



# Fashion STUDIES

Practical Manual

CLASS-XI



**CENTRAL BOARD OF  
SECONDARY EDUCATION**

Preet Vihar, Delhi - 110301

# नया आगाज़

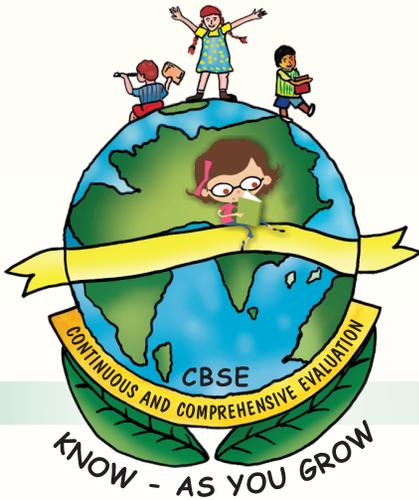
आज समय की माँग पर  
आगाज़ नया इक होगा  
निरंतर योग्यता के निर्णय से  
परिणाम आकलन होगा।

परिवर्तन नियम जीवन का  
नियम अब नया बनेगा  
अब परिणामों के भय से  
नहीं बालक कोई डरेगा

निरंतर योग्यता के निर्णय से  
परिणाम आकलन होगा।

बदले शिक्षा का स्वरूप  
नई खिले आशा की धूप  
अब किसी कोमल-से मन पर  
कोई बोझ न होगा

निरंतर योग्यता के निर्णय से  
परिणाम आकलन होगा।  
नई राह पर चलकर मंज़िल को हमें पाना है  
इस नए प्रयास को हमने सफल बनाना है  
बेहतर शिक्षा से बदले देश, ऐसे इसे अपनाए  
शिक्षक, शिक्षा और शिक्षित  
बस आगे बढ़ते जाएँ  
बस आगे बढ़ते जाएँ  
बस आगे बढ़ते जाएँ.....





# Fashion Studies



## Practical Manual

CLASS

**XI**



**CENTRAL BOARD OF SECONDARY EDUCATION**

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110 301 India

# Fashion Studies



**Practical Manual on Fashion Studies Class–XI**

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**Copies:**

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# भारत का संविधान

## उद्देशिका

हम, भारत के लोग, भारत को एक सम्पूर्ण <sup>1</sup>[ प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य ] बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,  
विचार, अभिव्यक्ति, विश्वास, धर्म  
और उपासना की स्वतंत्रता,  
प्रतिष्ठा और अवसर की समता

प्राप्त कराने के लिए

तथा उन सब में व्यक्ति की गरिमा

और <sup>2</sup>[ राष्ट्र की एकता और अखंडता ]

सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई० को एतद् द्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

1. संविधान ( बयालीसवां संशोधन ) अधिनियम, 1976 की धारा 2 द्वारा ( 3.1.1977 ) से “प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य” के स्थान पर प्रतिस्थापित।
2. संविधान ( बयालीसवां संशोधन ) अधिनियम, 1976 की धारा 2 द्वारा ( 3.1.1977 ) से “राष्ट्र की एकता” के स्थान पर प्रतिस्थापित।

## भाग 4 क

### मूल कर्तव्य

51 क. मूल कर्तव्य - भारत के प्रत्येक नागरिक का यह कर्तव्य होगा कि वह -

- (क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;
  - (ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;
  - (ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;
  - (घ) देश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;
  - (ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;
  - (च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका परिरक्षण करे;
  - (छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी, और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणिमात्र के प्रति दयाभाव रखे;
  - (ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;
  - (झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;
  - (ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले;
- <sup>1</sup>(ट) यदि माता-पिता या संरक्षक है, छह वर्ष से चौदह वर्ष तक की आयु वाले अपने, यथास्थिति, बालक या प्रतिपाल्य के लिये शिक्षा के अवसर प्रदान करे।

1. संविधान ( छयासीवां संशोधन ) अधिनियम, 2002 की धारा 4 द्वारा ( 12.12.2002 ) से अंतः स्थापित।

# THE CONSTITUTION OF INDIA

## PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a <sup>1</sup>[SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC] and to secure to all its citizens:

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the<sup>2</sup> [unity and integrity of the Nation];

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.

1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation" (w.e.f. 3.1.1977)

# THE CONSTITUTION OF INDIA

## Chapter IV A

### FUNDAMENTAL DUTIES

#### ARTICLE 51A

Fundamental Duties - It shall be the duty of every citizen of India-

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- <sup>1</sup>(k) who is a parent or guardian to provide opportunities for education to his/her child or, as the case may be, ward between age of six and fourteen years.

1. Ins. by the constitution (Eighty - Sixth Amendment) Act, 2002 S.4 (w.e.f. 12.12.2002)



# Fashion Studies

## Foreword

India is known for its rich heritage of textiles and costumes. The global interest and demand for Indian textile and craftsmanship has led to an emergence for huge apparel industry for domestic market and export.

The large scale production of ready-to-wear clothing has led to setting up of manufacturing units and export houses, requiring trained professional to lead the design activity and product development and coordination. The Indian apparel industry is spreading and growing by leaps and bounds providing employment to over a million people.

In response to the above the subject FASHION STUDIES is being introduced at Senior Secondary level as an independent elective subject in the academic stream. A student will have the option to take this subject in combination with other subjects. The course portrays up-to-date basic concepts, techniques, application and some classroom practical. The publication in hand is the main course book, which covers all necessary information essential to understand the principles of 'Fashion Studies' included in the syllabus. Further, guidelines in project work will be developed to enable the teachers for effective transaction of curriculum.

The subject has been developed in collaboration with NIFT (National Institute of Fashion Technology, Delhi). I place on record the services rendered by Shri. P.K. Gera, Director General, NIFT. The NIFT faculty who have contributed as authors of various chapters are Sr. Prof. Banhi Jha, Dean and CBSE Project Coordinator, Professor Kripal Mathur, Project Anchor, Prof. Vandana Narang, Dr. Nilanjana Bairagi, Ms. Ashima Tiwari and Ms. Anu Jain. The initiatives taken by Dr. Sadhana Parashar, Prof. & Director (ART&I) and the efforts made by Dr. Kshipra Verma, Education Officer are highly appreciated in bringing out the publication.

I invite the comments and suggestions from the experts, teaching community to improve upon the curriculum, textual material and other related matter.

**Vineet Joshi**  
Chairman

# Fashion Studies



## Preface

Fashion theory and practices are built on an academic foundation where history, anthropology, sociology, psychology and economics intermingle to shed light on clothing as one of the three most essential needs of the human race. It is a visual indicator of the cultural identity of a country.

Fashion is a dynamic force which influences lifestyle choices made by consumers. It drives international trends in a multitude of areas from apparel, accessories, automobiles, cuisine, wellness, vacations and more. Glamour notwithstanding, fashion is a serious global business with high financial stakes. The increasing references to Indian textiles, clothing and culture on international ramps are indicative of India being centre-stage on the global fashion map.

The current educational scenario provides students with a wide range of subjects that are informative and also encourage individual aptitude. Many want to pursue non-traditional careers where creativity, problem-solving and business acumen integrate into an exciting combination. Fashion Studies, introduced by CBSE at the 10+2 level as an elective academic subject, points in the direction of fashion as a creative and challenging career.

Fashion Studies offers insight into the components and processes of design, manufacturing, marketing in apparel and textiles. It encompasses the process from fibre to fabric, from concept to creation of garments. It provides an overview of fashion, introduces an understanding of fabrics and surface techniques, design fundamentals and elements of garment-making.

Fashion Studies is envisaged to help students to make an informed decision about their future goals.

**Sr. Prof Banhi Jha**  
Dean - Academics



# Fashion Studies

## Acknowledgement

### CBSE

Mr. Vineet Joshi, IAS  
Dr. Sadhna Parashar, Prof. & Director (ART & I)  
Dr. Kshipra Verma, Education Officer

### NIFT

Mr. Prem Kumar Gera, IAS  
Sr. Prof Banhi Jha, Dean (Academic)

### Anchor

Prof. Kripal Mathur

### Contributors

1. Overview of Fashion: Sr. Prof. Banhi Jha
2. Introduction to Fibres, Dyeing and Printing: Dr. Nilanjana Bairagi
3. Design Fundamentals: Prof. Kripal Mathur
4. Elements of Garment making: Prof Vandana Narang & Ms Anu Jain

# Fashion Studies





# Fashion Studies

## **FASHION STUDIES I**

**Total Marks 100**  
**(Theory 70 + Practical 30)**

Students will demonstrate their understanding of the subject through the following practical exercises:

### **CHAPTER 1: OVERVIEW OF FASHION**

1. Relating Fashion Cycle theories to contemporary fashion
2. Explaining the Pendulum Swing theory for fashion forecasting
3. Referencing of historical costumes as inspiration for Indian apparel design
4. Use of print media as a source of information for fashion trends

### **CHAPTER 2: INTRODUCTION TO FIBERS, DYEING AND PRINTING**

5. Identification and distinguishing between the different fibres through burning test
6. Identification of basic weaves in fabrics
7. Identification of different printing techniques on fabric
8. Applications and end uses of different textile structures

### **CHAPTER 3: DESIGN FUNDAMENTALS**

9. Analysis of the relationship between form/shape and function/use and to develop sensitivity towards color, shape and texture.
10. Analysis of varied textures in nature and man-made environment
11. Conversion of verbal language into design development
12. Use of Balance/Symmetry, Emphasis and Contrast in designing products and spaces

### **CHAPTER 4: ELEMENTS OF GARMENT MAKING**

13. Develop familiarity with the machine
14. Prepare samples of seams
15. Prepare samples of seam finishes
16. Prepare samples of gathers, pleats and tucks



## MATERIAL LIST

\* For Practical Exercises 1- 4

- I. Drawing Board - Half Imperial**
- II. Paper**
  - i. Cartridge paper
  - ii. Sunlit Bond paper
  - iii. Ivory paper
  - iv. Tracing paper / Gateway tracing paper
  - v. Butter paper
- III. Stationery**
  - i. Graphite pencils - HB, B, 2B
  - ii. Clutch pencil - 1
  - iii. Erasers (medium size) - 6
  - iv. Plastic ruler - 12" and 24"
  - v. Plastic ruler - 12" and 24"
  - vi. Black pen - thin nib
- IV. Miscellaneous Supply**
  - i. Scotch tape - 1
  - ii. Masking Tape/ Cello tape - 1
  - iii. Stapler - 1
  - iv. Scissors - medium size
  - v. Drawing board clips - 4
  - vi. Pins - Thumb pins, Gem clips, All-pins
  - vii. Glue
- V. Art supplies**
  - i. Poster colours - box of 12



# Fashion Studies

- ii. Black water-proof ink - 1 bottle
- iii. Colour pencils - set of 12 colours
- iv. Colour marker pens - set of 12 colours

## VI. Brushes

- i. Round watercolor brushes - size nos. 2, 4, 8 (1 each)
- ii. Flat watercolor brushes - size nos. 3,5 (1 each)

## VII. Palette(for mixing colours)

## VIII. Water Container

- i. Ceramic mug or glass - 1

## IX. Sketchbook - 11" by 14"

## X. Portfolio case-Half Imperial size

## XI. Apron -1 (to protect the school uniform during practical exercises)

### Paper sizes (for reference)

Size	Inches	
A1	23.4 by 33.1	Full Imperial
A2	16.5 by 23.4	½ Imperial
A3	11.7 by 16.5	¼ imperial
A4	8.3 by 11.7	



\* Practical exercises 1 - 4 are based on **Unit I: Overview of Fashion**

## PRACTICAL EXERCISE 1

### Objectives

1. To enable students to demonstrate understanding of the theories of the **Fashion Cycle**
2. To explain the relevance of the theories to contemporary fashion

