Knitting Technology
6th Semester
6.1. GENERIC SKILLS AND ENTREPRENEURSHIP DEVELOPMENT

RATIONALE

Generic Skills and Entrepreneurship Development is one of the courses from “Human Science” subject area. Generic skills have emerged as an important component of employability skills, which enable an individual to become and remain employable over lifetime and to lead happy and prosperous life. Entrepreneurship development aim at developing conceptual understanding for setting-up one’s own business venture/enterprise. This aspect of Human Resource Development has become equally important in the era, when wage employment prospects have become meager.

Both the subject areas are supplementary to each other and soft skills are required to be developed in diploma passouts for enhancing their employability and self confidence.

DETAILED CONTENTS

1. Introduction to Generic Skills (4 hrs)
   9.1 Importance of Generic Skill Development (GSD)
   1.2 Global and Local Scenario of GSD
   1.3 Life Long Learning (LLL) and associated importance of GSD.

2. Managing Self (8 hrs)
   2.5 Knowing Self for Self Development
      – Self-concept, personality, traits, multiple intelligence such as language intelligence, numerical intelligence, psychological intelligence etc.
   2.6 Managing Self - Physical
      – Personal grooming, Health, Hygiene, Time Management
   2.7 Managing Self – Intellectual development
      • Information Search: Sources of information
      • Reading: Purpose of reading, different styles of reading, techniques of systematic reading.
      • Note Taking: Importance of note taking, techniques of note taking
      • Writing: Writing a rough draft, review and final draft.
   2.8 Managing Self – Psychological
      • Stress, Emotions, Anxiety-concepts and significance
      • Techniques to manage the above
3. Managing in Team

3.4 Team - definition, hierarchy, team dynamics
3.5 Team related skills- sympathy, empathy, co-operation, concern, lead and negotiate, work well with people from culturally diverse background
3.6 Communication in group - conversation and listening skills

4. Task Management

4.1 Task Initiation, Task Planning, Task execution, Task close out
4.2 Exercises/case studies on task planning towards development of skills for task management

5. Problem Solving

5.1 Prerequisites of problem solving- meaningful learning, ability to apply knowledge in problem solving
5.2 Different approaches for problem solving.
5.3 Steps followed in problem solving.
5.4 Exercises/case studies on problem solving.

6. Entrepreneurship

6.2 Introduction

- Concept/ Meaning and its need
- Competencies/ qualities of an entrepreneur
- Entrepreneurial Support System e.g., District Industry Centres (DICs), Commercial Banks, State Financial Corporations, Small Industries Service Institute (SISIs), Small Industries Development Bank of India (SIDBI), National Bank of Agriculture and Rural Development (NABARD), National Small Industries Corporation (NSIC) and other relevant institutions/organizations at State/National level.

6.2 Market Survey and Opportunity Identification (Business Planning)

- How to start a small scale industry
- Procedures for registration of small-scale industry
- List of items reserved for exclusive manufacture in small-scale industry
- Assessment of demand and supply in potential areas of growth.
- Understanding business opportunity
- Considerations in product selection
- Data collection for setting up small ventures.
6.3 Project Report Preparation
- Preliminary Project Report
- Techno-Economic Feasibility Report
- Exercises regarding “Project Report Writing” for small projects

INSTRUCTIONAL STRATEGY

This subject will require a blend of different teaching and learning methods beginning with lecture method. Some of the topics may be taught using question answer, assignment, case studies or seminar. In addition, expert lectures may be arranged from within the institution or from management organizations. Conceptual understanding of Entrepreneurship, inputs by teachers and outside experts will expose the students so as to facilitate in starting ones own business venture/enterprise. The teacher will discuss success stories and case studies with students, which in turn, will develop managerial qualities in the students. There may be guest lectures by successful diploma holding entrepreneurs and field visits also. The students may also be provided relevant text material and handouts.

