

GOVERNMENT POLYTECHNIC MUMBAI
 (Academically Autonomously Institute, Government of Maharashtra)
Teaching and Examination Scheme (P19)
With effect from AY 2019-20

Course Code	Course Title	Teaching Hours/Contact Hours				Cre dits	Examination Scheme (Marks)						
		L	P	TU	Total		Theory			PR	OR	TW	Total
							TH	TS1	TS2				
LG 19306	Footwear Fabrication-I	2	4	-	6	6	50	25	25	50*	-	50	200
LG 19404	Qcad (Mooc)	0	4#	-	4#	4	-	-	-	-	-	-	-
HU 19104	Enviormental Studies	0	2#	-	2#	2	-	-	-				
LG 19307	Fashion For Footwear	2	4	-	6	6	50	25	25	50	0	50	200
LG 19308	Leather Finishing	2	4	-	6	6	50	25	25	50*	0	0	150
LG 19309	Leather Goods Fabrication	2	4	-	6	6	50	25	25	50*	0	50	200
	TOTAL	08	22	-	30	30	200	100	100	200	0	150	750
Student Centered Activity(SCA)					05								
Total Contact Hours					35								

Programme: Diploma in Leather Goods and Footwear Technology (Sandwich Pattern)Term / Semester – IV

Abbreviations: L- Theory Lecture, P-Practical, TU-Tutorial, TH- Theory Paper TS1 & TS2- Term Tests, PR-Practical, OR-Oral, TW: Term Work (progressive assessment)

* Indicates assessment by External Examiner else internal assessment, # indicates Self, on- line learning Mode, @ indicates on line examination

Note: Duration of Examination--TS1&TS2 -1 hour , TH- 2 hours, PR/OR – 3 hours per batch , SCA- Library - 1 hour, Sports- 2 hours, Creative Activity-2 hours

Coordinator,
Curriculum Development,
Department of Leather Technology

In-Charge
Curriculum Development Cell

Head of Departments
Department of Leather Technology

Principal

Programme : Diploma in Leather Goods And Footwear Technology										
Course Code: LG 19306				Course Title: FOOTWEAR FABRICATION -I						
Compulsory / Optional:										
Teaching Scheme and Credits				Examination Scheme						
TH	PR	TU	Total	TH (2 Hrs 30Min)	TS1 (1 Hr)	TS2 (1Hr)	PR	OR	TW	Total
02	04	-	06	60	20	20	50*	-	50	200

Abbreviations: L- Theory Lecture, P-Practical, TU-Tutorial, TH- Theory Paper TS1 & TS2- Term Tests, PR-Practical, OR-Oral, TW: Term Work (progressive assessment) , * Indicates assessment by External Examiner else internal practical skill test , # indicates Self, on- line learning Mode, @ indicates on line examination

Note: For Minimum passing marks under various heads, refer, examination rule AR26. Two practical skill test are to be conducted. First skill test at midterm and second skill test at the end of the term.

Rationale:

This course is classified under the applied technology. Course Describe the facts, Concepts, principles & techniques of closed Footwear fabrication .The student get an idea and identification of finished upper leather and their Assortment

This course is widely growing technology due to this subject. Students can know the closed footwear upper designing technique with experiments for closed footwear fabrication; they will get the experience of construction for upper fabrication with use of different advance designing hand tools which are always utilize in Footwear Industries.

Course Outcomes: Student should be able to

CO1	Explain Human foot, last, Creation of various designing ,Pattern and Components for upper for closed footwear
CO2	Understand the purpose of various upper material, lining material reinforcement material accessories and grinders require for making upper
CO3	Understand the application of various machineries require for making closed footwear upper
CO4	Understand the application of pre assembling process with marking and Construction methodology for making closed footwear upper
CO5	Understand the application of assembling and post assembling process including Inspection for making closed footwear upper
CO6	Prepare bill of material and can Calculate the various costing methods for making upper

Unit No	Topics / Sub-topics
1	<p>1. Differentiate between human foot and Closed footwear Last</p> <p>1.1. Selection of various male modular last for male closed footwear-Derby ,oxford, Casual</p> <p>1.2. Selection of various female modular last for female closed footwear-peep toe shoe, gladiator shoe, Court shoe</p> <p>1.3. Introduction of Pattern designing-Copy designing ,creative designing ,Imagination designing</p> <p>1.4. Component-Vamps, Toe-caps, Quarters, Back straps ,Counter, Saddles , Facings, Tongues , apron ,mudguard</p> <p>Course Outcome: CO1 Teaching Hours:04hrs Marks: 08 (R- 04, U-04, A-00)</p>
2	<p>2. Assortment of various material</p> <p>2.1. Assortment of various material finished upper leather for making upper component-Full grain upper leather ,suede upper leather, Corrected grain Finished leather, Burnished leather, Foil finished leather, Split finished leather</p> <p>2.2. Assortment of various Lining leather for making upper component- Split, chrome lining Leather,</p> <p>2.3. Assortment of Non-leather lining material for making upper component-Unbleached canvas, Foam leather, Fabric lining ,Suede cloth</p> <p>2.4. Selection of Various Reinforcement material for making upper-Toe puff, Stiffener Steel Toe, Reinforcement tape, Fusing material,(backers), EVA sheet, Foam, sponge</p> <p>2.5. Selection of Various Accessories material for making upper- Eyelets, fittings.</p> <p>2.6. Selection of Various Grinders material for making upper- Cotton Thread, Nylon thread, Latex, neoprene Adhesive, Rubber Solution, Velcro, cable thread, buckles.</p> <p>2.7. Selection of Various finishing material for making upper-Wax, Polish, brush Lacquer, Dye Solution, Crape to remove adhesive, Types of emery paper.</p> <p>Course Outcome: CO1 Teaching Hours: 06hrs Marks: 08 (R- 04, U-04, A-00)</p>
3	<p>3. Machines for upper making</p> <p>3.1. Cutting and Clicking-Importance of clicking, Types of clicking (Manual and mechanical clicking)Method of Cutting , Hand Cutting , Press Cutting , Knives Cutting , Clicking Dies, Advantage and Disadvantages of clicking by hand or machine clicking</p> <p>3.2. Splitting machine-Object of Splitting ,Types of Splitting machine</p> <p>3.3. Skiving machine - Object of Skiving, Types of Skiving , Manual and machine skiving ,Advantages and disadvantages of hand and machine skiving</p> <p>3.4. Stamping machine -Object and use of stamping machine</p>

