



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 – III

Subject Code	Subject	L	T	P	T	EVALUATION SCHEME								Total Marks	Credit Point
						Internal				External					
						Theory		Practical		Theory		Practical			
						Max Marks	Hrs.	Max Marks	Hrs.	Max Marks	Hrs.	Max Marks	Hrs.		
193002	Design Ideas	2	-	4	6	-	100	-	-	-	100	3.0	200	6	
193006	Woven Fabric Design - III	3	-	2	5	25	25	70	2.5	60	3.0	180	5		
193003	Principle of Loom	3	-	2	5	25	25	70	2.5	60	3.0	180	5		
193005	Textile Coloration - I	2	-	4	6	25	25	70	2.5	60	3.0	180	6		
193004	Textile Calculation	5	-	-	5	50	-	70	2.5	-	-	120	4		
193001	Computer Aided Textile Design - I	-	-	3	3	-	40	-	-	50	3.0	90	2		
193052	Industrial Exposure (Assessment at Inst. Level) +	-	-	4	4	-	25	-	-	-	-	25	1		
013054	General Proficiency (Disc/Game/SCA/NCC/NSS) #	-	-	4	4	-	25	-	-	-	-	25	1		
	Total	15	-	23	38	125	265	280	-	330	-	1000	30		

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.

Branch Code - 19



**THIRD SEMESTER
TEXTILE DESIGN**

Subject Code : 193002

L	T	P
2	-	4

Rationale

To explore the creativity and the visualization of the students while introducing them to the Design problem. Thus particular course aims at preparing the students to initiate their designing skills.

DETAILED CONTENTS

PRACTICAL EXERCISES:- Different Themes are to be discussed in the class for each theme the students have to submit 10 ideas in colors on rough sheets. One ideas of selected and implemented in to design with repeat on paper.

Section –A Stylization of following suggested natural themes:-

1. Sea animals, grass beads and roots
2. Animal skin textures
3. Comositation of birds and trees
4. Butterfly and flowers

Section –B Select design for the fabric with the following themes:-

1. Geometrical patterns
2. Floral patterns
3. Traditional pattern
4. Animated forms
5. Monumental designs
6. Fruit and vegetables
7. Calligraphy
8. Jewellery design

Note-

1. In a semester, a student is required to make 3-5 paper designs and then the suggested paper design have to be implemented in various style on fabric.
2. Beside the suggested topics, one is free to select any other (topic) from day to day requirement

RECOMMENDED BOOKS

1. The Encyclopedia of patterns and motifs by Dorothy Bosomworth; studio London
2. Impression A Classic Collection of textile design by K rakish;the designer Paint

3. Textile Designs Idea and Applications by Cloel Sokelov; PBC International Inc. New York
4. Fabric Art Heritage of india by Sukla das; Abhinav Publications
5. Textile design 200 Years of Patterns for Printed Fabrics Arranged By Motifs, Colours, period and Design by Mary Schoeser and celia Rufey; Thomes and Hudson
6. Handwoven Fabrics of India by Jarleen Dhamija and Jhyotindra Jain;Mapin Publishing Pvt.Ltd ,Ahmedabad
7. History of Textile Design by VA Shenai;Sevak Publications,Bombay
8. Designers Guide to Colour 3 By Jeanne Allen; Chronicle Books San Francisco

L	T	P
3	-	2

Subject Code : 193006

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. Backed fabric, warp and weft backed fabric, wadded warp and weft backed fabric their beaming and drafting procedure.
2. Double Cloth: Construction of double cloth on design paper, their beaming, drafting and pegging. Introduction of (i) Tubular fabrics (ii) double faced fabrics (iii) fabrics opening to double the width (iv) concept of double equal plain fabrics. Warp and Weft tying principle. (This should be shown in a Textile mill or through visuals).
3. Introduction to gauze and Leno fabrics. Structure of gauze and leno fabrics ; bottom and top doubling principle. (gauze and leno structures to be shown in a Textile mill or through visuals).
4. Brocade and damask fabrics, reversible and non- reversible damask, making of brocade and damask designs.(shown in a Textile mill or through visuals).

PRACTICAL EXERCISES

1. Study of the fabrics regarding structure/weaving and its end uses:
 - Draper or curtain- materials in natural colour with perforated weaves or different drafting.
 - Furnishing fabrics (upholstery) in double cloth weaves
 - Bed cover, dobby weaves
 - Partitions and Lampshades in gauze and leno fabrics

RECOMMENDED BOOKS

1. Grammar of textile Design- Nisbet
2. Structural Fabric Design by Kilby

3. Woven structures and design- Doris Goerner, British Textile Technology Group
WIRA House, Leeds UK
4. Fiber to Fabric by Ghosh
5. Watson's Advance Textile Design
6. Watson's Textile Design and Colour
7. Knitting Technology- Spencer
8. Warp Knit Fabric Construction by Charis Wildens U.Wilkens Verlag Germany
Simple Fabric Structure by SS Satsangi

PRINCIPLE OF LOOM

Subject Code : 193003

L	T	P
3	-	2

RATIONALE

The students of textile design must have a well developed aesthetic sense to recognize beauty in object and capability to make best use of the experience in designing and development textile object with the help of various looms. The students are supposed to have knowledge and skills regarding various technique and methods of fabric manufacturing. Hence, in this subject, students will learn about the mechanism of various fabric and quality particulars of different textile.

Detailed Content

1. Introduction to yarn packages and different yarn faults and imperfections.
2. Introduction to drawing gaiting up process. Procedure of gaiting up of warp beam on the loom.
3. Objectives of warp winding and prin winding processes. Introduction to Direct warping and sectional warping. Methods of Creeling.
4. Primary motions of loom. Over picking and under picking. Introduction to project repair and air jet picking.
5. Different type of shading.
6. Secondary loom motions:- Objectives & mechanism & Take up motion , Seven wheel take up motion , Positive take up motion and positive and negative let off.
7. Objects of warp protecting motion, mechanism of loose reed & fast reed motions.
8. Objects of warp stop motion, Weft stop motions (Side weft fork motion)
9. Introduction to carpet weaving(Tufted & knotted carpets)

PRACTICAL EXERCISES

1. To study seven wheel take up motion.
2. To study loose reed & fast reed motions.
3. To study side weft fork motions.
4. Demonstration of looms.
5. Demonstration of carpet samples on carpet frames.
6. Industrial Visit.

RECOMMENDED BOOKS

1. Weaving Mechanism Vol. I & II by NN Banerjee
2. Fancy Weaving by K T Aswani
3. Winding and warping by BTRA
4. Warp Sizing by JB Smith
5. Principle of Weaving by Marks and Robinsons
6. Yarn Preparation Vol I & II by R Sen Gupta
7. Mechanism of Weaving by WM Fox

L	T	P
2	-	4

Subject Code : 193005

RATIONALE

The students of textile design must have a well developed aesthetic sense to recognize beauty in object and capability to make best use of the experience in designing and development textile object with the help of various Printing and dyeing technique. The students are supposed to have knowledge and skills regarding various technique and methods of dyeing and printing. Hence, in this subject, students will learn about the of various Printing and dyeing technique and quality particulars of different textile.

DETAILED CONTENTS

Theory

Section-A Textile Dyeing

1. Introduction to dyes and dyeing. Classification and brief idea of dyes (Natural, Mordant & Synthetic)
2. Pretreatments / preparation of Material i.e. Fiber, Yarn and fabric for Dyeing/ Printing/ Finishing
 - Singeing & Shearing
 - Desizing
 - Scouring/Degumming
 - Bleaching
 - Optical brightening
 - Mercerization
 - Heat setting
3. Water Hardness and its removal (Importance of soft water in dyeing)
4. pH- its definition, function and importance in dyeing
 - dyeing of cotton with Direct dyes
 - Reactive dyes
 - Insoluble Azoic colours
 - Vat dyes
 - Sulphur dye

Section- B Textile Printing

1. Introduction to printing. Style of Printing (Direct/Resist/Discharg)
2. Printing paste and its importance. Essential constituents of printing paste and their importance
3. Selection of thickeners and their properties
4. Auxiliaries used for printing
5. After treatment of printed material
 - Drying
 - Steaming/ageing/curing
 - Washing off

LIST OF PRACTICALS

1. Scouring of cotton, wool, silk and synthetics.
2. Bleaching of cotton fabric with sodium hypochlorite and H₂O₂ (Hydrogen peroxide) Bleaching of wool and silk with H₂O₂ (Hydrogen peroxide) synthetics with sodium chlorite
3. Direct style of printing of cotton with
 - Reactive dyes/direct dyes
 - Pigment colours/Rapid dyes fast
4. Dyeing of synthetic like polyester, nylon and acrylic.

RECOMMENDED BOOKS

1. Chemistry of dyes and Principle of dyeing – V A shenai (Vol.2) Sevak Publications, Mumbai
2. Technology of dyeing – Shenai (Vol.5) Sevak Publications, Mumbai
3. The dyeing of Textile materials – Prente Cegarra
4. Technology of printing by V A shenai (Vol.2) Sevak Publications, Mumbai
5. Technology of printing by Kalley
6. Dyeing and Printing by Kalley
7. Dyeing and Printing by Varke
8. Introduction to Textile Printing by Clark
9. Chemical Processing of synthetic fibers and blends by Datye K V and Vaidye AA, John wiley and sons, New York
10. Dyeing and chemical technology of textile fibers , ER Trotman, Charles Griffin & Co Ltd London
11. A glimpse of chemical Technology of fibrous Materials by RR Chakravorty, Mahajan Publication, Ahmedabad
12. Dyeing and Printing by Jyoce storey
13. Manual of Textile Printing by Story

Subject Code : 193004

L	T	P
5	-	-

RATIONALE

The students of textile design is supposed to calculate the yarn count, yarn dimensions and carry out other textile calculations related to textile designing. This subject aims at developing knowledge of various calculations related to yarn and fabric.

DETAILED CONTENTS**Theory**

1. Yarn numbering, (Yarn count). Various direct and indirect yarn numbering systems. Universal yarn numbering system.
2. Conversion of count from one yarn numbering system to another like tex, Denier, English count, New French system, metric system, jute system, worsted and woolen.
3. Calculations of resultant yarn number of plied yarn and average yarn number.
4. Calculation of yarn diameter.
5. Warp cover, weft cover Cloth cover, cover factor and weight of fabric per unit.
6. Calculation of weight of warp, weight of weft of different color yarns in striped and check fabrics.
7. Calculation related to cloth take-up and crimp percentage.
8. Calculations related to weight of warp and weft required to produce given length of fabrics as per given quality Specifications.
9. Calculations for loom production.
10. Calculation related to basic reed, reed count, heald count.

RECOMMENDED BOOKS

1. Weaving Calculation by R Sen Gupta.
2. Spinning calculation by WS Taggart
3. Handbook of Spinning calculation by TK Pattabhiram.
4. Advance textile designs: by William Wattsons.
5. Textiles sciences by P K Sharma.
6. Woven cloth construction, Mark and Robinson, The Textile Institute, Manchester

Subject Code : 193001

L	T	P
-	-	3

RATIONALE

Information technology has great influence on all aspects of life. Almost all work places and living environment are being computerized. In order to prepare diploma holders to work in these environments, it is essential that they are exposed to various aspects of information technology such as understanding the concept of information technology and its scope; operating a computer; use of various tools of MS office; using internet etc. form the broad competency profile of diploma holders. This exposure will enable the students to enter their professions with confidence, live in a harmonious way and contribute to the productivity.

DETAILED CONTENTS

Instructions for practical Exercises

1. Introduction to latest coral draw & Photoshop software
2. Uses of various tools n coral draw & Photoshop.
3. Formation of design using different tools and application of design on graph paper.
4. Application and election of suitable colours for a particular design.
5. Scan a design with the help of Photoshop.
6. Uses of digitizer for design.
7. Enlargement and reduction of design.
8. To learn and understand the functioning of the coral trace and using it to trace scanned work for further processes.

RECOMMENDED BOOKS

1. SAMS Coral Draw
2. SAMS Adobe Photoshop.



LEARNING OUT COMES AND MEANS OF ASSESSMENT

BRANCH NAME – TEXTILE DESIGN

SEMESTER – III

S.No.	Title of Subject/Unit	Learning Outcomes	Means of Assessment
1	Design Ideas	Apply basic principle of design for sketching to developed motifs for various textile and initiate their designing skill.	Assignments of making sketches related to nature study traditional designs and different objects using various types of medium of colors. Class tests, mid-terms and end-term, models/prototype.
2	Woven Fabric Design - III	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.
3	Principle Of Loom	Use appropriate procedures for developing textile with loom and its functioning.	Assignments of collecting and study of various types of textile loom, its functioning, fabric 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 Colouration - I	Use appropriate procedures for various pretreatment dyeing and printing technique for various textile.	Assignments of collecting and developing various dyeing and printing 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	Textile Calculation	Apply basic principle for various calculations related to yarn and fabric.	Assignments of collecting and study of various types of textile calculation of yarn and fabric 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.
6	Computer Aided Textile Design - I	Use of computer and IT tools for creating document, making designs and presentation.	Assignments Design development Software installation, Report writing presentation and viva-voce.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.