- Explain about quality control and clicker allowance

- Cut components in leather for upper and lining of shoe

Theory Hours: 30 **Practical Hours: 30** **Theory Marks: 100** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks
Unit I	Basic Classification of Footwear	After completion of unit, Students should know the • Various styles of footwear • Functions, main parts of footwear	• Basic styles of footwear • Upper Parts & Components • Lining Parts & Components • Reinforcing Parts & Components • Trimmings and Closing Parts • Bottom Shoe Parts & Components • Classification of Footwear According to Different Positions • Classification of Footwear According to Material of Construction • Height of Footwear • Classification according to the end use • Classification according to the cut • Classification according to the size	3	10
Unit II	Clicking techniques	After completion of unit, Students should know the • Main upper components, materials used in manufacture	• The clicking operation defined • The main upper components. • Materials used in shoe upper making • The cutting operation, material utilization, material exploitation • The quality concept (resistance to wear, part suitability)	3	10
Unit III	Clicking department procedure	After completion of unit, Students should know the • Importance of clicking room management	• Importance of clicking room management	2	10
Unit IV	Nature of clicking	After completion of unit, Students should know the • Line of tightness and stretchiness, variations in skin and common defects on leather	• Line of tightness and stretchiness • Quality variations in skin • Defects in upper leathers • Cutting system of leathers	2	10
Unit V	Materials for shoe uppers	After completion of unit, Students should know the • Shoe upper materials	• Types of fabrics in common use • Combined fabrics • Synthetic materials • Layouts and cutting techniques for fabrics & synthetics • Multi cutting techniques	3	10
Unit VI	Types of leathers	After completion of unit, Students should know the • Types of leathers	• Softy Leather • Oil Pull Up Leather • Brush Off Leather • Nubuck leather • Patent leather • Suede leather • Corrected grain leather etc	2	10
Unit VII	Examination of leathers	After completion of unit, Students should know the • Inspection of leathers	• Leather Grading and Purchase Variances • Leather inspection	3	10
Unit VIII	Skins, hides and sides	After completion of unit, Students should know the • Quality characteristics	• Variations in leather • Parts of skin/hide	2	10
Unit IX	Effects of tanning	After completion of unit, Students should know the • Tanning effects	• Effects of tanning	2	6
Unit X	Review of fabric and synthetic materials	After completion of unit, Students should know the • Synthetic and materials	• Layout on patterns of fabrics and synthetics	3	4
Unit	Clicking Press	After completion of unit Student	• Types of clicking press; Clicking Press	2	4

XI	& Knives	should be with throughknowledge on • Hand cutting • Machine cutting • Pattern layout • Demands and requirements in the shoe factories	Knives, Handling the cutting knives, Type of knives, Advantages and disadvantages of clicking knives, Storage of knives, • Cutting block • Operation Safety Methods Clicking, Protection and safety of work		
Unit XII	Basic clicking costing	After completion of unit, Students should know the • Clicking costing and its allowances	• Cutting allowances • clicking costing sheets	3	6
Unit No.	**Unit Name**	**Unit Level Outcomes**	**Contents (Chapters/Topics)**	**PR Hours**	**PR Marks**
Unit XIII	Clicking Practical	After completion of unit Student should be with through knowledge on • Cutting of shoe components in leather for upper and lining patterns	• Clicking Pre-training Exercises • Shoe Production – Clicking of upper and lining components for 6 pairs of production shoes namely Men's Derby (Hand Lasted), Men's Derby, Men's Oxford, Ladies Balleyflat, Boys Derby & Sandal Stuck-on	30	100

NOS/Module: Closing Technology I

NOS/Module Code: MSME/DFMD/06

Outcomes:

After completion of course Student should be able to:

- Explain about the pre-closing & closing operations
- Explain about sewing machines used in upper making
- Explain about the tools & equipments required, materials required and operating instructions of pre-closing and closing operations.
- Brief about the various types of seams
- Explain about needles and threads used in upper making
- Relationship between Needle, Thread and Stitch Length.
- Describe about types of adhesives and factors affecting the selection of adhesives.
- Brief about classification of hooks and its parts and functions.
- Prepare JIG assembly for upper components.
- Brief about process control in pre-closing and closing operations.
- Explain about quality control measures in pre-closing & closing operations
- Brief about the sequence of operations for basic styles of footwear

Theory Hours: 30 **Practical Hours: 90** **Theory Marks: 100** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks
Unit I	Closing Technology	After completion of unit, Students should know the • Sequence of operations, seams, needle and threads, quality inspection for upper	• Machinery types, operational sequence (preparation & stitching) • Methods of upper reinforcement, edge and decorative treatments • Types of seams • Hook-Classification of Hooks in Lockstitch sewing machine, Hook parts and functions. • Needles and threads types, sizes, selection, classification, relationship, application • Jig assembly of upper components • Automatic (to include CNC) equipment • Upper shaping equipment • Departmental management for work loading • Methods of work transportation • Types of inspection	30	100
Unit No.	**Unit Name**	**Unit Level Outcomes**	**Contents (Chapters/Topics)**	**PR Hours**	**PR Marks**
Unit II	Closing Practical	After completion of unit, Students should know the • Stitching and non-stitching, hand work techniques and production range of upper styles	• Different types of stitching and non-stitching • The techniques of hand work (manual and machine). • Machine adjustments for functional efficiency • The production of a range of upper styles (6 pairs) namely Men's Derby (Hand Lasted), Men's Derby, Men's Oxford, Ladies Balleyflat, Boys Derby & Sandal Stuck-on	90	100

NOS/Module: Lasting & Making Technology I

NOS/Module Code: MSME/DFMD/07

Outcomes:

After completion of course Student should be able to:

- Explain about the footwear machines & its applications
- Explain about insoles & soles used in footwear making
- Explain about adhesives & trouble shooting for bonding failures
- Detail about the sequence of operations of cemented construction
- Explain about quality control measures in lasting & making
- Briefly about the various shoe constructions
- Explain about the top piece methods of attachment.
- Explain in detail shoe finishing techniques
- Carry out the process control in lasting, making and finishing operations
- Explain in detail quality control pertaining to footwear
- Brief about functions and processes of shoe room operations.

Theory Hours: 30 **Practical Hours: 90** **Theory Marks: 100** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks

Unit I	Lasting	After completion of unit, Students should know the • Methods of shoe construction, types of toe-puff and stiffener, lasting principles and methods of application	• Methods of shoe construction • Types and uses of toepuff and stiffener • Lasting principles and methods of applications • Methods of heel attachment • Uses of hot melt adhesives • Lasting faults and remedies • Theory and practice of heat setting	12	40
Unit II	Correct Techniques of sole attachment	After completion of unit, Students should know the • Insole preparation, soling materials for different construction, preparation of bottom components, finding faults at subsequent operations	• Composition, characteristics and uses of insole and soling materials for different constructions • Preparation of bottom components • Assembly and storage of lasts and components • Standardization of components • Departmental management • Making faults and effect on subsequent operations	6	20
Unit III	Finishing	After completion of unit, Students should know the • Finishing processes for various soling, heeling and upper materials	• Procedure and processes of soling and heeling materials • Top piece methods of attachment • Finishing processes for leather and non-leather • Finding finishing faults	6	20
Unit IV	Shoe room	After completion of unit, Students should know the • Function and processes for shoe room operations, top sprays, decorative treatments • Quality control through sealed samples	• The functions and processes of the shoe room • Shoe room operations and techniques • Fault identification, diagnosis of cause and defects in the process • Application of decorative treatments • Final examination and inspection procedures • Quality control through sealed samples and documented specifications • Packaging and presentation techniques • Storage of finished boxed shoes (prevention of ageing)	6	20
Unit No.	**Unit Name**	**Unit Level Outcomes**	**Contents (Chapters/Topics)**	**PR Hours**	**PR Marks**
Unit V	Lasting Practical	After completion of unit Student should be with through knowledge on lasting & making of various shoe Construction.	a. Lasting Pre-training Exercises b. Shoe Production – Lasting & Making for 6 pairs of production shoes based on various styles namely Men's Derby (Hand Lasted), Men's Derby, Men's Oxford, Ladies Balleyflat, Boys Derby & Sandal Stuck-on	90	100

NOS/Module: Hand Shoe Making

NOS/Module Code: MSME/DFMD/08

Outcomes:

After completion of course Student should be able to:

- Explain about the Insole Preparations
- Explain about the hand lasting
- Explain in detail about the lasting and sewing in welt
- Explain in detail about sole attaching process
- Explain in detail shoe finishing