	<p>3.5. Eyeleting machine -Object and use of Eyeleting machine</p> <p>3.6. Types of Sewing machine- Object and use of Flatbed single and double needle stitching machine. Post bed single and double stitching machine , Computerized stitching machine ,Cylinder bed stitching machine , Embroidery stitching machine, Zigzag stitching machine -Strobel Stitching machine</p> <p>3.7. Safeties and maintenance of all kinds of machine for upper department</p> <p>Course Outcome: CO1 Teaching Hours: 06hrs Marks: 10 (R- 02, U-04, A-04)</p>
4	<p>4. Pre assembling– Upper Clicking, Checking of Components,</p> <p>4.1. Identification Marking during upper preparation -Advantages and disadvantages of marking ,</p> <p>4.2. Types of marking-Crayon Marking, Notch Marking, Match Marking, Colour Marking ,Lining Stamping ,Colour Tapes, Closing Marking ,Stitch Marking , Hand Mark ,Block Marking ,Prick Marking ,Press Punching</p> <p>4.3. Embossing and embossing die</p> <p>4.4. Types of Skiving – Lapped Skive, Folded Skive , Lasting Skive , Corner Skive, Matrix skive</p> <p>4.5. Edges and Top line Treatment- Raw edge, Burnished edge, Bold Edge, Underlay ,closed Seam, Cementing and folding , Edging , Folded Edges , Form- Folded Edge , French Bound Edge ,Run-on-Binding ,Hammer over Binding ,English Binding , Slip Beading , Bagged Top-Line , Ghillie top lines , collars</p> <p>Course Outcome: CO1 Teaching Hours: 06hrs Marks: 14 (R- 04, U-04, A-06)</p>
5	<p>5. Assembling –</p> <p>5.1. Upper department Flow chart ,Lay out of upper department</p> <p>5.2. Stitching - Stitch Formation ,Lock stitch , Chain stitch, Decorative Stitching ,Fancy Stitching , Cable Stitching , Glove Stitching , Top Stitching, Subsidiary Stitching , Operation ,Boxing or weaving ,Barring</p> <p>5.3. Seam-Variety types of Seaming -Closed Seam , Open Seam ,Silked Seam , Brooklyn Seam, Lapped Seam ,Butted Seam ,Welted Seam , Piped Seam , Bonded Seam , Welded Seam ,Moccasin Seam ,Sprung Seam</p> <p>5.4. Quality Controlling , check list of step wise Inspection and Quality testing-tensile test, Flexing endurance, Stich tear strength, Slit tear strength, defects</p> <p>5.5. Finishing process- thread trimming, finishing touch up ,Pairing ,sizes assortment, Packing, Dispatching</p> <p>Course Outcome: CO1 Teaching Hours: 04hrs Marks: 12 (R- 02, U-04, A-06)</p>
6	<p>6. Bill of material and costing</p> <p>6.1. Bill of material-list of various material ,job work, labor work, technical expense, machine charges, overhead expense</p> <p>6.2. Costing - Pre-assembling material Cost, Assembling material Cost, Post assembling material Cost, Finishing material Cost, Packaging material</p>

	Cost, Provisional Cost, Variable cost Fixed Cost, Marginal cost 6.3. wastage Course Outcome: CO1 Teaching Hours: 04hrs Marks:08 (R- 00, U-04, A-04)
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Suggested Specifications Table (Theory):

Unit No	Topic Title	Distribution of Theory Marks			
		R Level	U Level	A Level	Total Marks
1	Differentiate between human foot and Closed footwear Last	04	04	00	08
2	Assortment of various material	04	04	00	08
3	Machines for upper making	02	04	04	10
4	Pre assembling	04	04	06	14
5	Assembling	02	04	06	12
6	Bill of material and Costing	00	04	04	08
Total		16	24	20	60

List of experiments: Total 03

Sr. No.	Unit No	COs	Title of the Experiments	Hours
	1		Preparation of derby shoe upper	
1	1	CO1	Creation of various designing ,Pattern and Components for upper for closed footwear	02
2	1	CO2	Assortment of leather ,lining reinforcement material selection accessories and grinders	02
3	1	CO3	Selection of various machines for component making	02
4	1	CO4	Pre assembling process for making various upper components	06
5	1	CO5	Assembling of various components and inspection	06
6	1	CO6	Costing	02
				20
	2		Preparation of Oxford shoe upper	
7	2	CO1	Creation of various designing ,Pattern and Components for upper for closed footwear	02
8	2	CO2	Assortment of leather ,lining reinforcement material selection accessories and grinders	02
9	2	CO3	Selection of various machines for component making	02

10	2	CO4	Pre assembling process for making various upper components	06
11	2	CO5	Assembling of various components and inspection	06
12	2	CO6	Costing	02
				20
	3		Preparation of Slip on shoe upper	
13	3	CO1	Creation of various designing ,Pattern and Components for upper for closed footwear	02
14	3	CO2	Assortment of leather ,lining reinforcement material selection accessories and grinders	02
15	3	CO3	Selection of various machines for component making	02
16	3	CO4	Pre assembling process for making various upper components	06
17	3	CO5	Assembling of various components and inspection	06
18	3	CO6	Costing	02
				20
			TOTAL	60

Note: All the Experiments are compulsory.

References/ Books:

Sr. No.	Title	Author, Publisher, Edition and Year Of publication	ISBN
1	Handbook of Footwear Design and Manufacture	Publisher: Wood head Publishing Ltd (28 Aug. 2013)	ISBN10: 082479673X ISBN-13: 978-0824796730
2	Complete Book of Shoes	by Marta Morales (Author) Publisher: Firefly Books Ltd (12 Sept. 2013)	ISBN-10: 1770851240 ISBN-13: 978-1770851245
3	Shoe Design	Publisher: Independently published (September 17, 2018) Language: Italian	ISBN-13: 978-1720070436 ISBN-10: 1720070431
4	Fashionary Shoe Design: A Handbook for Footwear Designers	Hardcover – 6 Jan 2015	
5	Shoemaking and Creative Footwear Designs	Hardcover Publisher: Larsen and Keller Education, 2018	ISBN 10: 163549754X ISBN 13: 9781635497540
6	Compressive Footwear Technology	Somnath Ganguly, Published by Indian Leather Technologist association	ISBN 81-901423-0-5

E-References:

<https://www.seeandwear.com/blogs/fashion/top-10-shoe-brands-for-men-india>
<https://www.metroshoes.net/blog/2017/08/shoe-care-manual-formal-shoes/>
<https://www.youtube.com/watch?v=ROd1Acma64o>
<https://www.youtube.com/watch?v=EM-D4CQc5Ok>
https://www.youtube.com/watch?v=B232n_tFEII
<https://www.youtube.com/watch?v=iC0RoNws64Q>
<https://www.youtube.com/watch?v=M2hHzOdVMps>
<https://www.youtube.com/watch?v=BQTV-iUFAI0>

CO Vs PO and CO Vs PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	1	2	1	2	1	1	2	2	1
CO2	2	2	2	2	2	1	1	2	2	1
CO3	2	1	3	2	2	1	1	1	1	2
CO4	2	3	2	3	2	1	1	3	3	3
CO5	1	1	3	3	3	2	1	3	3	3
CO6	1	3	2	3	2	2	1	3	3	3

Industry Consultation Committee:

