UTTARAKHAND BOARD OF TECHNICAL EDUCATION

JOINT ENTRANCE EXAMINATION AND TRAINING, RESEARCH DEVELOPMENT CELL, DEHRADUN

STUDY AND EVALUATION SCHEME FOR DIPLOMA PROGRAMME

BRANCH NAME– TEXTILE DESIGN **SEMESTER – V**

Subject Code	Subject	L	T	P	TOT	EVALUATION SCHEME						Total Marks	Credit Point
						Internal		External					
		Period/Weeks				Theory	Practical	Theory		Practical			
						Max Marks	Max Marks	Max Marks	Hrs.	Max Marks	Hrs.		
195004	Woven Fabric Design - V	3	-	3	6	25	25	70	2.5	100	3.0	220	6
195001	Computer Aided Textile Design - III	2	-	2	4	-	50	-	-	100	3.0	150	5
195003	Textile Testing and Quality Control - I	3	-	3	6	25	25	70	2.5	100	3.0	220	6
195002	Textile Finishing	4	-	-	4	50	-	70	2.5	-	-	120	5
195005	Minor Project	2	-	8	10	-	140	-	-	100	3.0	240	11
195052	Industrial Exposure (assessment At Inst. Level) +	-	-	4	4	-	25	-	-	-	-	25	1
015054	General Proficiency (Disc/Game/SCA/NCC/NSS) #	-	-	4	4	-	25	-	-	-	-	25	1
Total		**14**	**-**	**24**	**38**	**100**	**290**	**210**	**-**	**400**	**-**	**1000**	**35**

Student Centered Activities will comprise of various co-curricular activities like games, hobby clubs, seminars, declamation contests, extension lectures, NCC, NSS and cultural activities etc.

\+ Industrial visit compulsory at minimum 2 Industries or Department.

Note: 1- Each period will be 50 minutes. 2- Each session will be of 16 weeks. 3- Effective teaching will be at least 12.5 weeks.

Note: six week project based industrial training as per details specified in major project syllabus, out of six weeks, four week during vacation after fourth semester and two week after fifth semester till commencement of six semester. Industrial oriented training cum major project work will be evaluated in six semester by an expert/examiner from industry.

Branch Code - 19

FIFTH SEMESTER
TEXTILE DESIGN

WOVEN FABRIC DESIGN - V

L	T	P
3	-	3

Subject Code : 195004

RATIONALE

The students of textile design are supposed to have knowledge and skills regarding various advanced weave and their construction. Hence, in this subject, students will learn advance design for various fabric and quality particulars of different textile.

DETAILED CONTENTS

THEORY

1. Jacquard harness and design calculations.
2. Economically distribution of color in designs as applied to textiles.
3. Construction of graph paper designs, process of drafting a sketch design, drafting designs from woven fabrics. Preventions of long floats ,figure shedding , instructions of ground weaves , correct and incorrect designs drafting,
4. Methods of composing jacquard designs, conditions to observe in designing figured fabrics.
5. Specifications of following standard fabrics.

   Blazer cloth, book muslin, buckram, casement cloth, chiffon corduroy, denim, drills, filtered cloth, flannel, gabardine, organdy, serge, taffeta, tweed, industrial fabrics [blowrapper], water resistant and fire resistant cloth, upholstery cloth, parachute fabric, kashmiri silk fabrics, regional shawls fabrics [kashmiri, laddakh, jammu], pashmina and merino..

PRACTICAL EXERCISES

1. Preparation of original textiles designs suitable for dobby jacquard weaving, four textile designs to be prepared by students. Each student or one pair of students should have their own design separately.
2. Preparations of point paper jacquard designs from original designs. At least four woven original jacquard designs to be produced by every group of four students separately.

INSTRUCTIONAL STRATEGY

Students should be able to understand different weaves from fabric samples or by weaving and should be taken for visit to textile industry or museum.

RECOMMENDED BOOKS

1. Watson's Textile Color And Design.
2. Grammar of Textile Design by Nisbet.
3. Structural Fabric design by Kilby .
4. Woven structural and Design I And II BY Davis Goerner.
5. Shawls and Carpets of Kashmir by All India Handicraft Board , New Delhi.
6. Simple fabric structure by S. S. Satsangi.

COMPUTER AIDED TEXTILE DESIGN - III

L	T	P
2	-	2

Subject Code : 195001

RATIONALE

The term CAD has found its ways into all major discipline that have got anything to do with designing or drafting techniques. The major object of this course is to expose the students to different software available in the fields of textile design industry so that they are able to use that software in the design and construction of various textiles.

DETAILED CONTENTS

Related theory for practical exercise

1. Understanding graphic representation,
   - File conversion
   - Drawing simple geometric and other related design,
   - Capturing a multicolor design picture using CCD/Scanner & modifying them.
2. Use of computer to design , fabric construction
3. Use of computer to match color line for woven and printed in multicolor designs

PRACTICAL EXERCISES

1. To draw 3 geometrical folk designs with coral draw.
2. To do color ways of the exercise.1 using coral draw
3. Create different textures for background and design using motifs/natural objects which the students will create using digitizer.
4. Make 3 woven designs for shirting material using different stripes, checks.
5. Scan a 10 inches x 15 inches design and learn to stitch making a single image .
6. Understanding and use of electronic pen on the tablet freely and intuitively.
7. Creating flowers and leaves digitally using a tablet.

RECOMMENDED BOOKS

1. CAD in clothing and textiles by W. Aldrich.
2. A magazine on Computer in the World Of Textiles.
3. Ned Graphics.
4. Coral and Photoshop.
5. Wacom Digitizer with Print Software.

TEXTILE TESTING AND QUALITY CONTROL - I

L	T	P
3	-	3

Subject Code : 195003

RATIONALE

Diploma holders in textile design are responsible for testing and quality control of yarn and fabric at the shop floor. Thus in this subject, students will be made fully aware of different quality standards and maintenance during manufacturing processes for the total quality concept.

DETAILED CONTENTS

Theory

1. Textile testing – its aim and scope. Concept of quality control and its importance. Methods of quality control.
2. Sampling techniques. Random and biased samples. Techniques for fabric sampling for specific tests.
3. Measurement of yarn number from large and small yarn lengths. Beesley's and Knowle's balance.
4. Yarn twist and its measurements, directions of twists. Function of twists in yarn structure. Effect of twist on yarn properties. Measurement of twist in single and ply yarns.
5. Important of calculations of weight per square meters or per square yards. Concept of ISO.
6. Blend tests by chemical methods.
7. Air permeability.
8. Chemical testing;

   Test of color fastness for-

   a. Washing
   b. Rubbing [wet and dry]
   c. Dry cleaning
   d. Perspiration [alkaline and acidic medium]
   e. Light
   f. Chlorination

PRACTICAL EXERCISES

1. Preparations of leas of different size on warp reel.

2. Measurement of yarn number from large and small length samples- use of Knowle's and Beesley's balances Direct weighing method and Analytical balance.
3. Measurement of twist in single and folded yarns by twists testers .
4. Measurement of weight per square meter and per square yard by Quadrant balance.
   a. For woven fabric [temple rectangular]
   b. For knitting fabric [round cutter]
5. Blend test by use of solubility process.
6. Use of air permeability tester.
7. Use of laundrometer for wash fastness testing
8. Crock meter for testing of rubbing fastness.
9. Demonstration of Grey scale & Blue scale.

INSTRUCTIONAL STRATEGY

Students must be taken for textile industry/mills for practice and study of inspection and quality control oprations.

RECOMMENDED BOOKS

1. Textile Testing by JE Booth
2. Textile Testing by Grover and Hambey
3. Textile Testing by Angapan
4. Textile Testing by John H.Skinkle

TEXTILE FINISHING

L	T	P
4	-	-

Subject Code : 195002

RATIONALE

A diploma holder in textile design must have necessity knowledge and procedures used for finishing. For this, he/she should be acquainted with different types of processing of finishing machines used for finishing. In addition, relevant skills also need to be developed in the students about the operation of these machines.

DETAILED CONTENTS

Theory

1. Introduction, objects of finishing and its importance. Classification of various types of finishes.
2. Study of finishes with respect to the purpose, fabrics and reagents used.
3. Textural finishes, their types and techniques.
4. Mechanical finishes and its applications
   a- Sanforizing
   b- Calendaring
   c- Crabbing and Milling
   d- Anti- felting
   e- Softening
   f- Decatising /blowing
   g- Paper pressing
5. Chemical finishes
   a- Water proof and water repellent finishes
   b- Flame retardant finishes
   c- Soil release and soil repellent finishes
   d- Anti bacterial and moth proofing finishes
   e- Crease/wrinkle resistant finishes
6. Latest developments in finishing

INSTRUCTIONAL STRATEGY

The Students must be taken for textile industry/mills to show them various processes of finishing and its machinery.

REFERENCE BOOKS

1. Technology of finishing, vol 10 by V.A. Shenai and M.N. Sharaf, Sevak Publication, Mumbai
2. Textile finishing by J.T.MARSH,BI Publications ,New Delhi
3. Textile fiber to fabric by Bernard P.Corbman, McGraw, Hill international edition
4. Textile finishing by Hall, A.J, Haywood books, London
5. Basic water treatment by Smethwurst G, IBT Publications, New Delhi
6. Treatment of Textile Processing Effluent of Manivasaram N, Sakthi Publications, Coimbatore
7. Production of synthetic fibres by Vaidya AA, Prentice Hall India ltd, New Delhi
8. Textile auxiliaries and finishing chemicals by Vaidya AA & S.S. Trivedi, ATIRA, Ahmadabad

MINOR PROJECT

L	T	P
2	-	8

Subject Code : 195005

RATIONALE

The purpose of introducing the projects are to enable the students to apply the knowledge, skills and attitudes acquired during the entire course of the solution of real life problems. Each student will be assigned a specific problem. The student will have to go through the entire problem solving right from conception of design up to the execution of design. It is expected that students will be sent to various textile industry for about 6-8 weeks at a stretch and they will be asked to take live problem from the field as project work.

PRACTICAL EXERCISES

Subject aim at exposing the students to experiment on the practical aspect to a finished product. Student has to select a style, embroidered/painted/printed/woven/ dyed fabric and then make at least 10 designs using computer – coral and Adobe Photoshop

They can continue one or more style and finish a complete product with 4 different colour ways, at least 50 croques should be made before a final design chart , visualization is made and approved by the supervisor with at least 3 to 4 colour schemes.

The project design has to be presented before the panel of teachers using O.H.P.(slides)

Thrust areas:

1. Design chart
2. Color schemes
3. Costing of Project
4. Utility aspect of the project
5. Market survey of product
6. Materials used
7. Export presentation

Suggested problems for project work

1. Floral pattern in stylized and naturalistic form
2. Analysis of design, transfer on trace sheets, preparation of screen for multicolor effect through photoelectric method

3. Batik and tie & dye technique in geometrical and abstract design
4. Sea animals (fishes), Sea breeds and sea shells(Curtain and towel)
5. Mix and match effects of tie& dye and batik
6. Floral pattern flowers heads, buds, leaves and stems in line work of art
7. Different printing effect on different class of fabric (photographic printing/hand screen)
8. Paisley motifs within decorative form of floral pattern increase with blackout line work

INSTRUCTIONAL STRATEGY

The teachers along with industry personnel will conduct performance assessment of students. The criteria for assessment of minor project will as below:

Criteria	**Weightage**
Attendance and punctuality	15 %
Initiative	15 %
Relations with people	15 %
Report writing	25%
Presentation/seminar	30%

IMPLEMENTATION

LEARNING OUTCOMES

ASSESSMENT

IMPACT

LEARNING OUT COMES AND MEANS OF ASSESSMENT

BRANCH NAME – TEXTILE DESIGN **SEMESTER – V**

S.N0.	Title of Subject/Unit	Learning Outcomes	Means of Assessment
1	Woven Fabric Design - V	Use appropriate procedures for developing skill regarding various advance weave and their construction.	Assignments of collecting and study of various types of textile structure, weaves , properties and materials Class tests, mid-terms and end-term written tests, models/prototype making Actual laboratory and practical work , model/prototype making, exercises and viva-voce. Report writing presentation and viva-voce.
2	Computer Aided Textile Design - III	Use of computer and IT tools for creating document, making designs and presentation.	Assignments and Quiz/Class tests, mid-terms and end-term written tests, models/prototype making Actual laboratory and practical work , model/prototype making, assembly and disassembly exercises and viva-voce. Design development Software installation, Report writing presentation and viva-voce.
3	Textile Testing And Quality Control - I	Use appropriate procedures and to aware of different quality standards and maintenance during manufacturing.	Assignments of collecting and study of various types of textile standards of quality. Quiz/Class tests, mid-terms and end-term written tests, models/prototype making Actual laboratory and practical work, model/prototype making, assembly and disassembly exercises and viva-voce. Report writing presentation and viva-voce.

4	Textile Finishing	Use appropriate proceduresof various finishing technique for textile.	Assignments related to collection of various finished textile. Class tests, mid-terms and end-term written tests, models/prototype making Actual laboratory and practical work, model/prototype making, exercises and viva-voce. Report writing presentation and viva-voce.
5	Minor Project	Applyand Useof appropriate proceduresto solve specific problem.	Assignments of entire problem solving from conception of design up to the execution of design. Quiz/Class tests, mid-terms and end-term, models/ prototype making Actual laboratory and practical work, model/prototype making, assembly and disassembly exercises and viva-voce. Report writing presentation and viva-voce.