

**Maulana Abul Kalam Azad University of Technology, West Bengal**  
*(Formerly West Bengal University of Technology)*  
**Syllabus for B. Tech in Leather Technology**  
 (Applicable from the academic session 2018-2019)  
**Semester-VIII**

<b>HU 801A Organisational Behaviour / Project Management</b>
<b>Organisational Behaviour:</b>
1. Organizational Behaviour: Definition, Importance, Historical Background, Fundamental Concepts of OB, Challenges and Opportunities for OB.
2. Personality and Attitudes: Meaning of personality, Personality Determinants and Traits, Development of Personality, Types of Attitudes, Job Satisfaction.
3. Perception: Definition, Nature and Importance, Factors influencing Perception, Perceptual Selectivity, Link between Perception and Decision Making.
4. Motivation: Definition, Theories of Motivation - Maslow's Hierarchy of Needs Theory, McGregor's Theory X & Y, Herzberg's Motivation-Hygiene Theory, Alderfer's ERG Theory, McClelland's Theory of Needs, Vroom's Expectancy Theory.
5. Group Behaviour: Characteristics of Group, Types of Groups, Stages of Group Development, Group Decision Making.
6. Communication: Communication Process, Direction of Communication, Barriers to Effective Communication. [2]
7. Leadership: Definition, Importance, Theories of Leadership Styles.
8. Organizational Politics: Definition, Factors contributing to Political Behaviour.
9. Conflict Management: Traditional vis-a-vis Modern View of Conflict, Functional and Dysfunctional Conflict, Conflict, Process, Negotiation – Bargaining Strategies, Negotiation Process.
10. Organizational Design: Various Organizational Structures and their Effects on Human Behaviour, Concepts of Organizational Climate and Organizational Culture.
References:
1. Robbins, S. P. & Judge, T.A.: Organizational Behavior, Pearson Education, 15th Edn.
2. Luthans, Fred: Organizational Behavior, McGraw Hill, 12th Edn.
3. Shukla, Madhukar: Understanding Organizations – Organizational Theory & Practice in India, PHI
4. Fincham, R. & Rhodes, P.: Principles of Organizational Behaviour, OUP, 4th Edn.
5. Hersey, P., Blanchard, K.H., Johnson, D.E.- Management of Organizational Behavior Leading Human Resources, PHI, 10th Edn.
6. Premvir Kapoor, Principles of Management, Khanna Publishing House, New Delhi (2019)

**Or**

<b>HU801B Project Management</b>
1. Project Management Concepts: Concept and Characteristics of a Project, Importance of Project Management.
2. Project Planning: Project Evaluation, Financial Sources, Feasibility Studies.
3. Project Scheduling: Importance of Project Scheduling, Work Breakdown Structure and Organization Breakdown Structure, Scheduling Techniques – Gantt Chart and LOB, Network Analysis – CPM/PERT.
4. Time Cost Trade-off Analysis – Optimum Project Duration.
5. Resource Allocation and Leveling.
6. Project Life Cycle.
7. Project Cost – Capital & Operating Costs, Project Life Cycle Costing, Project Cost Reduction Methods.
8. Project Quality Management: Concept of Project Quality, TQM in Projects, Project Audit.
9. Software Project Characteristics and Management
10. IT in Projects: Overview of types of Softwares for Projects, Major Features of Project Management Softwares like MS Project, Criterion for Software Selection.
References:
1. Gopalkrishnan P. and Rama Mmoorthy: Text Book of Project Management, Macmillan
2. Nicholas John M.: Project Management for Business and Technology – Principles and Practice, Prentice Hall India, 2nd Edn.

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3. Levy Ferdinand K., Wiest Jerome D.: A Management Guide to PERT/CPM with GERT/PDM/DCPM and other networks, Prentice Hall India, 2nd Edn.
4. Mantel Jr., Meredith J. R., Shafer S. M., Sutton M. M., Gopalan M. R.: Project Management: Core Text Book, Wiley India, 1st Indian Edn.
5. Maylor H.: Project Management, Pearson, 3rd Edn.
6. Nagarajan K.: Project Management, New Age International Publishers, 5th Edn.
7. Kelkar. S.A, Sotware Project Management: A concise Study, 2nd Ed., PHI

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<b>LT 801 Plant Layout and Entrepreneurship for Leather Sector</b>
<b>Group A</b>
<b>Plant Layout:</b>
Internal transport, safety, water and steam distribution, drainage and disposals in tannery, Layout of tannery pits, drums, paddles and machines, Maintenance in tannery, Automation in tannery.
Introduction to Plant Layout; Scope and Importance; Factors affecting Plant Layout; Approach to Designing, Organisation for layout; Data Acquisition and Analysis for basic layout; Planning for Layout, Developing and Installation of the Layout, Case Studies of plant layout. Terms of reference, background of the project, background of the organisation and status now and foreseen, location and suitability- capacity and target decision, building and shed etc., study of water, electricity, storage facilities and other environmental conditions, Study of pollution control systems, study of availability of raw materials and proposed arrangement, determination of product mix, analytical study of raw material/ chemical/ product mix/ capacity, study of technical capabilities and input, types of machines required- both indigenous and imported, analysis of quality of machines making end products and keeping provision for flexibility, study of established machine manufacturer, appropriate charges of various operations per piece and output, study of organisational structure and manpower, marketing and market survey, total capital requirement, means of financing, cost estimation of buildings, scheme wise estimate of building, manpower requirement, wages calculation (direct wages) , management/staff requirement (including fringe benefits), indirect salary and wages, calculation of total estimated overheads, estimation of Break-Even points, assumption of projected profitability, list of plant and equipment and prices thereof, energy requirements and capacity of plant & equipment, boilers, estimated electrical installation, statement of projected profitability, details of taxation, projected cash flow statement, details of depreciation (preparation of cost of running individual machines), Set up of industrial characteristics: production parameters, structural parameters, input parameters etc.
Key Co-efficient: Productivity/man, yield in terms of flow space, yield per hide, power factor, consumption of chemicals, consumption of fuel, consumption of electricity, unit consumption of chemicals, hides/skins per worker, output per worker in terms of weight, availability of electricity from plant generators, water consumption, water consumption per kg. of input, transformation, weight of individual machines, output of machines, boiler output in respect to hides/ kg., relationship to flow space to heating area of boilers, output in terms of flow space, relationship of flow space to horsepower, processing capacity of the horsepower installation, output of the compressors, relationship of water consumption to flow space, relationship of drum capacity to flow space. Hydraulic & pneumatic steering mechanism for leather machinery. Air compressors, blowers and dust control equipment used in tannery, Drying mechanism and dryers used in tannery.
<b>Part B</b>
<b>Entrepreneurship for Leather Sector:</b>
Global Leather and Allied Industries:
Concepts and Fundamental Principles in global leather -Factors influencing business environment, Opportunity assessment, Business forecasting and prospective in leather sector -Leather as an economic and export opportunity sector -Influence of national and international environment on the sustainability of the leather sector
Venture Planning and Development as Applied to Leather and Allied Sector
Resource planning, Product and process selection criteria - Market segmentation and selection -Investment strategies, Business financing systems, Financial analysis for investment decision - Policy issues and legal clearances -Venture planning in tanneries, shoe units, chemical units and leather garments and goods units - Return on investments in leather sector - Financial sensitivity analysis for investments in the leather sector as applied in industrial leather sector.
Techno -Economic Feasibility Reports (TEFR) for Leather and Allied Sector
Components of TEFR -size of projects,Project costing -Selection and means of finance -cash-flow projections -Costing and pricing -Implementation schedules -PERT and related project scheduling charts -TEFR for tannery, shoe plants, leather chemical, leather garments and leather goods units
Resource Management and Production Planning for Leather and Allied Sector
Material and money flow -Labour management -Principles of production management -TQM concepts -ISO and related certification methods -Purchase management in leather sector -Credit financing and labour issues in leather sector - Productivity bottlenecks in tanneries and shoe plants and debottlenecking strategies -Inventory control measures for leather sector.
Operations research -time-motion studies -Principles of time management -Management information system -Intranet and Internet communication and its relevance in managing enterprises -Factors concerning system productivity in leather sector

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Global Leather Markets, Market demand assessment techniques -Taxation and internal revenue issues -Market forecasting tools and techniques -Brand building -Export -import guidelines and trade issues - Market sensitivity analysis -Global trade in leather inter-country comparison of strengths and weaknesses at market place -WTO and related issues influencing leather -Eco-criteria and its influence in leather market -Forecasting domestic market for leather products and market driven planning of an enterprise in leather sector.
Reference books:
1.Brandt, Steven C., The 10 Commandments for Building a Growth Company, Third Edition, Macmillan Business Books, Delhi, 1977
2. Bhide, Amar V., The Origin and Evolution of New Businesses, Oxford University Press, New York, 2000.
3. Desai, Vasant, Small Scale Enterprises Vols. 1-12, Mumbai, Himalaya Publishing House. (Latest edition).
4.Dollinger, Mare J., Entrepreneurship: Strategies and Resources, Illinois, Irwin, 1955.
5.Holt, David H., Entrepreneurship: New Venture Creation, Prentice-Hall of India, New Delhi, latest Edition.
6.Panda, Shiba Charan, Entrepreneurship Development, New Delhi, Anmol Publications. (Latest Editions)
7.Patel, V. G., The Seven Business Crises and How to Beat Them, Tata-McGraw, New Delhi, 1995.
8.SIDBI Report on Small Scale Industries Sector (Latest Editions)

<b>LT 802 Technology of Animal and Tannery Byproducts Utilization</b>
<b>Animal &amp; Tannery Byproducts Utilization</b>
Types of animal byproducts - from abattoirs, meat processing plants, poultry, fishing and other sources including fallen animals. Present methods of collection, processing and utilisation in developing countries vis - a - vis developed countries: conservation techniques and concept of two tier technology. Protein meals from animal by-products including fallen animals and their significance in livestock feeds. Bone products and their utilisation. Keratinous proteins - various sources keratinous based products and their uses.
<b>ANIMAL BLOOD, ITS PRODUCTS AND THEIR UTILISATION</b>
Alimentary tract and its processing into various products. Present status of the industry in the country. Pet foods methods of preparation in brief.
<b>COLLECTION AND CONSERVATION OF ORGANS AND GLANDS FROM SLAUGHTERED ANIMALS : POSSIBLE SCOPE OF THEIR UTILISATION</b>
Anaerobic digestion, its significance for the preparation of animal feed, fuel gas, fertilizer, etc. Quality control including microbiological aspects of products processed from animal by products.
<b>PRESENT INDUSTRIAL STATUS OF VARIOUS BY-PRODUCTS IN THE COUNTRY</b>
Process studies on
a. Glue making from tannery wastes
b. Bone glue and deproteinisation of bone
c. Horn and hoof meal
d. Protein meals by different methods
References:
1. Burnham, F. " Rendering - the invisible industry ", Aero Publishers, Inc., Fallbrook, CA 92028, 1978.
2. Mann, I. " Processing and Utilisation of animal by-products ", Food and Agriculture organisation, Rome, 1962.
3. Scaria, K.J., Mahendrakumar and Divakaran, S. " Animal by-Products - processing and utilisation ", Central Leather Research Institute, Madras, 1981.
4. Taiganides, E.P. " Animal Wastes Applied Science ", Publishers Ltd., Essex, 1977.
5. Mahendrakumar, " Hand Book of rural technology for the processing of animal by-products ", FAO Agricultural Services Bulletin 79, Food and Agriculture Organisation.
6. Divakaran, S. " Animal Blood - Processing and utilisation Food and Agriculture Organisation ", Rome, 1978.

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<b>HU 891 Design Lab</b>
A. Detailed manufacturing processes of the following leathers with the chemistry behind every unit operation. The processes would commence from raw hides & skins i.e. from beam house operations to finishing operations. Each unit operation should include the controlling factors and checkpoints in details.
1. Fancy Glove Leather.
2. Waterproof Glove Leather.
3. Heat resistant Glove Leather.
4. Glace Kid Leather.
5. Cow Suede Leather.
6. Goat Suede Waterproof Leather (full chrome/semi chrome).
7. Cow Nubuck Upper Leather .
8. Cow Nubuck Garment Leather .
9. Brush – Off Upper Leather .
10. Cow Garment Nappa Leather .
11. Buffalo Garment Nappa Leather .
12. Goat Garment Leather .
13. Cow Shoe Nappa Leather .
14. Oil Pull – Up Leather .
15. Crackled Finished Split Leather .
16. Split Suede Water Proof Leather .
17. Buffalo Water Proof Leather .
18. Chrome Retanned Foot Ball Leather .
19. Stain Resistant Cow Upholstery Leather for furniture.
20. Buffalo Antifogging Upholstery Leather for automobile use..
21. Vegetable Tanned Lining Leather .
22. Chrome Tanned Goat Lining Leather .
23. Vegetable Tanned Sole Leather .
24. Chrome Tanned Sole Leather .
25. Antique Bag Leather .
26. Sheep Washable Garment Nappa .
27. Shrunken Grain Leather .
28. Drymilled Leather .
29. Drum Dyed leather .
30. Corrected Grain Leather .
31. Finished Split Leather .
32. Glaze Finish .
33. Chamois leather.
34. Harness and saddlery leather.
35. Dog chew.
<b>B. Design of pilot effluent treatment Plant</b>
<b>C. Model solar powered leather and leather goods unit</b>
<b>D. Design of innovative eco - friendly bio leather and leather products</b>

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<b>LT 881 Project</b>
<b>Various projects based on industrial requirement (Done in industry itself or in-house)</b>

<b>LT 882 Grand Viva</b>
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