Sr. No	Name	Designation	Institute/Organisation
1	S.G.Darveshi	Lecturer	Leather Goods And Footwear Technology Dept. Government Polytechnic ,Mumbai
2	M.B.Pol	Head Of The Department.	Leather Technology Dept. Government Polytechnic ,Mumbai
3	Abhishek Waghmare	Proprietor	Khetar India Footwear Industries, Taloja M.I.D.C Navi Mumbai
4	Harish Mishra	Production Manager	Sahyog Fashion Export

Coordinator,
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I/C, Curriculum Development Cell

Principal



Programme : Diploma in CE/ME/EE/EC/CO/IT/IS/LG/LT										
Course Code: HU19102				Course Title: Environmental Studies						
Compulsory / Optional: Compulsory										
Teaching Scheme and Credits				Examination Scheme						
TH	PR	TU	Total	TH (2 Hrs)	TS1 (1 Hr)	TS2 (1Hr)	PR	OR	TW	Total
--	02	--	02	--	--	--	--	25	25	50

Abbreviations: L- Theory Lecture, P-Practical, TU-Tutorial, TH- Theory Paper TS1 & TS2- Term Tests, PR- Practical, OR-Oral, TW: Term Work (progressive assessment) , * Indicates assessment by External Examiner else internal practical skill test , # indicates Self, on- line learning Mode, @ indicates on line examination
 Note: For Minimum passing marks under various heads, refer, examination rule AR 26. Two practical skill test are to be conducted. First skill test at mid term and second skill test at the end of the term

Rationale:

Technicians working in industries or elsewhere essentially require the knowledge of environmental Studies so as to enable them to work and produce most efficient, economical and eco-friendly finished products. Solve various engineering problems applying ecosystem to produce eco – friendly products. Use relevant air and noise control method to solve domestic and industrial problems. Use relevant water and soil control method to solve domestic and industrial problems. To recognize relevant energy sources required for domestic and industrial problems. Solve local solid and e-waste problems.

Course Outcomes: Student should be able to

CO1	Understand the ecosystem and terminology and solve various engineering problems applying ecosystem knowledge to produce eco – friendly products.
CO2	Understand the suitable air, extent of noise pollution, and control measures and acts.
CO3	Understand the water and soil pollution, and control measures and acts.
CO4	Understand different renewable energy resources and efficient process of harvesting.
CO5	Understand Solid Waste Management, ISO 14000 & Environmental Management.

Course Content Details:

Unit No	Topics / Sub-topics
1	Ecosystem
	1.1 Structure of ecosystem, biotic & Abiotic components
	1.2 Food chain and food web
	1.3 Aquatic (Lentic and Lotic) and terrestrial ecosystem
	1.4 Carbon, Nitrogen, Sulphur, Phosphorus cycle
	1.5 Global warming -Causes, effects, process, Green House Effect, Ozone depletion
	Course Outcome: CO1 Teaching Hours : 6 hrs Marks: 03 (R- NA, U-NA, A- NA)
2	Air and Noise Pollution
	2.1 Definition of pollution and pollutant, Natural and manmade sources of air pollution (Refrigerants, I.C., Boiler)
	2.2 Air Pollutants: Types, Particulate Pollutants: Effects and control (Bag filter, Cyclone separator, Electrostatic Precipitator)
	2.3 Gaseous Pollution Control: Absorber, Catalytic Converter, Effects of air pollution due

	to Refrigerants, I.C., Boiler 2.4 Noise pollution: sources of pollution, measurement of pollution level, Effects of Noise pollution Course Outcome: CO2 Teaching Hours : 6 hrs Marks: 05 (R- NA, U-NA, A- NA)
3	Water and Soil Pollution 3.1 Sources of water pollution, Types of water pollutants, Characteristics of water pollutants Turbidity, pH, total suspended solids, total solids BOD and COD: Definition 3.2 Waste Water Treatment: Primary methods: sedimentation, froth floatation, Secondary methods: Activated sludge treatment, Trickling filter, Bioreactor, Tertiary Method: Membrane separation technology, RO (reverse osmosis) 3.3 Causes, Effects and Preventive measures of Soil Pollution : Causes – Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-waste Course Outcome:CO3 Teaching Hours : 6 hrs Marks: 05 (R- NA, U-NA, A- NA)
4	Renewable sources of Energy 4.1 Solar Energy: Basics of Solar energy. Flat plate collector (Liquid & Air). Theory of flat plate collector. Importance of coating. Advanced collector. Solar pond. Solar water heater, solar dryer. Solar stills. 4.2 Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion. Biogas production mechanism. Utilization and storage of biogas 4.3 Wind energy: Current status and future prospects of wind energy. Wind energy in India. Environmental benefits and problem of wind energy 4.4 New Energy Sources: Need of new sources. Different types new energy sources. Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion) Concept, origin and power plants of geothermal energy Course Outcome:CO4 Teaching Hours : 6 hrs Marks:05 (R- NA, U-NA, A- NA)
5	Solid Waste Management, ISO 14000 & Environmental Management 5.1 Solid waste generation- Sources and characteristics of : Municipal solid waste, E- waste, biomedical waste. 5.2 Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries. Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous waste 5.3 Air quality act 2004, air pollution control act 1981 and water pollution and control act1996. Structure and role of Central and state pollution control board. 5.4 Concept of Carbon Credit, Carbon Footprint. 5.5 Environmental management in fabrication industry. 5.6 ISO14000: Implementation in industries, Benefits. Course Outcome:CO5 Teaching Hours :8 hrs Marks:07 (R- NA, U-NA, A- NA)

List of tutorials:

Sr. No.	Unit No	COs	Title of the Experiments	Hours
1	1,2,3, 4,5	CO1,CO2, CO3,CO4, CO5	Prepare a write up on each unit (altogether 5 in number) that summarizes the whole unit and presents important points on it.	16
2	2,3	CO2,CO3	Visit to a local polluted site : Urban/Rural/Industrial/Agricultural and prepare a report based on visit.	4

3	4	CO4	Visit to biomass plant and prepare a report based on visit.	6
3	5	CO5	Visit to municipal solid waste management organization and prepare a report based on visit.	6
Total				32

References/ Books:

Sr. No.	Title	Author, Publisher, Edition and Year Of publication	ISBN
1	Environmental Studies	S.C. Sharma & M.P. Poonia Khanna Publishing House, New Delhi	ISBN: 978-93-86173-09-6
2	Understanding Chemistry	C.N.Rao Universities Press(India) Pvt. Ltd. 2011	ISBN:13-9788173712500
3	Waste water treatment for pollution control and reuse	Arceivala, Soli Asolekar, Shyam Mc-Graw Hill Education India Pvt. Ltd. New york, 2007	ISBN:978-07-062099
4	Elements of Environmental Pollution control	O.P.Gupta Khanna Publishing House, New Delhi	ISBN:13-9789382609667

E-References:

- 1) www.eco-prayer.org
- 2) www.teriin.org
- 3) www.cpcp.nic.in
- 4) www.cpcp.gov.in
- 5) www.indiaenvironmentportal.org.in
- 6) www.whatis.techtarget.com
- 7) www.sustainabledevelopment.un.org
- 8) www.conserve-energy-future.com

CO Vs PO and CO Vs PSO Mapping (Civil Engineering)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	3	3	3	--	--	1
CO2	3	3	2	2	3	3	3	--	1	1
CO3	3	3	2	2	3	3	3	--	1	1
CO4	3	3	2	2	3	3	3	--	1	1
CO5	3	3	2	2	3	3	3	--	1	1

CO Vs PO and CO Vs PSO Mapping (Mechanical Engineering)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	3	2	2	1	3	3	3	--	1

CO2	3	3	2	2	3	3	3	--	--
CO3	3	3	2	2	3	3	3	--	--
CO4	3	3	2	2	3	3	3	--	--
CO5	3	3	2	2	3	3	3	--	--

CO Vs PO and CO Vs PSO Mapping (Electrical Engineering)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	3	3	3	--	--	3
CO2	3	3	2	2	3	3	3	--	--	2
CO3	3	3	2	2	3	3	3	--	--	2
CO4	3	3	2	2	3	3	3	--	--	2
CO5	3	3	2	2	3	3	3	--	--	2

CO Vs PO and CO Vs PSO Mapping (Electronics Engineering)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	3	3	3	--	--	2
CO2	3	3	2	2	3	3	3	--	--	--
CO3	3	3	2	2	3	3	3	--	--	--
CO4	3	3	2	2	3	3	3	--	--	2
CO5	3	3	2	2	3	3	3	--	--	1

CO Vs PO and CO Vs PSO Mapping (Instrumentation Engineering)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	3	2	2	1	3	3	3	--	--
CO2	3	3	2	2	3	3	3	--	--
CO3	3	3	2	2	3	3	3	--	--
CO4	3	3	2	2	3	3	3	--	--
CO5	3	3	2	2	3	3	3	--	--

CO Vs PO and CO Vs PSO Mapping (Computer Engineering)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	3	3	3	--	--	--
CO2	3	3	2	2	3	3	3	--	--	--
CO3	3	3	2	2	3	3	3	--	--	--

CO4	3	3	2	2	3	3	3	--	--	--
CO5	3	3	2	2	3	3	3	--	--	--

CO Vs PO and CO Vs PSO Mapping (Information Technology)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	3	3	3	--	3	--
CO2	3	3	2	2	3	3	3	--	2	--
CO3	3	3	2	2	3	3	3	--	2	--
CO4	3	3	2	2	3	3	3	--	2	--
CO5	3	3	2	2	3	3	3	--	3	--

CO Vs PO and CO Vs PSO Mapping (Leather Technology)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	3	3	3	--	--	1
CO2	3	3	2	2	3	3	3	--	--	--
CO3	3	3	2	2	3	3	3	--	--	--
CO4	3	3	2	2	3	3	3	--	--	--
CO5	3	3	2	2	3	3	3	--	--	--

CO Vs PO and CO Vs PSO Mapping (Leather Goods & Footware Technology)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	3	3	3	--	--	1
CO2	3	3	2	2	3	3	3	--	--	--
CO3	3	3	2	2	3	3	3	--	--	--
CO4	3	3	2	2	3	3	3	--	--	--
CO5	3	3	2	2	3	3	3	--	--	--

Industry Consultation Committee:

Sr. No	Name	Designation	Institute/Organisation
1	Mr. Rohan Deokar	Deputy Engineer	MMRDA
2	Mr. Sanjay Kulkarni	Surveyor and Consultant	SRKulkarni Pvt.Firm
3	Mr. K.V. Kelgandre	Sr. Lecturer in Civil Engg.	K.J. Somaiya Polytechnic
4	Ms. S. M. Male	Sr. Lecturer in Civil Engg.	Govt. Polytechnic Mumbai

Coordinator,
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Department of Civil Engg.

Head of Department
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I/C, Curriculum Development Cell

Principal



Programme : Diploma in LEATEHR GOODS AND FOOTWEAR TECHNOLOGY										
Course Code: LG 19307				Course Title: FASHION FOR FOOTWEAR						
Compulsory / Optional: Compulsory										
Teaching Scheme and Credits				Examination Scheme						
TH	PR	TU	Total	TH (2 Hrs 30Min)	TS1 (1 Hr)	TS2 (1Hr)	PR	OR	TW	Total
02	04	-	06	60	20	20	50	-	50	200

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Note: For Minimum passing marks under various heads, refer, examination rule AR26. Two practical skill test are to be conducted. First skill test at midterm and second skill test at the end of the term

Rationale: This course is classified under the core technology; describe the facts and concepts of the Footwear designing. This course is widely growing technology due to this fashion. Students can know the measurement of foot and designing for footwear which are need of fashion in Footwear sector. This Course will provide students with an opportunity to develop the latest creative efficiently and effectively designing skill in open and closed footwear. This Course also help for itemize calculating costing

Course Outcomes: Student should be able to

CO1	Importance of free hand drawing , geometrical construction methodology , creative fashion for footwear
CO2	Understand the application and can handle various types of tools during the fashion for footwear construction
CO3	Proper measure the customize foot measurement for making footwear and last measurement
CO4	Create the footwear Design and sketches by foot measurement pattern on last for making footwear
CO5	Create the various pattern and components according to selected design
CO6	Calculate Bill of material and costing for of footwear

Course Content Details:

Unit No	Topics / Sub-topics
1	1. Principles of fashion for footwear 1.1. Concept of free hand drawing, Geometrical Construction ,Units and formulae for measurement 1.2. The Fundamental of footwear Design ,Designing concept of fashion for fashionable footwear, Methods of development of creativity 1.3. Colour combination for fashionable footwear 1.4. Creativity in Selection of material, accessories and grinders for fashion Designer and stylist, Change in fashion for footwear, , Winter & summer fashion 1.5. Choice of Material according to Availability, Area, Elasticity, Plasticity, Stretch ability, flexibility, Sole height and Thickness, height of Heel , Fastening and Elastic Gussets, Varieties of Fashionable Insole for open and closed footwear Course Outcome: CO1 Teaching Hours: 06 hrs. Marks: 10 (R- 04, U-06, A-00)
2	2. Tools 2.1. Footwear Designing Tools 2.2. Footwear Pattern Cutting Tools 2.3. footwear Fabrication Tools 2.4. Footwear Finishing Tools 2.5. Crafting tools Course Outcome: CO2 Teaching Hours : 04 hrs Marks:08 (R-02 , U-02 , A-04)
3	3. Foot measurement 3.1. The Function of Footwear for foot ,Change of foot shape , Standard technique of foot Measurement, Length-, ankle point ,foot toe shape , Instep point, 3.2. Sizes system-English Sizes, French sizes, American Sizes, Mondo point, fitting and Multi fitting 3.3. Importance of anatomical foot measurement-Flat foot, swollen foot, diabetic foot, slim foot, high axis foot, over length foot, abnormal foot , Course Outcome: CO 03 Teaching Hours : 04hrs Marks10 (R-02 , U- 04 , A- 04)
4	4. Importance of Last in foot Measurement for creation pattern 4.1. Material for last- fiber last ,wooden last, metal last, advantage and disadvantages of material of last, Use of Bottom plates in last 4.2. Types of last- Block Last, Hinge last, Solid Last, 4.3. Last Measurement points, Toe Springs, Heel length, Heel Height, Standard length, Waist point, Instep point. Ball Point, Joint Girth ,Inside profile ,Outside profile , , back height Relation of toe spring and Heel height for lasting operation 4.4. Importance chick points of last, 4.5. Difference between Last and Feet Course Outcome: CO4 Teaching Hours :06hrs Marks: 12 (R- 04 , U-04 , A-04)
5	5. Pattern and Components 5.1. Definitions of Component of various types of open and closed footwear 5.2. Description of basic Upper Component of open and Closed Footwear

	5.3. Description of basic Bottom Component of open and Closed Footwear 5.4. Pattern cutting for open footwear, Lasting Margin, Folding Margin 5.5. Pattern cutting for closed footwear 5.6. Mean Forme for shoe and Boot 5.7. Standard Forme for shoe and Boot 5.8. Grading of components 5.9. Sequence of Geometrical pattern making 5.10. Preparation of pre assembling programme chart Skiving Chart, Marking Chart, Stitching Chart, Folding Chart 5.11. Pivoting Pattern and Crimping Pattern Course Outcome: CO 05 Teaching Hours : 06 Marks:12 (R-04 , U-04 , A-04)
6	6. Bill of material and costing 6.1. Bill of material -list of various material ,job work, labor work, technical expense, machine charges, overhead expense 6.2. Costing - Pre-assembling material Cost, Assembling material Cost, Post assembling material Cost, Finishing material Cost, Packaging material Cost, Provisional Cost, Variable cost Fixed Cost, Marginal cost 6.3. wastage Course Outcome: CO 06 Teaching Hours : 04Marks:08 (R-02 , U-02 , A-04)

Suggested Specifications Table (Theory):

Unit No	Topic Title	Distribution of Theory Marks			
		R Level	U Level	A Level	Total Marks
1	Principles of fashion for footwear	04	06	00	10
2	Tools	02	02	04	08
3	Foot measurement	02	04	04	10
4	Importance of Last in foot Measurement for creation pattern	04	04	04	12
5	Pattern and Components	04	04	04	12
6	Costing for footwear manufacturing	02	02	04	08
Total		18	22	20	60

List of experiments: 03

Sr. No.	Unit No	COs	Title of the Experiments	Hours
	1		Preparation Of Designer Cut Edge upper Ladies Open Footwear with soft covering insole for senior citizen	
1		CO1	Selection of copy design for female cut edge open footwear and make creative design	02
2		CO2	Selection of tools require for pattern designing	02
3		CO3	Assortment of material leather ,lining reinforcement material selection accessories and grinders machineries as per the design	02
4		CO4	Select the require last for pattern making and Pre assembling process for making upper and bottom components according to foot measurement	04
5		CO5	Assemble the upper and components with each other in the sequence for closing article	06
6		CO6	Bill of material and costing	04
				20
	2		Preparation Of Designer Turn Edge male Open Footwear for diabetic patient	
7		CO1	Selection of copy design for female turn edge open footwear and make creative design	02
8		CO2	Selection of tools require for pattern designing	02
9		CO3	Assortment of material leather ,lining reinforcement material selection accessories and grinders machineries as per the design	02
10		CO4	Select the require last for pattern making and Pre assembling process for making upper and bottom components according to foot measurement	04
11		CO5	Assemble the upper and components with each other in the sequence for closing article	06
12		CO6	Bill of material and costing	04
				20
	3		Preparation Of Designer Customize closed footwear	
13		CO1	Selection of copy design for female turn edge open footwear and make creative design	02
14		CO2	Selection of tools require for pattern designing	02
15		CO3	Assortment of material leather ,lining reinforcement material selection accessories and grinders machineries as per the design	02
16		CO4	Select the require last for pattern making and Pre assembling process for making upper and bottom components according to foot measurement	04
17		CO4	Assemble the upper and components with each other in the sequence for closing article	06
18		CO6	Bill of material and costing	04
				20
		Total		60

Note: All the Experiments are compulsory and should map all units and Cos

References/ Books:

Sr. No.	Title	Author, Publisher, Edition and Year Of publication	ISBN
1	Handbook of Footwear Design and Manufacture	Publisher: Wood head Publishing Ltd (28 Aug. 2013)	ISBN10: 082479673X ISBN-13: 978-0824796730
2	Complete Book of Shoes	by Marta Morales (Author) Publisher: Firefly Books Ltd (12 Sept. 2013)	ISBN-10: 1770851240 ISBN-13: 978-1770851245
3	Shoe Design	Publisher: Independently published (September 17, 2018) Language: Italian	ISBN-13: 978-1720070436 ISBN-10: 1720070431
4	Text Book of footwear Manufacturing	Author-J.H. Thorton Publisher-The National Trade Press Ltd, London	
5	Shoemaking and Creative Footwear Designs	Hardcover Publisher: Larsen and Keller Education, 2018	ISBN 10: 163549754X ISBN 13: 9781635497540
6	Art of costing Tracing method	FDDI Author- Swayam Siddha	ISBN NO. 81-85634-31-9

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<https://www.metroshoes.net/blog/2017/08/shoe-care-manual-formal-shoes/>
<https://www.youtube.com/watch?v=ROd1Acma64o>
<https://www.youtube.com/watch?v=EM-D4CQc5Ok>
https://www.youtube.com/watch?v=B232n_tFEII
<https://www.youtube.com/watch?v=iC0RoNws64Q>
<https://www.youtube.com/watch?v=M2hHzOdVMps>
<https://www.youtube.com/watch?v=BQTV-iUFAI0>

CO Vs PO and CO Vs PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	1	2	1	2	1	1	2	2	1
CO2	2	2	2	2	2	1	1	2	2	1
CO3	2	1	3	2	2	1	1	1	1	2
CO4	2	3	2	3	2	1	1	3	3	3
CO5	1	1	3	3	3	2	1	3	3	3
CO6	1	3	2	3	2	2	1	3	3	3

Industry Consultation Committee:

Sr. No	Name	Designation	Institute/Organisation
1	S.G.Darveshi	Lecturer	Leather Goods And Footwear Technology Dept. Government Polytechnic ,Mumbai
2	M.B.Pol	Head Of The Department.	Leather Technology Dept. Government Polytechnic ,Mumbai
3	Abhishek Waghmare	Proprietor	Khetar India Footwear Industries, Taloja M.I.D.C Navi Mumbai
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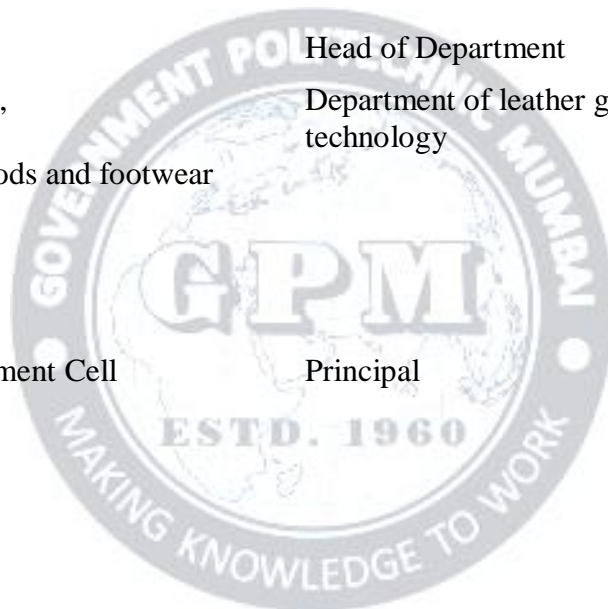
Department of leather goods and footwear
technology

Head of Department

Department of leather goods and footwear
technology

I/C, Curriculum Development Cell

Principal



Programme : Diploma in Leather Goods And Footwear Technology										
Course Code: LG 19308				Course Title: LEATHER FINISHING						
Compulsory / Optional: Compulsory										
Teaching Scheme and Credits				Examination Scheme						
TH	PR	TU	Total	TH (2 Hrs 30Min)	TS1 (1 Hr)	TS2 (1Hr)	PR	OR	TW	Total
02	04	-	06	60	20	20	50	-	-	150

Abbreviations: L- Theory Lecture, P-Practical, TU-Tutorial, TH- Theory Paper TS1 & TS2- Term Tests, PR-Practical, OR - Oral, TW: Term Work (progressive assessment), * Indicates assessment by External Examiner else internal practical skill test , # indicates Self, on- line learning Mode, @ indicates on line examination.

Note: For Minimum passing marks under various heads, refer, examination rule AR 26. Two practical skill test are to be conducted. First skill test at midterm and second skill test at the end of the term.

Rationale:

This course is classified under the applied technology. Course Describes, the facts, Concepts, principles & techniques of leather manufacturing after Crusting operation .The student get an idea of various mechanical and finishing applications on crust leather for various finishing operation according to gradation to become final finished leather.

There are various application are done during process with the use of various machineries referred as post wet end operation or finishing operation. Leather testing helps to understand the physical testing properties and chemical testing properties required according the need in the leather industries various properties for final finished leather. After completion of all the finishing operation leather will move for the preparation of various article in various leather sector.

Course Outcomes: Student should be able to

CO1	Understand the object of pre- finishing and finishing operation on crust leather according to the gradation (selection).
CO2	Understand to plan Mechanical operations and Role of Machine for wet end leather.
CO3	Decide the role of various finishing chemicals in finishing operation in efficient manner.
CO4	Confirmation of the various stages of process for, finishing and post finishing operation.
CO5	Describe the identify the require Physical & Chemical properties of finished leather for various leather sector.
CO6	Describe the identify the require finished leather for various leather sector according to their properties.

Unit No	Topics / Sub-topics
1	1. Object of pre- finishing and finishing operation according to gradation 1.1. Gradation and Selection of pre- finished leather 1.2. Information and uses of pre-finishing machines-Setting, Drying , Conditioning , Staking ,Toggling , Trimming ,Buffing , Snuffing 1.3. Selection of Grit Paper for making suede leather /Nubuck leather 1.4. Finishes-Protein finish ,Resin Finish , PU finish , Foil Finish ,

	Course Outcome: CO1 Teaching Hours: 04hrs Marks: 08 (R- 04, U-04, A-0)
2	2. Mechanical operations and Role of Machine for finishing operation 2.1. Finishing process machine- Spraying booth, Auto Spray Machine ,Drier, Curtain Coater (Gameta) 2.2. Post Finishing machine- Glazing Machine, Embossing and Plating Machine, Polishing Machine, Ironing Machine, Fini-Flex, Dry Drumming, Tumble Machine, Dry Shaving Machine, Measuring Machine. Course Outcome: CO2Teaching Hours : 04hrsMarks: 08(R- 04, U-04, A-00)
3	3. Role of various chemicals in finishing process – 3.1. Characteristics of protein finish leather 3.2. Characteristics of Resin finish leather 3.3. Characteristics of PU finish leather 3.4. Characteristics of Semi aniline and Aniline finish leather 3.5. Characteristic of Foil finish leather 3.6. List of the ingredients for finishing 3.7. Pigments- Classification of pigments-organic pigment ,Inorganic Pigment 3.8. Dye solution 3.9. Film forming materials- Protein binder, soft and medium soft Resin binders, wax emulsion, PU binder , Cross linker Waxes, Filler, Water based Lacquer , Thinner Based Lacquer 3.10. Methods of applications -Pad Coat, Brush Coat, Spray Coat 3.11. Formulations of applications, Base Coat, Middle Coat, Top Coat Course Outcome: CO3 Teaching Hours : 06hrs Marks: 12 (R- 04, U-04, A-04)
4	4. Process for pre finishing ,finishing and post finishing operation according to gradation 4.1. Selection of leather for finishing according gradation- 4.2. Protein finish leather 4.3. Resin finish leather 4.4. PU finish leather 4.5. Aniline finish leather 4.6. Semi Aniline finish leather 4.7. Foil finish leather 4.8. Fancy leather- Tie and die leather ,Antique leather, Boutique leather 4.9. Post finishing machine operation Course Outcome: CO4 Teaching Hours:04hrs Marks: 10 (R- 02, U-02, A-06)
5	5. Introduction of Physical & Chemical testing machineries for finished leather 5.1. Necessity and importance of Leather testing 5.2. List of Testing Machine 5.3. Physical Testing Equipment for Leather- Universal Strength tester / Istron, Lastometer, Wrinkle meter, Wet and Dry rub fastness tester, Elongation , Flexing test , Abrasive Tester for sole leather, Bottom Flexing Test (Ross flexing) , 5.4. Chemical Testing of Leather – Moisture Content, Apparent and Real Density, Shrinkage temp Test, Sole bonding Test, Waterproof Test, Water repulsion test, Chrome content , Total ash and soluble ash content, Free fat content Course Outcome: CO5 Teaching Hours : 06hrsMarks: 14 (R- 04, U-06, A04)

6	6. Finished leather for various leather sector
	6.1. Identification of physical characteristic of finished leather 6.2. Suede Leather, Nubuck Leather. Full grain Protein Finish Upper Leather, Resin Finish Upper Leather, PU Finish Upper Leather, Impregnated corrected grain finished leather, Napa Leather, Softy Leather, Burnish upper leathers, Split finish Leather, Split Leather, Full veg tanned sole leather, Upholstery Leather, Bag tanned Leather, Natural dry milled leather, Printed dry milled leather. Garment Leather , Suede Garment Leather, Gloving Leather , Lining Leather ,Tie and die leather ,Antique leather, Boutique leather Course Outcome: CO6 Teaching Hours :06hrs Marks: 08 (R- 04, U-04, A-00)

Suggested Specifications Table (Theory):

Unit No	Topic Title	Distribution of Theory Marks			
		R Level	U Level	A Level	Total Marks
1	Object of pre- finishing and finishing operation according to gradation	04	04	00	08
2	Mechanical operations and Role of Machine for finishing operation	04	04	00	08
3	Role of various chemicals finishing process	04	04	04	12
4	Process for pre finishing ,finishing and post finishing operation according to gradation	02	02	06	10
5	Physical & Chemical properties of finished leather	04	06	04	14
6	Finished leather for various leather sector	04	04	00	08
Total		22	24	14	60

No. Of the Total Experiment 03

Sr. No.	Unit No	COs	Title of the Experiments	Hours
	1		Preparation of resin finished Goat garment leather	
1	1	CO 1	Pre- finishing and finishing operation according to gradation	02
2	1	CO 2	Selection of Mechanical operations for pre finishing operation	02
3	1	CO 3	Selection of finishing process	02
4	1	CO 4	Selection of chemical for particular finishing process	02
5	1	CO 5	Application of finishing process in the sequence	08
6	1	CO 6	Application of post finishing operation and testing	04
				20

	2		Preparation of Resin finished Goat upper leather	
7	2	CO 1	Pre- finishing and finishing operation according to gradation	02
8	2	CO 2	Selection of Mechanical operations for pre finishing operation	02
9	2	CO 3	Selection of finishing process	02
10	2	CO 4	Selection of chemical for particular finishing process	02
11	2	CO 5	Application of finishing process in the sequence	08
12	2	CO 6	Application of post finishing operation and testing	04
				20
	3		Preparation of making fancy leather	
13	3	CO 1	Pre- finishing and finishing operation according to gradation	02
14	3	CO 2	Selection of Mechanical operations for pre finishing operation	02
15	3	CO 3	Selection of finishing process	02
16	3	CO 4	Selection of chemical for particular finishing process	02
17	3	CO 5	Application of finishing process in the sequence	08
18	3	CO 6	Application of post finishing operation and testing	04
				20
TOTAL				60

All the experiment are compulsory

References/ Books:

Sr. No.	Title	Author, Publisher, Edition and Year Of publication	ISBN
1	Theory And Practice of Leather Manufacturing	K T Sarkar Published by Author in Chennai in 1995	ISBN 10- 7901244321, 7901024321
2	Leather Technician's Handbook	J H Sharp house Leather Producers' Association (1 February 1972)	ISBN-10: 0950228508 ISBN-13: 978-950228501

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4. https://www.youtube.com/watch?v=lJnypKc2Y_M
5. <https://www.youtube.com/watch?v=XanRQJDgUxc>
6. <https://www.leather-dictionary.com/index.php/Leather>
7. <https://en.wikipedia.org/wiki/Leather>
8. http://www.survivorlibrary.com/library/leather_manufacture-a_practical_handbook_of_tanning_currying_and_chrome_leather_dressing_1906.pdf

CO Vs PO and CO Vs PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	1	1	3	2	1	1	1	1	1
CO2	1	1	1	2	2	1	1	1	2	2
CO3	2	2	1	1	2	1	1	1	1	2
CO4	1	3	3	3	2	1	1	3	3	3
CO5	1	3	3	3	2	2	1	3	3	3
CO6	1	3	3	3	2	2	1	3	3	3

Industry Consultation Committee:

Sr. No	Name	Designation	Institute/Organisation
1	S.G.Darveshi	Lecturer	Leather Goods And Footwear Technology Dept. Government Polytechnic ,Mumbai
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4	S. V. Pradhan	Consultant	Rajas Consultants, Mira road Dist Thane

Coordinator,

Curriculum Development,

Department of Leather Goods and Footwear Technology

Head of Department

Department of Leather Goods and Footwear Technology

I/C, Curriculum Development Cell

Principal

Programme : Diploma in Leather Goods And Footwear Technology										
Course Code: LG 19309				Course Title: LEATHER GOODS FABRICATION						
Compulsory / Optional: Compulsory										
Teaching Scheme and Credits				Examination Scheme						
TH	PR	TU	Total	TH (2 Hrs 30 Min)	TS1 (1 Hr)	TS2 (1Hr)	PR	OR	TW	Total
02	04	-	06	60	20	20	50	-	50	200

Abbreviations: L- Theory Lecture, P-Practical, TU-Tutorial, TH- Theory Paper TS1 & TS2- Term Tests, PR-Practical, OR-Oral, TW: Term Work (progressive assessment) , * Indicates assessment by External Examiner else internal practical skill test , # indicates Self, on- line learning Mode, @ indicates on line examination

Note: For Minimum passing marks under various heads, refer, examination rule AR 26. Two practical skill test are to be conducted. First skill test at midterm and second skill test at the end of the term

Rationale:

This course is classified under the applied technology. Course Describe the facts, Concepts, principles & techniques of leather goods fabrication. This course is widely growing technology due to this subject. Students can know the fabricating concept according to need and fashion and manufacturing technique which are useful for Leather goods Industry. They knowing the use of different fabricating tools and equipment which are utilize Leather goods Industry. They knowing the use of different tools and equipment, quality controlling which are utilize Leather goods Industry

Course Outcomes: Student should be able to

CO1	Understand the classification of leather goods
CO2	Understand the require machineries and their work for various Leather Goods fabrication
CO3	Explain the pre assembling operation by means of making pattern designing according to sample and make pre plan for assembling operation for various Leather Goods
CO4	Explain the assembling operation as per construction and flow chart according to fashion trend for Leather Goods fabrication
CO5	Explain the post assembling operation like bench work operation , finishing and packaging process in the fabrication of all types of Leather Goods
CO6	Finalize the selection of quality material for quality product and Calculate the cost of the product of various Leather Goods article

Unit No	Topics / Sub-topics
1	1. Classification of leather goods 1.1. Small Leather Goods- Pass port cover, Clutch Purse, Coin purse with flab wallets, Small money purse and pouch, Waist pouch , 1.2. Medium Leather Goods- Sag bag, Doctor or Medical Represented Bags, 1.3. Shopping bags, Laptop bag, Tiffin pouch, Sling bag, Personal carrying

	<p>weekend bag , Office bag , Ladies Shoulder bag,</p> <p>1.4. Heavy Leather Goods- Pilot bag, Customized bag ,Travelling Bag, Adventure Bag, Luggage Bag ,</p> <p>1.5. Sports Leather Goods- Sport bag, Gym Bag,</p> <p>1.6. Fancy leather Goods- Cosmetic case, handmade bag, Shanti Niketan leather Goods, Camera cover bag</p> <p>Course Outcome: CO1 Teaching Hours: 04 hrs. Marks: 08 (R- 04, U-04, A-00)</p>
2	<p>2. Leather Goods Machineries</p> <p>2.1. Pre assembling machineries- Hydraulic clicking press, , Splitting machine, Skiving machine, Strap cutting machine</p> <p>2.2. Assembling machineries-Sewing machines – Flat bed single and double sewing machine, Post bed single and double bed needle machine, Cylinder Bed Sewing machine , zigzag sewing machine, embroidery sewing machine,</p> <p>2.3. Bench work machineries-Edge staining machine, Straight edge folding and creasing machine, Riveting machine, Universal punching machine, Eyeleting machine, Button fitting machine</p> <p>2.4. Finishing machineries- Embossing machine, Gold embossing machine, Table polishing machine</p> <p>2.5. Precaution during machine operation</p> <p>2.6. Advantages of machine operation</p> <p>Course Outcome:CO2 Teaching Hours :06hrs Marks: 12 (R-04 , U-04 ,A-04)</p>
3	<p>3. Pre- Assembling Process</p> <p>3.1. Introduction to Designing and pattern making</p> <p>3.2. Key points to be remembered during pattern making</p> <p>3.3. Clicking pattern and Closing pattern</p> <p>3.4. Marking and cutting of pattern</p> <p>3.5. Assembling the pattern for trial</p> <p>3.6. Problems and remedies in pattern before production</p> <p>3.7. Chart for fabrication process</p> <p>3.8. Trial fabrication before production</p> <p>3.9. Lining attachment - Types of Lining, Edge lining, Full lining, Drop-in-lining, Edge Folding</p> <p>3.10. Gusset Fitting- Gussets making, Side Gussets, Continuous Gussets, Folded gussets, Handle making , Frame fixing</p> <p>3.11. Accessories Attachment-zip ,fastener, types of fitting , trolley attachment Types of piping</p> <p>Course Outcome: CO3 Teaching Hours :06hrs Marks:10 (R-04 , U-04, A-02)</p>
4	<p>4. Construction and Assembling Process</p> <p>4.1. Types of construction</p> <p>4.2. Turn-over edge Construction: (Fold-edge Construction)</p> <p>4.3. Butt-edge construction</p> <p>4.4. Molded construction</p> <p>4.5. Box-work construction</p>

	4.6. Stiffened Leather construction 4.7. Sequence flow chart operation of Medium Leather Goods Fabrication 4.8. Sequence flow chart operation of heavy Leather Goods Fabrication 4.9. Sequence flow chart operation of sport's Leather Goods Fabrication. 4.10. Sequence flow chart operation of fancy Leather Goods Fabrication Course Outcome: CO4 Teaching Hours :04hrs Marks:12 (R-04 , U-04, A-04)
5	5. Post Assembling Process- 5.1. Bench work operation- Staining, Creasing, Punching, Riveting, Eyeletting, Buttoning, Zip fastening, seam fastening, trolley attachment, piping attachment, Application of Adhesive, Carving and embossing, Molding for designing, Screen printing, Embroidery 5.2. Finishing process- edge treatment, touch up, polishing ,labeling, fishing ,packing dispatch Course Outcome: CO5 Teaching Hours:04hrs Marks: 08 (R-04, U-04 , A-00)
6	6. Quality controlling and costing 6.1. Pre assembling process 6.2. Assembling process 6.3. Post assembling process 6.4. Finishing and Packaging process 6.5. Quality controlling in production 6.6. Selection of Material 6.7. Section of Accessories 6.8. Selection of Grinders 6.9. Selection of Machines 6.10. Selection and responsibilities of technical person 6.11. Direct and indirect expense 6.12. Overhead expense 6.13. Wastage Course Outcome: CO6 Teaching Hours:06 hrs Marks:10(R-02,U-04, A-04)

Suggested Specifications Table (Theory):

Unit No	Topic Title	Distribution of Theory Marks			
		R Level	U Level	A Level	Total Marks
1	Classification of leather goods	04	04	00	08
2	Leather Goods Machineries	04	04	04	12
3	Pre- Assembling Process	04	04	02	10
4	Construction and Assembling Process	04	04	04	12
5	Post Assembling Process	04	04	00	08
6	Quality controlling and costing	02	04	04	10
Total		22	24	14	60

List of the Experiment: 03

Sr. No.	Unit No	COs	Title of the Experiments	Hours
1	1	CO1	Preparation of leather wallet with flab and visiting card by selection of creative design	02
2	1	CO2	Selection of machines ,tools, equipment for making article	02
3	1	CO3	Pre- assembling process and selection of all kind material ,	02
4	1	CO4	Finalization of construction and Assembling process	02
5	1	CO5	Post assembling process	08
6	1	CO6	Quality inspection and costing of product	04
				20
7	2	CO1	Preparation of leather big size passport Cover by selection of creative design	02
8	2	CO2	Selection of machines ,tools, equipment for making article	02
9	2	CO3	Pre- assembling process and selection of all kind material ,	02
10	2	CO4	Finalization of construction and Assembling process	02
11	2	CO5	Post assembling process	08
12	2	CO6	Quality inspection and costing of product	04
				20
13	3	CO1	Preparation of creative Non-leather medium leather goods	02
14	3	CO2	Selection of machines ,tools, equipment for making article	02
15	3	CO3	Pre- assembling process and selection of all kind material ,	02
16	3	CO4	Finalization of construction and Assembling process	02
17	3	CO5	Post assembling process	08
18	3	CO6	Quality inspection and costing of product	04
				20
			TOTAL	60

Note: All the Experiments are compulsory and should map all units and Cos. Remaining experiments are to be performed as per importance of the topic.

References/ Books:

Sr. No.	Title	Author, Publisher, Edition and Year Of publication	ISBN
1	Manual for leather goods	Uploaded by statesman	
2	Insider guideline for leather Crafting		ISBN-13 : 9781497203464
3	Leatherwork For Beginners: Your Practical Guide to Leather crafting	Kindle Edition via Amazon	ISBN-10: 1542835712; ISBN-13: 978-1542835718;
4	Making Leather Handbags and Other Stylish Accessories	Publisher: Rockport Publishers Inc. (29 October 2004) Language: English	<ul style="list-style-type: none"> • ISBN-10: 1592530761 • ISBN-13: 978-1592530762
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6	Handmade Leather Bags & Accessories [Paperback]	Publication Date 2013/11 Publisher- Design Originals (US)	ISBN 9781574217162
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CO VsPO and CO Vs PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	2	3	2	3	1	1	2	1	1	1
CO2	2	3	1	3	2	2	1	1	1	1
CO3	2	3	3	2	1	2	2	1	2	2
CO4	1	2	1	3	2	1	1	2	1	1
CO5	2	3	3	2	1	1	1	2	1	1
CO6	1	1	2	2	2	1	1	1	1	1

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