RECOMMENDED BOOKS

2. Lifelong learning, Policy Brief (www.oecd.org)
3. Lifelong learning in Global Knowledge Economy, Challenge for Developing Countries – World Bank Publication
4. Towards Knowledge Society, UNESCO Paris Publication
5. Your Personal Pinnacle of Success by DD Sharma, Sultan Chand and Sons, New Delhi
6. Human Learning, Ormrod
7. A Handbook of Entrepreneurship, Edited by BS Rathore and Dr JS Saini; Aapga Publications, Panchkula (Haryana)
8. Entrepreneurship Development by CB Gupta and P Srinivasan, Sultan Chand and Sons, New Delhi
9. Handbook of Small Scale Industry by PM Bhandari

SUGGESTED DISTRIBUTION OF MARKS

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6.2 GARMENT MANUFACTURING TECHNOLOGY-II

RATIONAL

Knitted fabric is used in the production of various knitted garments. Knitted fabric require special handling while cutting and stitching. So students should have knowledge of making garments. Hence the subject.

DETAILED CONTENTS

16 Methods of producing knitted garments (fully cut, stitch shaped cut, fully fashioned, integral).

17 Fully Cut Garments method in detail.

18 Cut Stitch shaped Garments method in detail.

19 Line and curve effects.

20 Common knitted garment collar styles.

21 Different types of knitted outerwear garments and their design.

22 General study about Linking machine.

23 Handling concepts of fabrics and garments with approaches to increase productivity

24 Quality control during knitted fabric assembly while spreading, cutting, sewing and final inspection.
- Definition
- Functions of merchandising division
- Role and responsibilities of a merchandiser
- Different types of buyers
- Communication with buyers
- Awareness of current market trends
- Product development
LIST OF PRACTICALS

1. Size charts of various outer wear garments.
2. Drafting layout of a garment and cutting one sample (trial)
3. Drafting of slipovers, pullovers, sports shirts, lady Coaty, pullovers, cardigans, tracksuits, children wears and fashioned style garments of knitted fabrics.
4. Stitching and preparing finishing with machines.
5. Their sewing, linking, locking, seaming, & pressing processes.
6. Cutting and making up of Pull over, V. Neck, Round neck pullovers.
7. Cutting and making up of Reglan sleeve pullovers, ladies coaty with round neck front open.
8. Board pressing of outer wear garments.

INSTRUCTIONAL STRATEGY

Use of audiovisual aids should be made to show specialized operations. Expose the students to real life problems. Stress should be given to acquaint the students with relevant industrial practices.

RECOMMENDED BOOKS

1. Knitted Clothing Technology by Bracken Berry; Blackwell Publication Ltd.
2. Introduction to Clothing Manufacture by Cooklin
4. The Technology of Clothing Manufacture by Carr & Latham
5. Pattern Grading for Women’s Outerwear by Cooklin

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6.3. PRODUCTION PLANNING AND MANAGEMENT

RATIONALE

Diploma holders in Textile Processing/Knitting Technology are responsible for production planning and management. They are also required to ensure maintenance of equipment for better utilization of resources. For this purpose, knowledge and skill about these topics needs to be imparted to them. This subject aims at development of competencies to prepare material, equipment and manpower schedules.

DETAILED CONTENTS

1. Introduction
   Types of production – Mass production, Job production and Batch Production. Material planning and allocation, Process Planning and flow chart, production control, control and record keeping regarding Manpower material and machines. (04 hrs)

2. Inventory Control
   Need for Inventory control, levels in Inventory control. Material Handling and its importance in Textile industry, Handling of dyes, chemicals - methods and precautions, housekeeping. (08 hrs)

3. Cost Estimation:
   Introduction and functions of Cost estimation, estimation procedure, Elements of cost (04 hrs)

4. Plant Layout
   Concept of Plant layout, Importance of Site selection, Type of layout (process, product and combination type) Factors affecting plant layout. Introduction to Balancing theory; Balance control, balancing exercise for processing/knitting/garment industries. (12 hrs)

5. Standards and Codes :- (Brief study) (10 hrs)
National and International Code,
ISO 9000-Concept and its implications
Principle of Total Quality Management
5S application in Apparel Industry
Application of seven quality control tools in Apparel Industry
Fabric 4 point inspection process

6. Accidental and safety measures
   Types of accidents – fire, mechanical and chemical accidents
   Common source of different types of accidents and their prevention

7. Need and Scope of suitable ventilation, light system in process
   house/knitting industry

INSTRUCTIONAL STRATEGY

The teacher is expected to tell the students the applications of this subject area in various fields. Emphasis should be laid on practical examples.