Theory Hours: - **Practical Hours: 60** **Theory Marks: -** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	PR Hours	PR Marks
Unit I	Insole preparations	After completion of unit Student should be with through knowledge on • Preparation of insole and its attachment & moulding	• Prepare "block" insole castor . • Shape the insole to the last bottom • Attach insole to last, cut rebates and make awl holes.	15	25
Unit II	Lasting and sewing	After completion of unit Student should be with through knowledge on • Preparation of toe puff and stiffener, hand lasting and sole	• Cut and prepare stiffener, toe puff, welt • Make up threads, wax and attach bristles (or nylon.) • Last by hand	15	25

		stitching	• Sew in welt and prepare for sole stitching		
Unit III	Sole attaching and heel building	After completion of unit Student should be with through knowledge on • Sole attachment and heel attachment	• Prepare and fill shoe bottom and components for sole attachment • Cut and prepare sole and seat piece. • Attach seat piece. • Attach sole by hand stitching • Build heel and secure	15	25
Unit IV	Finishing	After completion of unit Student should be with through knowledge on • Shoe finishing and inspection to specification	• Edge and heel trim • Set edges and apply appropriate edge ink, heel colour and polish. • Apply treatments, including as appropriate laces. • Ethnic construction to be assessed to local criteria. • Inspection to specification	15	25

SEMESTER II

NOS/Module: Clicking Technology II

NOS/Module Code: MSME/DFMD/09

Outcomes:

After completion of course Student should be able to:

- Explain about the materials and equipment's used in clicking section.
- Explain about the process control at leather assortment & clicking operations
- Explain in detail about the operating instructions of leather assortment & clicking operations
- Explain in detail about quality control at leather assortment and clicking operations.

Theory Hours: - **Practical Hours: 90** **Theory Marks: -** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	PR Hours	PR Marks
Unit I	Clicking Practical	After completion of unit Student should be with through knowledge on • Cutting of shoe components in leather for upper and lining patterns	• Shoe Production – Clicking of upper and lining components for 6 pairs of production shoes namely Moccasin Shoe, Oxford Shoe, Ladies Ankle Boot, Monk Derby, Sandal Stitch down, Toe Cap Derby	90	100

NOS/Module: Closing Technology II

NOS/Module Code: MSME/DFMD/10

Outcomes:

After completion of course Student should be able to:

- Explain about the materials and equipment's used in pre-closing & closing section.
- Explain about the process control at pre-closing & closing operations.
- Explain in detail about the operating instructions of pre-closing & closing operations.
- Explain in detail about quality control at pre-closing & closing operations.

Theory Hours: - **Practical Hours: 120** **Theory Marks: -** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	PR Hours	PR Marks
Unit I	Closing Practical	After completion of unit Student should be with through knowledge on • Pre-closing & closing operations in upper making	• Shoe Production – Upper Closing for 6 pairs of production shoes namely Moccasin Shoe, Oxford Shoe, Ladies Ankle Boot, Monk Derby, Sandal Stitch down, Toe Cap Derby	120	100

NOS/Module: Lasting & Making Technology II

NOS/Module Code: MSME/DFMD/11

Outcomes:

After completion of course Student should be able to:

- Explain about the materials and equipment's used in pre-lasting, lasting, post-lasting & finishing section.
- Explain about the process control at pre-lasting, lasting, post-lasting & finishing operations.
- Explain in detail about the operating instructions of pre-lasting, lasting, post-lasting & finishing operations.
- Explain in detail about quality control at pre-lasting, lasting, post-lasting & finishing operations.

Theory Hours: - **Practical Hours: 120** **Theory Marks: -** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	PR Hours	PR Marks
Unit I	Lasting Practical	After completion of unit Student should be with through knowledge on • Lasting & making of various shoe construction.	• Shoe Production – Lasting & Making for 6 pairs of production shoes namely Moccasin Shoe, Oxford Shoe, Ladies Ankle Boot, Monk Derby, Sandal Stitch down, Toe Cap Derby	120	100

NOS/Module: Purchasing & Stores Control

NOS/Module Code: MSME/DFMD/12

Outcomes:

After completion of course Student should be able to:

- Explain about the purchasing parameters
- Explain about the purchasing procedures
- Prepare a Sample Purchase Order Form
- Prepare a Sample Purchase Requisition Form
- Brief about the Factors Influence the Evaluation and Selection of the Supplier
- Explain Functions of Stores Department and the Duties of the Storekeeper
- Explain in detail about the FIFO principles
- Explain in detail about transportation methods
- Explain in detail warehouse operations

Theory Hours: 30 **Practical Hours: -** **Theory Marks: 100** **Practical Marks: -**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks
Unit I	Purchasing management	After completion of unit Student should be with through • Knowledge on management of materials	• Purchasing procedures • Basic costing procedures • Material management	7	30
Unit II	Materials management	After completion of unit Student should be with through knowledge on • Inventory control and material cycle	• stock keeping • FIFO principles • The material cycle	6	20
Unit III	Materials handling	After completion of unit Student should be with through knowledge on • Storage and transportation of materials to the production area	• storage {condition) • transportation methods • health & safety in manual handling	5	20
Unit IV	Warehouse operations	After completion of unit Student should be with through knowledge on • Inventory system, materials issues, re-use and disposals sale lines and surplus stock	• Inventory administration (perpetual inventory system). • Computer control systems (CAD/CAM) bar coding. • Material issues, re-use, re-work, disposals • Sale lines and surplus stock	12	30

NOS/Module: Basic Costing

NOS/Module Code: MSME/DFMD/13

Outcomes:

After completion of course Student should be able to:

- Explain about the elements of cost
- Explain about the components of cost
- Explain in detail about the overheads and its classification
- Explain in detail about pricing policies
- Explain in detail about costing methods

Theory Hours: 30 **Practical Hours: -** **Theory Marks: 100** **Practical Marks: -**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks
Unit I	Materials costing	After completion of unit Student should be with through knowledge on • Elements of cost	• Procedures used for estimating allowances for shoe components • The influence on allowances on the type of shoe part • Incorporation of cost factors in footwear specifications	8	20
Unit II	Labour	After completion of unit Student should be with through knowledge on • Wage payment system, labour cost for all operations	• Procedures for estimating labour cost allowances • Wage payment systems • A knowledge of labour costs for all operators • A knowledge of the labour cost per hour/minute • The effects on labour costs of national and local agreements with Trade Unions and • Manufacturers Associations.	8	30
Unit	Overheads	After completion of unit	• The meaning of overhead costing	8	30

III		Student should be with through knowledge on • Overheads costing and its recovery	• Methods of recovery • The calculation of an overhead percent • Building the overhead into the shoe by department or function		
Unit IV	Profit	After completion of unit Student should be with through knowledge on • Competition, pricing policies and company turn over	• The meaning of profit, the profit motive • Pricing policies • Competition • Market constraints • Company turnover • Expansion and retraction – profit/loss • Future plans by profit management	6	20

NOS/Module: Quality Assurance & Quality Control

NOS/Module Code: MSME/DFMD/14

Outcomes:

After completion of course Student should be able to:

- Explain about the supplier/customer relations
- Explain about dimensions of quality
- Brief about the seven QC Tools and its applications in footwear industry.
- Explain about the quality control systems
- Explain in detail about the ISO 9001/2000
- Detailing the 21 requirements for shoe making interpretations
- Explain in detail about random inspection methods
- Explain in detail various stages of inspection

Theory Hours: 30 **Practical Hours: -** **Theory Marks: 100** **Practical Marks: -**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks
Unit I	Quality assurance	After completion of unit Student should be with through knowledge on • Quality assurance to the customer on reducing operating costs	• Quality assurance to the customer-guarantees • Company QA-vision and mission statements • On reducing operating costs • Absolutes of quality-conformance, prevention. standard, measurement non conformance	6	20
Unit II	Supplier/customer relations	After completion of unit Student should be with through knowledge on • Supplier/customer relations	• Supplier/Customer relations	6	20

Unit III	Suppliers and specifications	After completion of unit Student should be with through knowledge on • Sourcing, quality performance	• Partnership sourcing • Defining quality with the supplier • Critical dimensions of quality • Customer as the final Inspector	6	20
Unit IV	Quality control	After completion of unit Student should be with through knowledge on • Seven tools of quality control. • ISO 9001/2000	• Seven Tools for Quality Control • The importance of in-house quality control systems • ISO 9001/2000 and its impact on world trade • Detailing the 21 requirements for shoe making interpretations • Requirement analysis • Quality concept • Main factors on the quality of the product	6	20
Unit V	Inspection systems	After completion of unit Student should be with through knowledge on • Various inspection systems	• Fixed inspection - i.e final inspection • The use of sealed samples • The need for detailed specifications for final inspection • Quality recording _ rework, rejects • Quality initiatives • Random inspection method • Corrective action system • company quality procedure manual	6	20

NOS/Module: Computer Studies

NOS/Module Code: MSME/DFMD/15

Outcomes:

After completion of course Student should be able to:

- Explain about the computer literacy
- Explain about the word processing, spread sheets
- Explain in detail about the 2D CAD techniques
- Explain in detail about application of computer technology in shoe making
- Explain in detail about CAD/CAM applications

Theory Hours: - **Practical Hours: 30** **Theory Marks: -** **Practical Marks: 100**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	PR Hours	PR Marks
Unit I	Computer systems	After completion of unit Student should be with through knowledge on • Language of computer technology, data base & data processing	• Explain the language of computer technology • Define the meaning and use of data bases • Operating a data base, data processing • Systems analysis/design • The computer and documentation systems • The computer and foreign trade g Use of the Internet for mail and to access the World Wide web.	10	35
Unit II	Shoe making applications	After completion of unit Student should be with through knowledge on • CAD/CAM applications in shoe making	• What is CAD/CAM, the CAD process • the 3D CAD process, prototyping • CAD links to CAM • CAD Jinks to computer aided manufacture • CAD generated patterns • Last digitization • Working patterns • Jigs and dies from a CAD/CNC system	10	35

			• Checking and testing for accuracy		
Unit III	Computer in setting targets and objectives	After completion of unit Student should be with through knowledge on • Bar coding, ticket making and showing performance levels	• Measuring and managing through put times • Bar coding for daily work-in-progress • Ticket making and monitoring • Graphs and charts showing performance levels	10	30

NOS/Module: Applied Science

NOS/Module Code: MSME/DFMD/16

Outcomes:

After completion of course Student should be able to:

- Explain about the thermometers and temperature scales
- Explain about the pneumatic and hydraulic transmission
- Explain in detail about the solvents and adhesives safe working practices
- Explain in detail about shoe industry hazards
- Explain in detail about ISO 14001 requirements

Theory Hours: 30 **Practical Hours: -** **Theory Marks: 100** **Practical Marks: -**

Unit No.	Unit Name	Unit Level Outcomes	Contents (Chapters/Topics)	TH Hours	TH Marks
Unit I	Physical science	After completion of unit Student should be with through knowledge on • Physical science to be applied in shoe making process	a. The structure of matter: molecules and atoms b. The kinetic theory: diffusion and elasticity c. Relative density d. Force and motion, Friction e. Thermometer: temperature scale, f. Expansion co-efficient g. Heat units, specific heat.	7	20
Unit II	Applied mechanics and electricity	After completion of unit Student should be with through knowledge on • Electric current, power generation and supply	a. Electricity b. Nature of the electric current c. Concept of potential difference d. Electric motors and safety devices e. Electric heating and thermostats f. Pneumatic and hydraulic transmission g. Methods of power generation and supply	7	20
Unit III	Health and safety	After completion of unit Student should be with through knowledge on • Safe working practices in production floor	a. Company policies, documentation b. Solvents and adhesives safe working practices c. Fire dangers and prevention d. Machine safety, guards and protective equipment e. Shoe Industry hazards	8	30

			f. Safe working practices		
Unit IV	Environmental and legal considerations	After completion of unit Student should be with through knowledge on • ISO 14001 requirements and legal considerations	a. Environmental legislation b. ISO 14001 requirements c. Company policy, procedures and working manual d. Environmental concerns specific to the shoe industry e. Setting targets and objectives f. Measurement and control of pollution g. Review measure and corrective action h. International employment law relating to employment of children	8	30

COURSES / MODULE TEMPLATE

NOS /Module: Employability Skills

NOS /Module Code: MSME/ES/03

THEORY HOURS: 90 PRACTICAL HOURS: - THEORY MARKS: 100 PRACTICAL MARKS: -

Refer Standard Curriculum developed by NCVET. (https://nqr.gov.in/downloads/pdfs/90-hours_MC_Employability_Skills.pdf)