### Material requirement

1. Unlined/ blank sketchbook (A3)
2. Scissor, glue
3. Fashion magazines

### Procedure

1. Refer to books, magazines and the internet with a focus on any decade in the 20th century (e.g. Jazz age of 1920s, Hippie era of 1960s, Punk fashion of 1980s etc.)
2. Find articles and photographs of the overall 'look' of the selected decade e.g. art, architecture, cars, furniture and other lifestyle products.
3. Focus on the details of clothes (fabrics, silhouettes, colours and prints) and accessories (watches, bags, shoes).
4. Find visuals of Indian and international runway shows (within the last 3 years) where the collections are inspired by the selected decade but re-interpreted anew.
5. Label the visuals with information about the designers, location of the shows and year.
6. Paste the visuals on sheets/ notebook co-relating similarities and differences in design between the original fashion and its contemporary interpretation
7. Write a note analyzing the Fashion Cycle (e.g. Cycle within Cycle, Recurring Cycle) of the 'look'.
8. Make a presentation for the class

### Observation and Discussion

1. What is the relevance of the theories related to the Fashion Cycle for the fashion industry?



# Fashion Studies

## PRACTICAL EXERCISE 2

### Objective

1. To explain the **Pendulum Swing** as an important aspect of fashion forecasting

### Material requirement

1. Unlined/ blank sketchbook (A3)
2. Scissor, glue
3. Fashion magazines

### Procedure

1. Select any one Indian or Western item of clothing worn by a large segment of the population (e.g. jeans, salwar - kameez, saris etc.)
2. Refer to magazines and the internet to find visuals of Indian or international shows (within the last 2-5 years) where this item of clothing has been featured.
3. Focus on the design variations of this item of clothing in terms of cut, fit, fabrics, colours, prints to identify the salient features.
4. Find visuals of this garment recording the changes it has gone through within the last 2-5 years.
5. Write a brief note with pictures analyzing the Pendulum Swing
6. Make a presentation for the class

### Observation and Discussion

1. What is the relevance of the Pendulum Swing theory for the fashion industry?



## PRACTICAL EXERCISE 3

### Objective

1. To develop analytical understanding of how **historical costumes** inspire traditional Indian clothing
2. To enable understanding of the Trickle-across theory of fashion in terms of traditional Indian clothing

### Material requirement

1. Unlined/ blank sketchbook (A3)
2. Scissor, glue
3. Fashion magazines

### Procedure

1. Refer to books (see bibliography), magazines or internet on traditional Indian clothing focusing on details of the costumes
2. Collect pictures of any three traditional costumes for women and/or men (e.g. Choli blouse, Anarkali kurta, Angarkha, salwar, churidar, sari etc.)
3. Analyze details of the costumes in terms of silhouette, fabric and surface embellishment
4. From magazines or internet, find 5 visuals of contemporary fashion apparel inspired from each of the three traditional costumes
5. Label each picture with the following details:
  - i. Name of the designer/ label/ brand
  - ii. Season
  - iii. Price (optional)
6. Compile the visuals in a notebook systematically

### Observation and Discussion

1. How do historical costumes continue to be a source of inspiration for traditional designs across different consumer segments?



# Fashion Studies



## Observation and Discussion

1. Are there commonalities in fashion trends presented by designers in their shows?
2. Are these designs currently available in Indian stores?
3. Are the designs similar to or variations of predicted trends? Are they more commercial (wearable/practical) than designs on the runway?



# Fashion Studies

## MATERIAL LIST

\* For Practical Exercises 5 - 8

### FABRIC SAMPLES:

1. Any 5 fabric samples of 10cm by 10 cm each of the following composition:
  - a. Cotton
  - b. Wool
  - c. Silk
  - d. Polyester
  - e. Nylon
2. Any 5 fabric samples of 10cm x 10 cm each of the following weaves:
  - a. Plain: 2 samples
  - b. Twill : 2 samples
  - c. Sateen : 1 sample
3. Any 5 printed fabric samples 10cm x 10 cm preferably of the following printing techniques;
  - a. Block printed : 2 samples
  - b. Thermal Transfer printed: 1 sample
  - c. Screen printed: 1 sample
  - d. Digital printed: 1 sample
4. Any 20 fabric samples consisting of different types of weaves, prints, structures, etc.  
(e.g. plain woven samples for dress material, velvet, canvas, heavy weight upholstery fabric, chiffon, denim, stretchable fabric, etc.)

### STATIONERY

1. Scissors - medium size
2. Ivory paper
3. Plastic ruler - 12" and 24"
4. Black pen - thin nib
5. Stapler - 1

# Fashion Studies



## MISCELLANEOUS SUPPLY

1. Small Bunsen burner
2. Forceps
3. Pins
4. Beaker with water





## PRACTICAL EXERCISE 6

### Objective

1. To enable students to identify the basic weaves in fabrics

### Material requirement

1. Ivory sheet
2. Scissor, glue
3. Any 5 fabric samples of 10cm \* 10 cm each of the following weaves:
  - ❖ Plain: 2 samples
  - ❖ Twill : 2 samples
  - ❖ Sateen : 1 sample

### Procedure

1. Take 5 fabric swatches of 10 cm \* 10 cms each of basic weave patterns.
2. Observe the two sets of yarn, see how the warp and weft yarns move up & down for interlacement
3. Identify the warp and the weft
4. Find out the type of weave (plain, twill or sateen) of each of the fabric samples.
5. Present it neatly on the ivory sheet.

### Observation and Discussion

1. Discuss the different basic weaves.



## PRACTICAL EXERCISE 7

### Objective

1. To enable students to identify the different printing techniques on fabric

### Material requirement

1. Ivory sheet
2. Scissor, glue
3. Any 5 printed fabric samples 10cm\*10 cm preferably of the following printing techniques:
  - a. Block printed : 2 samples
  - b. Thermal Transfer printed: 1 sample
  - c. Screen printed: 1 sample
  - d. Digital printed: 1 sample

### Procedure

1. Take 5 fabric swatches of 10 cm \* 10 cms each of different printed patterns.
2. Observe the type of print, how many colours have been used in the print.
3. Identify the method of printing.
4. Present it neatly on the ivory sheet.

### Observation and Discussion

1. Discuss the different methods of printing on textiles.



## PRACTICAL EXERCISE 8

### Objective

1. To enable students to understand the applications and end uses of different textile structures.

### Material requirement

1. Ivory sheet
2. Scissor, glue
3. Any 20 fabric samples consisting of different types of weaves, prints, structures, etc. (example: plain woven samples for dress material, velvet, canvas, heavy weight upholstery fabric, chiffon, denim, stretchable fabric etc.)

### Procedure

1. Select 5 of each fabric swatch of 10 cm by 10 cm each.
2. Observe the type of print, colours, thickness, feel and the comfort properties of each sample.
3. Identify the end uses of each of the fabric samples.
4. Present it neatly on the ivory sheet.

### Observation and Discussion

1. Explain how the end uses differ based on the design and property of the fabric.



## PRACTICAL EXERCISE 9

\*Exercises 9 - 12 are based on Chapter 3: Design Fundamentals

### Objective

1. To analyze the relationship between form/shape and function/use.
2. To develop sensitivity towards color, shape and texture.

### Material requirement

1. A3 Sheet/s
2. Scissor, glue
3. Magazines for selecting picture of the product

### Procedure

1. Refer to magazines or internet to collect pictures of interesting products. (For example helmet, torch, pen scissors etc.)
2. Analyze the pictures in terms of aesthetics and its end use/function. Describe its design attributes (aesthetics and functionality)
3. Cut the selected product picture and paste it neatly on an A-3 Sheet.
4. Label the different parts of the selected product.
5. Write a short note on the function of each part.

### Observation and Discussion

1. Discuss the role of Elements of Design for improving aesthetics and functionality while designing any product.



## PRACTICAL EXERCISE 10

### Objective

1. To analyze varied **Textures** in Nature and Man - made environment.
2. To sensitize students to the tactile feel of the objects in Nature and Man-made environment.
3. To develop ability to interpret/convert a tactile feel/look into verbal language.
4. Interpretation of verbal expression for design development.

### Material requirement

1. A4 sheet/s
2. Scissor, glue
3. Magazines for selecting pictures.

### Procedure

1. In order to sensitize students, faculty must show visuals of various Textures and describe with an adjective for conversion to verbal expression.
2. Students need to collect visuals depicting textures in Nature (eg. bark of trees, ripples in the water, texture on flora and fauna, stones and others)
2. Students should also collect visuals depicting textures in Man-made environment (fabric texture, corrugated sheet, wall texture and others)
3. Paste at least three visuals from each category on A-4 sheets.
2. Present them individually with brief description of each

### Observation and Discussion

1. Discussion on **Textures** found in Nature.
2. Discussion on Textures found in Man-made environment.
3. Role of Textures in Design development.
4. A walk through a park, historical monument or market.



## PRACTICAL EXERCISE 11

### Objective

1. To improve observation for identifying emotions in the world around them.
2. To develop ability to interpret/convert different types of emotions into words
3. Conversion of verbal language into design development.

### Material requirement

1. A4 sheet/s
2. Scissor, glue
3. Magazines for selecting pictures

### Procedure

1. In order to sensitize students, teachers must show and discuss visuals of various emotions for conversion to verbal expression.
2. Students need to collect 10 visuals depicting emotions (e.g. Anger, Happiness, Joy, Loneliness)
3. Select at least five such visuals
4. Paste these on A-4 sheets.
5. Present them individually with relevant verbal description of the emotion.

### Observation and Discussion

1. How different types of emotions can be portrayed through colours.
2. Students to enact/express different emotions before the class.
3. Students may identify movies or plays where emotions have played an important role.



## PRACTICAL EXERCISE 12

### Objective

1. To improve their observation for identifying Balance/Symmetry, Emphasis and Contrast in nature and architecture.
2. To develop an understanding of how to use Balance/Symmetry, Emphasis and Contrast in designing products and spaces.

### Material requirement

1. A4 Sheet/s
2. Scissor, glue
3. Magazines for selecting picture

### Procedure

1. In order to sensitize students, faculty must show visuals depicting Balance/Symmetry, Emphasis and Contrast.
2. Students need to collect 10 visuals for each category i.e. Balance/Symmetry, Emphasis and Contrast.
3. Paste at least five visuals of each on A-4 sheets.
4. Present each picture with brief description.

### Observation and Discussion

1. Discussion on different types of Balance in nature and architecture.
2. Students to discuss Balance/Symmetry in Nature (eg. veins on a leaf, a pine tree, the Taj Mahal etc).
3. Class discussion on Balance/Symmetry, Emphasis and Contrast in architecture (Mughal architecture, Eiffel Tower, Qutub Minar and others)



## GENERAL INSTRUCTIONS FOR CHAPTER 4

\*Exercises 13 - 16 are based on Chapter 4: Elements of Garment Making

### Objective

1. To develop basic skills for converting design on paper into a stitched garment
2. To understand the requirement of hands-on experience of working on a power machine as an essential and integral part of these practical exercises.

### Procedure (General instructions)

1. Undertake prior planning and clarity for the performance of the exercises. This includes reading of handouts, appropriate lab manuals and textbooks before performing the practical.
2. Follow all precautions and regulations while working in the lab.
3. Listen carefully to any introductory remarks and experimental procedure given by the teacher.
4. Ensure that your working space is clean and organized and all the required stocks and materials are kept ready.
5. Record Practical Result in the recommended record/file neatly and legibly with care. under the following headings:

#### 1 Introduction/Aim

State the purpose and objectives of the experiment precisely in two or three sentences.

#### 2. Materials and methods

The requirement like equipment, materials, etc. should be given here. Methods should also be described along with principles of the techniques used.

#### 3. Sample / Results

The sample should be attached.

#### 4. Discussion and Conclusions

Results should be interpreted and conclusions drawn.



## 5. References

Reading materials which were consulted for the experiment be given as reference (e.g. your lab manual) along with the name of the author and the book, pages referred and year of publication.

### Safety rules in the laboratory

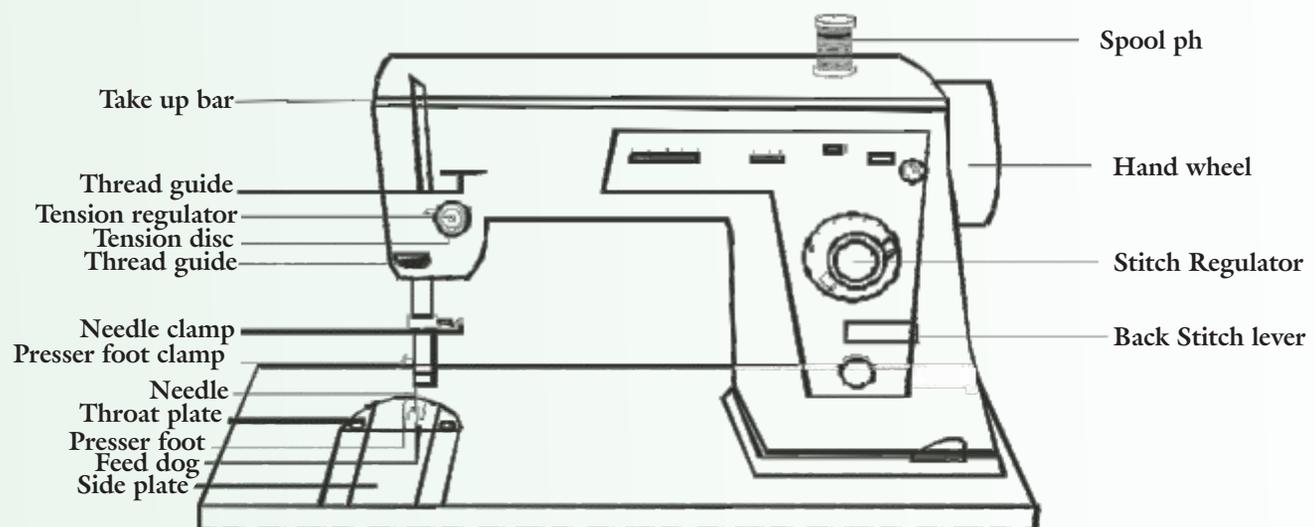
Safety rules to be observed while working on the machine: Safety is important to everyone and it is ones responsibility to maintain a safe working place.

- ❖ When operating the machine, do not be careless.
- ❖ Always inspect the machine before starting the work. Be sure it is clean and threaded correctly, with no loose threads on the pulley belt and all guards in place.
- ❖ When in doubt, ask the teacher.
- ❖ Report any injuries or accidents immediately to the teacher.
- ❖ Wipe up any oil spilled on the floor immediately to prevent anyone from slipping.
- ❖ Operate machines only with permission.
- ❖ When sewing on a power machine, wear low shoes and close-fitting clothing. Avoid loose-fitting sleeves, sweaters, jewellery, ties and ribbons when operating the machine. If your hair is long, tie it at the back.
- ❖ Do not tilt your chair forward or backward while operating the machine.
- ❖ Use both hands to raise and lower the machine head.
- ❖ Always keep your head above the table.
- ❖ Keep your feet off the treadle when you are not operating the machine.
- ❖ Keep your feet off the treadle when you are setting or threading the needle.
- ❖ Turn the motor off when you are not stitching.
- ❖ Turn the motor off before cleaning, oiling or adjusting the machine.
- ❖ Turn the motor off before removing or replacing the pulley belt and run the machine out. Wait until all motion has stopped.
- ❖ Turn the motor off in case of an emergency or when in doubt.
- ❖ Turn the motor off before unplugging the machine.
- ❖ Do not use your hand to stop and start the hand wheel.



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- Use your hand only to set the hand wheel.
- Before operating the machine, close the slide bed cover. When operating the machine, keep your hands, scissors and other sharp objects away from the belt.
- Keep the machine and work station clean with all tools in the side drawer.
- Unplug the machine at the end of the day.
- Know the location of the main power switch, outlets and fuses in case of an emergency.
- Do not remove any safety devices from the machines.
- Turn off the iron at the end of the class.
- Always place the iron on the iron pad to avoid burning the ironing board cover.
- When trimming or cutting, put all trimmings in the wastebasket.
- Scissors should be handed to another person with the handles toward the person.
- Never toss or throw scissors or equipment.
- Do not eat or drink in the work area.
- Keep your machine covered when not in use.





## PRACTICAL EXERCISE 13

### Objective

1. To develop familiarity with the machine
2. To learn how to thread the machine

### Principles

The sewing machine is an important piece of sewing equipment. A basic understanding of how the machine operates will enable the student to use any machine efficiently and correct stitching defects. The stitch looks same from both the sides and is absolutely flat. It is important for a beginner to learn to thread the machine correctly as a lot of problems in stitching and final seams occur due to incorrect threading. The machine will not work properly until it is threaded in the right sequence. The student should be able to control the sewing machine to make straight line, curved lines and shapes on fabric.

### Requirements

1. Machine, thread and sewing kit (as given in Annexure I)
2. Nine pieces of muslin of 7" x 7"

### Pre Lab Preparation

Student should be familiar with the safety rules.

### Procedure

1. Identification of the following machine parts:
  - ❖ Arm
  - ❖ Back Stitch Lever
  - ❖ Bed
  - ❖ Bobbin
  - ❖ Bobbin case
  - ❖ Bobbin Winder
  - ❖ Feed Dog
  - ❖ Hand -wheel



# Fashion Studies

- ❖ Hand Lifter
- ❖ Head
- ❖ Knee Lifter
- ❖ Needle Bar
- ❖ Pan
- ❖ Presser Foot
- ❖ Presser Foot Lifter
- ❖ Shuttle
- ❖ Stitch Regulator
- ❖ Tension Regulator
- ❖ Thread stand or Spool Pin
- ❖ Thread take up lever
- ❖ Throat Plate

## 2. Learn to operate treadle

## 3. Turn the hand wheel

## 4. Switch on the machine

## 5. THREADING

### a. UPPER THREADING

The thread is fed from the spool through the tension discs and then to the take-up lever before it is threaded through the needle.

Before threading the machine

1. Raise the pressure foot
2. Always have the take-up lever to its highest point before threading

The following steps need to be followed in exact sequence-

- ❖ Place spool of thread on spool pin. Be sure nick on spool will not catch thread as it is reeled off spool. Take hold of thread end.
- ❖ Pass thread end through first thread guide.



- ❖ Bring thread down toward the tension assembly.
- ❖ Pass thread under and around tension discs, taking care that it falls between two of the discs.
- ❖ Pull thread upward and then let it go slack. This allows thread to be caught by the hook and thread check spring, which together hold thread in position between tension discs.
- ❖ Bring thread up and behind next thread guide.
- ❖ Pass thread into the take-up lever.
- ❖ Bring thread down and through thread guides.
- ❖ Pass thread end through eye of needle, being sure that it goes in proper direction for machine. Pull at least 3" of thread through needle.

## b. LOWER THREADING

- ❖ Threading the lower portion of the machine involves threading the bobbin into its case.
- ❖ Insert the filled bobbin into the bobbin case so that the thread is pulled back on itself through the spring.
- ❖ Fit the bobbin case into the machine, holding the case by the lever on the back. The open lever locks the bobbin into the case.
- ❖ Push the case into the socket until it clicks then release the lever, close the cover. If it does not click, the mechanism inside is not aligned.

## c. RAISING THE BOBBIN THREAD

- ❖ To raise the bobbin thread, thread the needle, holding the top thread, turn the hand wheel with the other hand until the needle has gone down in the bobbin area.
- ❖ Bring the needle up again to the highest point, still holding the thread and rotating the hand wheel. With the needle, a loop of bobbin thread will also come up.
- ❖ Pull the upper thread to bring the bobbin thread out. Take both threads through the pressure foot and bring them toward the back. The thread ends should be at least 2" - 3" long.

## 6. Machine Practice

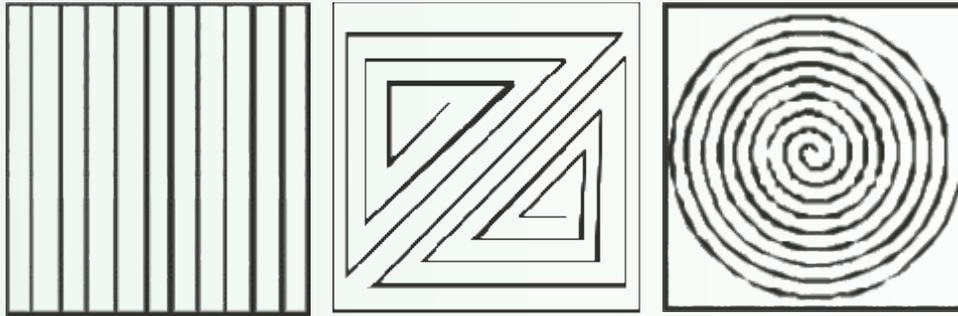
All the exercises are to be done on fabric - first on single layer of muslin and then on double layer. Stitch the following:

- a) Parallel lines



# Fashion Studies

- b) Corners
- c) Curved lines



## Observations

The student should be able to identify all parts of the machine and understand the importance of each part. If the machine is threaded properly it will run smoothly.

Take care while stitching to ensure the following:

- I. All lines are parallel
- ii. Corners are at 90 degrees
- iii. Curves are smooth
- iv. There are no puckers and seam slippage

## Viva Questions

- 1. What all does bed of sewing machine contain?
- 2. What are the different parts required for threading the machine?
- 3. What problems are you likely to face when the upper thread is not in right place?
- 4. If bobbin thread is not pulling up, what may be the cause for it?
- 5. How do you ensure that your corner is perfect?
- 6. How do you ensure parallel lines?



## PRACTICAL EXERCISE 14

### Objective

1. Prepare samples of seams

### Principles

Seams are result of joining together two or more pieces of fabric by means of stitching. The basic function of a seam is to hold pieces of fabric together. In order to perform its function correctly, the seam should have properties or characteristics closely allied to those of the fabric being sewn.

- i. A curved seam requires careful guiding as it passes under the needles so that the entire seam line will be the same even distance from the edge. To get better control, use a shorter stitch length (15 per stitch) and slower machine speed.
- ii. A cornered seam needs reinforcement at the angle to strengthen it. This is done by using small stitches (15 to 20 per inch) for 1" on either side of the corner. It is important to pivot with accurately.
- iii. A seam finish in which a line of machine stitching is made  $\frac{1}{4}$ " from the raw cut edge before pinking. It is done to prevent the pinked edge from raveling, to prevent the seam from curling & on fabrics which ravel slightly. It is a quick and easy finish suitable for firmly woven fabrics.

### Requirements

1. Machine & sewing kit (as given in Annexure I)

### Pre Lab Preparation

1. Eight pieces of muslin of 6"x 6" each

### Procedure

#### a. Straight Seam

1. Lay two layers of material together, right side facing right side.
2. Machine stitch at edge leaving an allowance of 1". Start with backstitch and end with backstitch.
3. Press opens the seam, to avoid bulkiness and to make it smooth and flat.

#### b. Curved seam

1. Stitch a line of reinforcement stitching just on seam line of the curve.
2. Clip into seam allowance all the way to the stitching line at intervals along the curve.



# Fashion Studies

3. Cut out wedge-shaped notches in the seam allowance of outer curve by making small folds in seam allowance and cutting at slight angle. Be careful not to cut into stitching line.
4. Press seam open over the curve, using tip of iron only. Do not press into body of the sample. If not pressed to required curves, seam lines become distorted and look pulled out of the shape.

## c. Cornered Seam

1. To join an inward corner with an outward corner or straight edge, first reinforce the inward angle stitching just inside the seam line 1" on either side of corner.
2. Insert a pin diagonally across the point where stitching forms the angle clip exactly to this point, being careful not to cut past the stitches.
3. Spread the clipped section to fit the other edge; pin in position then with clipped side up, stitch on the seam line pivoting at the corner

## d. Stitched & pinked seam

1. Take two layers of fabric, right side facing right side; stitch on wrong side, leaving a distance of 1" from edge. Press open the seam allowance. (straight plain seam)
2. Using a short stitch place a line of a stitching  $\frac{1}{4}$ " away from the edge of the seam allowance. On the one side of seam allowance. Repeat the same on the other end of seam allowance.
3. Then pink the outer edge of the seam allowance away from the seam you have just applied.
4. Press open flat seam allowance.

## Observations

Check if the seam line is straight and there are no puckers or pulls. Ensure that the corners are at perfect right angle. Ensure that the fabric does not ravel after pinking.

## Viva questions

1. What are the qualities of a straight seam?
2. How many stitches per inch should be used for cotton fabric?
3. Where all do you use the straight seam?
4. What are the qualities of a curved seam?
5. How many stitches per inch should be used for cotton fabric?
6. Give two uses of curved seam.

# Fashion Studies



7. Where all do you use the cornered seam?
8. Why do we need to reinforce the corner seam?
9. How does pinking help in finishing the sample?
10. Give names of fabric for which Pinked seam is most suitable for.



## PRACTICAL EXERCISE 15

### Objective

1. To prepare samples of seam finishes

### Principals

A seam finish in which the raw edge of the seam allowance is turned under stitched and concealed. This is a neat tailored finish for light to medium weight fabrics of cotton, linen and viscose. A seam which has been pressed open and stitched parallel to and on both sides of the seam line, through garment and seam plies.

### Requirements

Machine & sewing kit (as given in Annexure I)

### Pre Lab Preparation

1. Eight pieces of muslin of 6"x 4" each
2. Two pieces of light weight muslin on bias grain of 1" x 6" (Hong Kong seam)

### Procedure

#### a. Turned and stitched seam

1. Take two layers of fabric, right side facing right side, stitch from wrong side at a distance of 1" from the edge. Press open the allowance. (straight plain seam)
2. Turn under the edge of the seam allowance  $\frac{1}{4}$ " stitch along the edge of the fold. Repeat the same step on the other edge of seam allowance.

#### b. Hong Kong seam

1. Place two layers of fabric right side facing right side. Stitch at a distance of 1" from the edge on wrong side. Press opens the allowance.
2. Using 1" wide bias strip, with right sides together stitch bias strip to seam allowance  $\frac{1}{4}$ " from edge on one side of the seam allowance.
3. Turn bias over edge to the underside and press. From the right side. Stitch in the crevice of the first stitching (stitch in ditch) trim unfinished edge of bias.
4. Finish the other side similarly.



## French seam

1. Lay two layers of material together, wrong side facing wrong side. The first stitch is 1/8" or 1/4" outside the fitting line, depending on the desired finished width of the seam. Trim the edge so that it is less than desired finished width of the seam. It looks best when finished width is 1/4" or less.
2. Press the seam in one direction. Turn the fabric so that right side is facing right side. Fold on the line of stitching. Machine stitch on the seam line. Since the raw edges are enclosed, this seam requires no special finish

## Double Top Stitched Seam

1. Take two layers of fabric, right side facing right side, stitch at a distance of 1" from the edge on wrong side. (straight plain seam)
2. Press plain seam open. Top stitch at equal distance from each side of seam line, (1/4" away from seam line on both sides) catching seam allowances into stitching.

## Observations

1. Check if the seam line is straight and that there are no puckers or pulls.
2. The edges should be neatly concealed in the bias strip.
3. The seam should not be too broad and bulky.
4. The edges should be neatly enclosed in the seam.
5. The stitch line should be uniform on the both sides of the seam.
6. The under layers should be flat and pressed open.

## Viva questions

1. Where is the Turned and Stitched seam used?
2. How is this seam different from the Stitched and Pinked seam?
3. Where is the Hong Kong seam used?
4. How is this seam different from the Turned and Stitched seam?
5. What are the advantages of a French seam?
6. Where is the French seam used and why?
7. Give other names of this seam?
8. Give two uses of the seam and where it can be used as a decorative seam.
9. Can variations of these seams be created?





## Gathers

1. Take a bigger fabric piece and from the right side stitch (8 to 10 per inch) one basting line just next the seam.
2. Stitch another line (on the same single piece of fabric)  $\frac{1}{4}$ " away in the seam allowance.
3. Pin seam edges together at matching points, such as notches.
4. Draw up bobbin threads, distributing fullness evenly and with drawn threads wound around a pin on either side to secure gathers.
5. Pin baste and stitch seam with gathered side up.

## Pleats

1. Mark and fold the pleats as desired.
2. Stitch on the seam line  $\frac{1}{4}$ " away in the seam allowance.
3. Now stitch the pleats in place and finish as desired.

## Tucks

1. Mark and fold the tucks as desired.
2. Stitch on the seam line of the tuck as shown.
3. Now finish the sample as desired.

## Observations

The gathers should be distributed evenly and should not form pleats.

The pleats should be even and according to the design.

The tucks should be of even depth and equally distributed.

Ensure that the seam line is straight and that there are no puckers or pulls.

## Viva questions

1. What stitch size should be used for gathering?
2. Why are two rows of stitch line needed to gather evenly?
3. How much extra fabric is required for 2 box pleat of 2" depth?
4. What is the best way to finish the pleats?
5. What is the ideal width of pin tucks?
6. Why are they called pin tucks?



## ANNEXURE - I

### Sewing Kit

**All pins:** Fine, long, rust proof pins.

**Magnetic pin holder / pin cushion:** to hold pins.

**Muslin:** Fabric used for experimentation and develop toiles

**Push pins:** Drum shaped ½" long pins to hold pattern pieces and fabric on table.

**Tracing wheel:** Instrument with small serrated or needle point wheel mounted on one end of a handle used for transferring markings from paper patterns on the muslin.

**Tailors chalk:** To mark on fabric

**12" / 24" scale:** To mark straight lines to measure.

**Measuring tape:** Metal tipped narrow, firmly woven double tape of cloth or plastic usually 60" long (150cm) marked with both inches and centimeters.

**Grading scale:** Transparent plastic ruler with grid 2" X 18" in length indicating fraction of inches (or millimeters).

**L-square:** Plastic or metal ruler with two arms at right angles of varying lengths usually 12" and 24" to square off corners.

**Carbon paper:** Coated paper on one side with white or coloured wax to transfer marking on fabric or paper.

**Transparent tape:** To secure paper pieces together and mend tears

**Paper shears/scissors:** Cutting instrument, ranging in size from 8" to 12" with two sharply pointed straight blades, to cut paper patterns.

**Tailors shears:** Cutting instrument ranging from 12" to 16" with two wide blades, to cut fabric and muslin.

**Magnet:** a high carbon alloy steel that has a property of attracting iron and steel can be of any shape, to pick up pins and needles.



## ANNEXURE - II

### Common Machine Problems

1. The student needs to identify the common problems encountered while sewing.
2. The person operating the machine should be able to rectify these and solve the problems.

### Bobbin

1. **Does not wind :**
  - ❖ Make sure the thread is wrapped around the bobbin in proper direction.
  - ❖ Check to see if bobbin has been placed properly in the winder.
  - ❖ The rubber ring might be worn out and needs to be replaced.
2. **Winds unevenly :**
  - ❖ The thread may not be inserted in the thread guide.
  - ❖ You may be running the machine too fast.
  - ❖ The tension spring may need adjustment.
3. The Needle moves up and down during winding
  - ❖ Needle has not been disengaged

### Fabric

1. Layers feed unevenly
  - ❖ Presser foot pressure incorrect
  - ❖ May need to stitch slowly
  - ❖ The fabric may be very light weight use tissue paper while stitching
2. Does not feed in straight line
  - ❖ Presser foot may be loose or bent
  - ❖ Pressure of the presser foot may be incorrect
  - ❖ Needle may be bent
  - ❖ There may be a defect in the machine feed
  - ❖ You may be pushing or pulling the fabric



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3. Puckers when stitched
  - ❖ Many fabrics pucker when stitched in a single layer
  - ❖ The stitch length may be not in correct relation to the fabric type
  - ❖ If the fabric is sheer or light weight, the presser foot tension may need to be regulated
  - ❖ Thread may be too thick
  - ❖ Needle may be coarse
  - ❖ Bobbin thread may be uneven
  - ❖ Stitch tension may be unbalanced
  - ❖ Feed dog may be worn out
4. Shows feed mark on the underside
  - ❖ Presser foot pressure may be too heavy. You may need to put tissue paper between the fabric and the feed
  - ❖ The feed may be damaged or set too high
5. Fabric is damaged or holes around the stitches
  - ❖ Check needle type suitable for fabric.
  - ❖ Needle may be blunt or too coarse.
  - ❖ Check for the nick in the throat plate, foot or feed

## **MACHINE**

Motor does not run

1. Cord is not plugged in.
2. Power switch off.
3. Knee or foot accelerator may be jammed or improperly attached to power source.

### **Motor runs but hand wheel does not turn**

1. Thread or lint may be caught or tangled in the bobbin case area.

### **Motor runs, hand wheel turns, but needle does not move**

1. The needle may have been disengaged for bobbin winding and not tightened back to sewing position



2. If needle has been tightened but still does not move, the motor belt is slipping because it is loose or worn.

### **Motor, hand wheel and needle moves but fabric does not feed**

1. Make sure the presser foot is down
2. Check the stitch length regulator
3. The pressure regulator may be at the least/ light pressure. If fabric is heavy, more pressure may be necessary for fabric to feed.
4. The feed dog may be in the lowered or "down" position

### **Motor, hand wheel, needle and fabric moves but no stitch is formed**

1. Thread may have come out of the needle.
2. Needle may be threaded in the wrong direction.
3. Needle may be inserted backward or may not be pushed all the way up into the clamp.
4. Needle may be the wrong length for the machine.
5. Machine may be threaded incorrectly
6. Bobbin may be empty
7. Bobbin and / or case may be inserted incorrectly
8. The timing of the machine might be off

### **Runs sluggishly**

1. Bobbin winder may still be engaged
2. Knee or foot control might be improperly positioned
3. Machine may be in need of oiling and / or cleaning

### **Runs noisily**

1. Machine probably needs oiling and / or cleaning
2. The needle could be bent and hitting against foot or throat plate
3. Bobbin and / or case may not be tight enough
4. Bobbin may be almost out of thread.



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## **Will not stitch in reverse**

1. If machine is very old, it may not have this capability
2. If it is a recent model, check the stitch control. It may be set for "stretch stitch" or "buttonhole". Sometimes these stitches cannot be reversed manually.

## **NEEDLE**

### **Unthreads**

1. Insufficient thread may have been pulled through the needle before the seam was started
2. Machine may be out of top thread

### **Breaks**

1. You may be using the incorrect presser foot
2. Presser foot and / or throat plate may be loose or improperly fastened.
3. Needle might have bent and hit the presser foot and / or throat plate
4. Needle may be incorrectly inserted
5. Needle might be too fine for the fabric being sewed and for the job being done
6. You may have pulled too hard on fabric while stitching
7. Check machine settings.
8. Needle may be defective

## **STITCHES**

### **Are uneven lengths**

1. You might be pushing or pulling the fabric too much
2. Pressure on the presser foot could be either too light or too heavy for the fabric
3. There could be lint or other clog between the teeth of the feed dog

### **Have loops between them**

1. If the loops are large, the machine is improperly threaded
2. If loops are small tensions are unbalanced
3. Bobbin may be wound unevenly
4. There may not be enough pressure to hold the fabric taut during stitch formation



## **Skip here and there**

1. Needle may be blunt or bent
2. Needle may be inserted backward or it might not be all the way up into the clamp
3. There may be insufficient pressure on the presser foot
4. Throat plate may be wrong for the purpose
5. You may be stitching at an uneven speed
6. While stitching, you may be pulling too hard on the fabric

## **THREAD**

### **Needle thread breaks**

1. Usually this is caused by the needle being inserted backward or threaded backward
2. Thread may be caught in the spool notch or it could be wrapped around the spindle
3. There may be a rough or burred place on a thread guide
4. The needle may be blunt
5. Needle may not be all the way up into the clamp
6. Needle may be too fine for the thread, causing it to fray-often the case with silk buttonhole twist
7. check thread quality

### **Bobbin thread breaks**

1. Bobbin case may not be threaded properly and / or the case not inserted properly
2. Bobbin may be too full
3. Check for dirt or clog in the bobbin case
4. Bobbin tension may be too tight

### **Bobbin thread cannot be raised through hole in throat plate**

1. Bobbin case may be improperly threaded.
2. It may not have been properly inserted



# Fashion Studies



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