RECOMMENDED BOOKS

1. Health Hazards in Textile Mills by NITRA
2. Dye House Management, Colour Publications, Mumbai
7. Introduction to production management, Blackwell Science Ltd.
8. Testing and Quality Management, V.K. Kothari, IAFL Publication, New Delhi

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6.4 ADVANCE MACHINE TECHNOLOGY

RATIONALE

Diploma holders have to handle computerized knitting machines in industry. Technology is changing day by day so diploma holders should have knowledge in advance technology available in Knitting Industry. Hence this subject.

DETAILED CONTENTS

1. Modern Knitting Machines:- Salient features of modern knitting machines. 2
2. Use of electronics and computers in knitting machines. 1
3. Electro-magnet needle selection mechanism 2
4. Adjustment & setting of G.S.M. 1
5. Various features of Computer control Flat Knitting machines. 2
6. Various features of Computer control Circular Knitting machines. 2
7. Cam Set of Computerized Flat Knitting machine. 3
8. Cam Set of Computerized Circular Knitting machine 3
9. Function and advantage of Presser Foot and Sinkers in Computerised Flat Knitting machine. 2
10. Concept of multi carriage and tendem system of computer control flat machines. 2
11. Knitting instructions & machine programming. 5
12. Types of computerized knitting machines both flat and circular. 2
13. Maintenance of computerized knitting machines. 2
14. Quality improvement of Knitted fabric during knitting at different stages. 2
15. How fibre fly can be reduced on circular knitting machines. 1
LIST OF PRACTICALS

1. Identification of different parts of computerized knitting machines.
2. Operation and handling of computerized knitting machines.
3. Awareness of different stop motions of computerized knitting machine and their operation.
4. Cam Set of Computerised Flat Knitting machines and needle path different knitting actions during Knit, miss, tucking and transferring of needles.
5. Cam Set of Computerised Circular Knitting machine.
6. The structure of needle bed and the position of knitting elements of computer flat machine.
7. Preparation and loading of design in controller of machine.
8. Setting of stitch quality, length and width of fabric on these machines.
10. Maintenance of computerized knitting machine.
11. Practical on computer and related machines where-ever available in industry.
12. Latest comb machines to pull the fabric down & sub rollers and main roller still remain with this function. In still, Shima Seiki (All latest computerized machines)

INSTRUCTIONAL STRATEGY

Use of audiovisual aids should be made to show specialized operations. Expose the students to real life problems. Stress should be given to acquaint the students with relevant industrial practices.

RECOMMENDED BOOKS

1. Knitting technology by D.B. Ajgoankar; Universal Publication
2. Flat Knitting by Samuel Raz; Meisenback, GmbH Bombay Publication.
3. Knitting Technology by David J Spencer
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6.5 PROJECT WORK

**RATIONALE**

The practical training cum project work is intended to place students for project oriented practical training in actual work situations for the stipulated period with a view to:

i) Develop understanding regarding the size and scale of operations and nature of field work in which students are going to play their role after completing the courses of study.

ii) Develop understanding of subject based knowledge given in the class room in the context of its application at work places.

iii) Develop first hand experience and confidence amongst the students to enable them to use and apply polytechnic/institute based knowledge and skills to solve practical problems in the world of work.

iv) Develop special skills and abilities like interpersonal skills, communication skills, attitudes and values.

This practical training cum project work should not be considered as merely conventional industrial training in which students are sent at work places with minimal supervision. This experience is required to be planned and supervised on regular basis by the polytechnic faculty. For the fulfillment of above objectives, polytechnic may establish close linkage with 8-10 relevant organization for providing such an experience. It is necessary that each organization is visited well in advance and activities to be performed by students are well defined. The chosen activities should be such which are of curricular interest to students and of professional value to industrial/field organizations. Each teacher is expected to supervise and guide 5-6 students.

Effort should be made to identify actual field problems as project work for the students. Project selected should not be too complex which is beyond the level of the students. The placement of the students for such a practical cum project work should match with the competency profile of students and the project work assigned to them. Students may be assessed both by industry and polytechnic faculty. The suggested performance criteria is given below:

(1) Punctuality and regularity

(2) Initiative in learning/working at site

(3) Level/proficiency of practical skills acquired
(4) Ability of solve live practical problems

(5) Sense of responsibility

(6) Self expression/communication skills

(7) Interpersonal skills/Human Relation

(8) Report Writing Skills

(9) Viva Voce

The projects given to students should be such for which some one is waiting for solution. Some of the suggested project activities are given below: