

Department of Life and Consumer Sciences

Clothing Construction: Theory

Only study guide for
CLO1501

University of South Africa, Pretoria

© 2017 University of South Africa

All rights reserved

Printed and published by the University of South Africa Muckleneuk, Pretoria

CLO1501/1/2018

70614687

Editor and Styler

HSY_Style

CONTENTS



Preface	(v)
LEARNING UNIT 1: EQUIPMENT	1
LEARNING UNIT 2: FIT AND FITTING, PATTERNS, FABRICS AND CUTTING	12
LEARNING UNIT 3: STITCHES AND SEAMS	24
LEARNING UNIT 4: GARMENT SHAPING DEVICES	32
LEARNING UNIT 5: NECKLINES AND COLLARS	35
LEARNING UNIT 6: SLEEVES AND SLEEVE FINISHES	39
LEARNING UNIT 7: POCKETS	42
LEARNING UNIT 8: HEMS	45
LEARNING UNIT 9: FASTENERS	47

PREFACE

Welcome to the module, **Clothing Construction: Theory (CLO1501)**. I hope you will have an interesting and successful academic year. This module will focus on the equipment, techniques and processes used in clothing construction. It will assist you in making well-informed choices regarding equipment and processes that are suitable for specific fabrics and garment details when creating original designs or adaptations of existing designs. A thorough knowledge of the principles of garment construction, production and assembly are essential when creating original designs or adapting existing designs. Look at the clothes you wear to identify and understand the different construction methods.

If you have any queries/questions about the module, you are welcome to contact me by e-mail or telephone.

My contact details are as follows:

 My telephone number	+27 (0)11 471 2039
 My e-mail address	makopmm@unisa.ac.za You are more than welcome to e-mail any query to me, and I'll do my best to assist you.

You may also make an appointment to see me in my office at the Unisa Science Campus in Florida.

I wish you all the best in your studies.

Ms M Makopo

MODULE OVERVIEW

This module overview will provide you with some essential information. The content of this learning unit will help you familiarise yourself with the online environment and give you some important information regarding the module. For those students who will be doing the module online, click on the “Learning Units” tool in the left-hand menu option of the module site and familiarise yourself with the following introductory sections:

- Purpose and outcomes of the module
- Learning resources
- Module specific study plan
- Navigating myUnisa
- Assessment plan
- Additional information and student support

These sections include all of the answers to your questions, such as, Where is my study material? Where is my assignment? Where is the study guide?

In order for you to complete this module online, you will need to have access to a computer, the internet and the Unisa library. You will need to do a lot of research to complete the assignments and you will also be required to access several websites. You can also visit the Unisa library to obtain this information as well as a platform to research not only journal articles but books as well.

We wish you success on your journey.

PURPOSE AND OUTCOMES OF THE MODULE

On completion of this module you should be able to justify choices concerning the selection of equipment, techniques and processes to construct a garment.

More specifically, after completing the module, you should be able to:

- demonstrate your knowledge and understanding of the basic principles of clothing construction
- identify different types of equipment used in construction and explain their purpose and functions
- identify different types of stitches and seams and explain when, where, and how they are used in clothing construction
- identify different types of necklines, collars, sleeves, pockets, hems, fasteners and ways of disposing of fullness
- make well-informed choices concerning the selection of patterns, notions, equipment and processes to construct a garment

LEARNING RESOURCES

After registration, you received Tutorial Letter 101 and the study guide. You may also receive additional tutorial letters during the course of the semester.

Check the module site regularly for updates, posted announcements and additional resources uploaded throughout the semester. Rapid communications throughout the semester(s) have been made possible through myUnisa. By using the myUnisa site, you can:

- submit assignments (**please note: it is advisable that you submit your assignment online as this will ensure that you receive rapid feedback and comments**)
- access your official study material
- have access to the Unisa library functions
- “chat” to your lecturer or to fellow students and participate in online discussion forums
- gain access to a variety of learning resources

Please take some time to familiarise yourself with the module site so that you get to know where the different menu options and resources are. I will give you more information about this later in this learning unit.

Although I would like to encourage you to study this module online, we also recognise that it might be impossible for some of you to go online at all, while others might only be able to go online infrequently. For this reason, you can also use the print-based study pack that you will receive to study for this module.

Your study material for this module includes:

- the prescribed textbook
- study guide
- online learning units
- Tutorial Letter 101
- any other tutorial letters you may receive through the year

Your main learning resource for this module will be your prescribed textbook and the study guide/online learning units. The prescribed book to be used in conjunction with the study guide/online learning units is:

Prescribed Book – SHAEFFER, C. (2014). *Sewing for the apparel industry*. 2nd ed. Pearson Education Limited. ISBN: 978-1-29203-946-6 (Pearson New International Edition).

Recommended book – READERS'S DIGEST. (2010). *New complete guide to sewing*. Sydney: Reader's Digest Association. ISBN: 978 0276 446 412.

MODULE-SPECIFIC STUDY PLAN

Planning your study programme and managing it during the semester is going to be a unique experience for each one of you taking the module. Read the *my Studies@Unisa* brochure for general time management and planning skills. Below please find a detailed study plan for this module. Please note that this only provides you with some guidance and you can still work at your own pace. However, by following this plan for a semester you can be sure that your assignments will reach me on time and that you will be prepared for the examination.

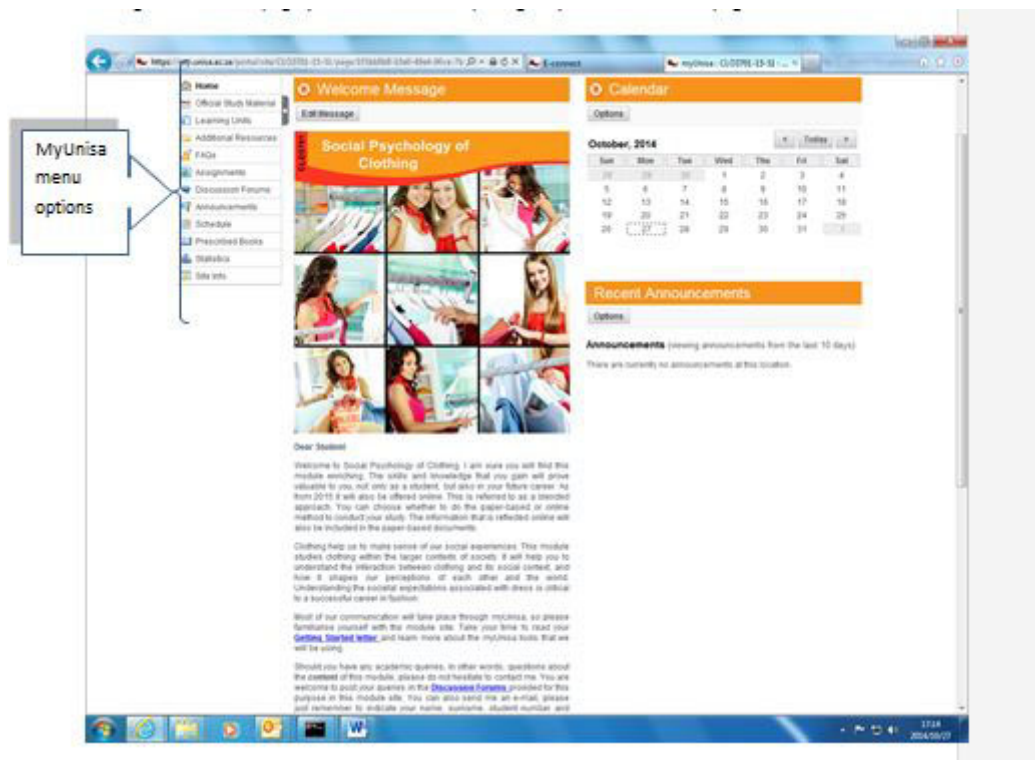
Activity	Hours
Reading the study guide/online learning units	20
Reading relevant chapters in the prescribed books	30
Working through the activities in the learning units	15
Answering and submitting the assignments	10
Studying the prescribed books and learning units and making summaries	35
Final revision for the examination	10
Total	120

NAVIGATING MYUNISA

myUnisa works just like other websites. You can use various menu options, displayed on the left-hand side of the screen, to navigate your way through the module site. There will also be links provided in the text that may take you away from the myUnisa site or to other menu options in the site.

Click on the specific menu option, and it will open the page containing the information you are looking for. The first page you will see when opening any site is the Home page.

FIGURE 1
Example of a Home page



For those of you who will be doing the module online, click on the links below to access the various menu options that you will use in this module site. You can find them in the left-hand menu of your module site. They will enable you to participate actively in the learning process.

- **Announcements:** From time to time I will use this facility to give you important information about this module. You should receive e-mail notifications of new announcements placed on myUnisa.
- **Official Study Material:** This tool allows you to access and download the official study material, such as the study guide and Tutorial Letter 101.
- **Schedule:** This tool gives you access to important dates and details about events, such as examination dates and deadlines for your assignments. You will need this information to help you manage your time and plan your own schedule.
- **Additional Resources:** This tool allows you to access any additional learning support material that might help you in your studies for this module. I will send an e-mail alert or announcement to inform you if I add anything to this folder.
- **Assignments:** This tool allows you to submit your assignments electronically, and to monitor your results. If you can, please submit your assignments via myUnisa. If you do not know how to do this, consult Tutorial Letter 101.
- **Frequently Asked Questions:** The FAQs tool on the module site provides questions and answers relating to the specific module. These are grouped in various categories ranging from module-related information, assessment matters, communication with the university, study guidance, etc. If you have any queries about the modules, start by consulting the FAQs. If you don't find an answer to your question, please feel free to contact your lecturers.

I hope you will enjoy this module and use the opportunity to meet and support each other in a virtual environment.

ASSESSMENT PLAN

General information regarding assignments

There are two assignments and one examination per semester. You can be registered either for Semester 01 or Semester 02. You will find two assignments in Tutorial Letter 101 of this module.

Summary of YOUR responsibilities for CLO1501

Read through and study each learning unit carefully and make summaries.

- Study the garments in your wardrobe and try to identify the construction methods used to produce the garments.
- Complete the assignments and submit them on time. (You need to submit Assignment 01 on time to gain admission to the examination.)
- Prepare for the examination.
- Write the examination.

Portfolio

This module is closely linked with CLO1602 – Clothing Construction: Practical, and is a co-requisite for the practical module. As with all your previous Clothing and Textile studies, you will need to build up a **portfolio** in which you file your activities and other related material you have collected. This portfolio will serve as a reference throughout your studies for clothing modules. You will have to consult the CLO1501 study guide for these activities.

Assessment criteria

- Evidence must show that you understand the basic principles of clothing construction.
- You will be required to apply your theoretical knowledge in practical situations by selecting suitable equipment, fabrics and processes, and justifying your choices.
- Your knowledge will be assessed through assignments and an examination consisting of short and essay-type questions.

This is a 12-credit module. This means that the average student will need to work 120 hours in order to complete and pass the module. This includes time spent on completing assignments and studying for the examination. Starting immediately after registration closes, you will need to spend an average of eight hours per week on this module. By the time you have submitted the first assignment you should already have spent 30 hours on CLO1501.

Formative assessment

Assignment 01 (10%) + Assignment 02 (90%) = Year mark (30% of final mark)

Summative assessment

Examination at the end of semester = Examination mark (70% of final mark)

Assignment number, unique assignment number and due date

SEMESTER 01 Assignment number	Unique assignment number	Due date
Assignment 1	See tutorial 101	See tutorial 101
Assignment 2	See tutorial 101	See tutorial 101
SEMESTER 02 Assignment number	Unique assignment number	Due date
Assignment 1	See tutorial 101	See tutorial 101
Assignment 2	See tutorial 101	See tutorial 101

Submission of assignments

The assignments that you are required to submit during the year must reach Unisa on or before the due date stipulated. To ensure that we receive your assignments in time, please complete and post them at least a week before the due date or submit them through myUnisa. **Assignments sent by e-mail or hand delivered will NOT be accepted.**

In exceptional circumstances only, a valid medical certificate with a valid long-term illness will be considered as a reason for submitting an assignment late, provided you notify the lecturer well in advance. If no arrangements are made, the assignment will not be marked. Please attach the medical certificate to the back of your assignment. Please note that NO extensions will be given on any assignment without a valid medical certificate.

How to receive quick online feedback and comments to your assignments

Unisa is implementing onscreen marking of assignments to help you receive quicker feedback on your assignments. This will not be the case for all your modules; however, most modules from the Department of Life and Consumer Sciences can be marked this way.


To allow us to mark your assignment onscreen, you need to do the following:

Convert your electronic assignment to PDF format as we can only assess assignments submitted in PDF format onscreen. Therefore, if you submit your assignment for onscreen marking, but in another format (MS Word), it is likely that your assignment will not be assessed onscreen and you will be sent a hard copy of your assignment with the lecturer's comments through the post.

How do I create a PDF document from any other document format (e.g. MS Word, MS Excel)?

By quickly downloading FREE software (namely PrimoPDF), you can create a PDF document from any type of document you can print. Follow these easy steps:

- Go to the Internet to the following website: <http://www.primopdf.com/index.aspx>
- Download the PrimoPDF software by clicking on the DOWNLOAD FREE prompt. Follow the instructions for installing the software.
- To create a PDF document from your assignment, go to your assignment on your PC and instead of printing your assignment to an actual printer, choose PrimoPDF as

printer. To do this, click on the Microsoft Office Button  (or File button for older versions of Microsoft), and click Print. Then, from the drop-down list, choose the printer which in this case should be PrimoPDF.

- You will now receive a pop-up message. Click the Create PDF button. Indicate in the Save as: pop-up where you want to save the PDF assignment on your PC.
- The PDF version of your assignment will now appear for your viewing.

(Please **do not submit a zip file**. ONLY a PDF will be accepted.)

Submit the PDF document (your assignment) via myUnisa (online). For guidance on how to submit an assignment via myUnisa, see the *My studies @ Unisa* brochure (information is also given below).

To submit an assignment via myUnisa:

- Go to *myUnisa*.
- Log in with your student number and password.
- Select the module.
- Click on assignments in the menu on the left-hand side of the screen.
- Click on the assignment number you wish to submit.
- Follow the instructions.

Assignments may not be submitted by fax or e-mail. For detailed information and requirements as far as assignments are concerned, see the brochure *myStudies@Unisa* that you received with your study material.

For detailed information on assignments, please refer to the *myStudies@Unisa* brochure, which you received with your study package.

Commentaries and feedback on assignments

The lecturer will comment constructively on your work. Do not view the feedback in a negative manner, it is meant to improve your writing skills.

As soon as you have received the commentaries, please check your arguments and the way in which you have approached the assignment. The assignments and the commentaries on these assignments constitute an important part of your learning and should help you to be better prepared for the next assignment.

However, commentaries **will be made available to all students registered for this module** in a follow-up document, under Additional Resources or in Tutorial Letter 201, when necessary.

You will also receive general feedback through announcements placed on myUnisa. Always refer to myUnisa for feedback.

Additional information and student support

General documents

For additional information we have prepared Tutorial Letter 301 as well as a Tutorial Letter 302 to assist you with completing your modules. TUT301 is an extremely important document that you need to work through in order to complete your assignments in a scientific manner and to avoid plagiarism. TUT302 is a glossary containing terms that you might find useful in explaining difficult concepts.

Frequently asked questions

The *myStudies@Unisa* brochure contains an A–Z guide of the most relevant study information.

Student support services

The Directorate for Counselling, Career & Academic Development (DCCAD) supports prospective and registered students before, during and after their Unisa studies. There are resources on their website, and also printed booklets available to assist you with:

- career advice and how to develop your employability skills
- study skills
- academic literacy (reading, writing and quantitative skills)
- assignment submission
- exam preparation

Contact details

Website	http://www.unisa.ac.za/counselling
E-mail for counselling	counselling@unisa.ac.za
E-mail for Academic Literacy	acalit@unisa.ac.za

Plagiarism

Do not try to pass off other people's work (or our lecture notes and tutorial matter) as your own. If you wish to use other people's words and ideas or our notes in your own answers, you must acknowledge your source (using the Harvard method). Students who fail to acknowledge the source or borrow from lecture notes and outside sources or who copy someone else's answers may be refused permission to write the examination or will get penalised strictly in the assignment. Refer to Tutorial Letter 301 for more details.

LEARNING UNIT 1

EQUIPMENT

CONTENTS

1.1	SMALL SEWING EQUIPMENT	2
1.1.1	Measuring tools	2
1.1.2	Marking tools	3
1.1.3	Cutting tools	3
1.1.4	Sewing aids	4
1.1.5	Pressing tools	5
1.1.6	Pressing techniques	6
1.2	THE SEWING MACHINE	6
1.2.1	Basic parts of the sewing machine	6
1.2.2	Threading the machine	6
1.2.3	Machine needles	6
1.2.4	Stitch tension	7
1.2.5	Using the sewing machine	8
1.3	THE OVERLOCKER/OVEREDGE MACHINE/SERGER	8
1.3.1	Background	8
1.3.2	Ways in which an overlocker differs from a normal sewing machine	8
1.3.3	Parts of an overlocker	9
1.3.4	Types of overlockers	9
1.3.5	Rules for using an overlocker	9
1.3.6	Other industrial machines	9

Learning outcomes

After studying this learning unit, you should be able to:

- identify the different smaller tools used for sewing and discuss the function of each
- explain the importance of pressing
- understand how a lockstitch is formed
- compare the industrial lockstitch machine and the home sewing machine
- identify and explain the functions of the parts of the lockstitch machine – industrial and home sewing
- select the correct needle or pressing aid for different applications
- discuss the rules for pressing
- discuss the ways in which an overlocker, overedge machine, or serger differ from a conventional sewing machine
- identify the different parts of an overlocker, overedge machine or serger

LEARNING UNIT 1: EQUIPMENT

- differentiate between the different types of overlockers, overedge machine, or serger
- discuss the different uses of overlockers, overedge machines, or sergers, indicating the type of thread and stitch used for each application
- give the rules for using an overlocker
- explain what is meant by differential feed

This learning unit refers to the following chapters in your prescribed textbook:

SHAEFFER, C. (2014). *Sewing for the apparel industry*. 2nd ed. Pearson Education Limited: Chapters 1–5

INTRODUCTION

In this learning unit you will learn more about the different measuring, cutting, pressing and sewing equipment in clothing construction. It is very important to select the most suitable equipment for different applications.

1.1 SMALL SEWING EQUIPMENT

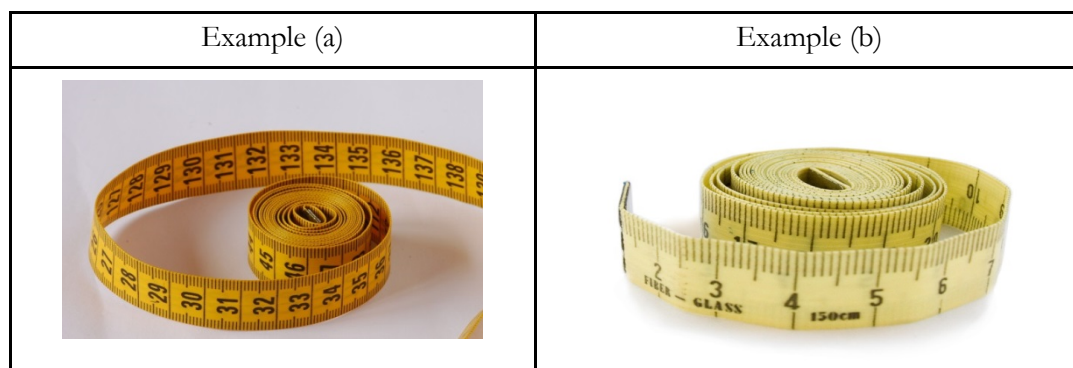
As the title indicates, the textbook is written for mass production of apparel. Most of the small equipment will not appear in your prescribed textbook but you have to know these equipment, because you will use them in the practical module (CLO1602) and in a small-scale production environment.

1.1.1 Measuring tools

The only essential measuring device, even for the beginner, is a tape measure. Buy a good quality tape measure that will not stretch or fray, and is made from plastic or fibreglass. The tape measure should be finished off with metal tips. Ensure that at least one side of the tape measure is marked in centimetres.

Make sure that you read the tape measure correctly. Look at the two illustrations in Figure 1.1 below. In example (a), the number 20 does not appear directly opposite the long line that indicates where the 20 cm mark is. In example (b), the number 20 does appear in line with the longer line indicating the 20 cm mark.

FIGURE 1.1
Examples of tape measures



https://commons.wikimedia.org/wiki/Category:Tape_measures

1.1.2 Marking tools

Transfer of pattern markings will be discussed in learning unit 2. The most common tools used to make pattern markings on the fabric are briefly discussed in the sections below. For pictures of the different marking tools, consult your prescribed and recommended textbooks.

a. Tailor's pen

Two types of felt tip pens are now available, namely a purple pen whose mark fades with time (usually after about a week) and a turquoise pen whose mark disappears in water. The fabric can be marked on the right or the wrong side of the fabric since the mark will disappear completely. Do **not** use any ordinary felt tip pen as the ink may stain the fabric permanently.

b. Tailor's chalk

Tailor's chalk is easy to use and can also be rubbed off easily, a characteristic that has both advantages and disadvantages. If the chalk is not sharp enough, the marks may be inaccurate. If you have no chalk, try using a sliver of very dry, light-coloured toilet soap. Soap markings have the added advantage of washing out completely.

c. Dressmaker's pencil

Dressmaker's pencils are also easy to use and the mark can easily be rubbed off, similar to the tailor's chalk. Be careful not to use an embroiderer's pencil as the marks will not wash out.

d. Tracing wheel and tracing paper

The tracing wheel is used together with dressmaker's tracing paper to transfer pattern markings to the wrong side of your fabric. Tracing wheels are suitable for most fabrics, but take care when using them on transparent and loosely woven fabrics.

Dressmaker's tracing paper comes in packs with different coloured carbon paper. Take care that markings do not come through to the right side of the fabrics as these are sometimes hard to remove.

1.1.3 Cutting tools

For pictures of the different cutting tools, consult your prescribed and recommended textbooks.

a. Shears

Shears are generally 17,5 cm or longer; 20 cm is a good length for your first pair. Shears are designed for cutting fabrics of different weights. They have a small handle for the thumb and a larger handle for the other fingers. The handles can be bent or straight. For most people, it is more comfortable to cut fabric using shears with bent handles.

b. Scissors

Scissors are rarely longer than 15 cm and are used for cutting threads, trimming, and clips.

c. Nippers

Nippers are used at the machine for cutting threads and small clips. They are held in the palm of the hand and have a single ring for the thumb.

d. Rotary cutter

A rotary cutter has a round blade attached to a handle. The blade rolls along the edge of the pattern, cutting the fabric. The rotary cutter is available in small and large sizes. For thicker fabrics, use the large size. Replace the blade when it is blunt.

The rotary cutter is used with a special cutting mat or board, to prevent damage to your table and the blade. Pins can damage the blade, therefore it is advisable to hold your fabric in place by using weights of small heavy objects, or make sure pins are placed away from the edge of the pattern. Cut with the blade against the edge of the pattern.

1.1.4 Sewing aids

For pictures of the different sewing aids, consult your prescribed and recommended textbooks.

a. Seam ripper

A seam ripper has a sharp point for unpicking stitches and a curved edge for cutting seams open. It is also used for cutting machine-stitched buttonholes open.

b. Pins

Pins are used to hold the pattern pieces in place when cutting. Use sharp, rust-free pins that are specially designed for dressmaking. Pins with a diameter of less than 0.5 mm are less likely to leave marks on your fabric. Office pins will stain and leave unsightly holes in the fabric.

c. Needles (hand sewing)

Hand needles are used for finishing stitches such as hems. The needle must suit the purpose and fabric type for which it is used. Use larger needles for heavier fabrics and fines needles for lightweight fabrics. The following hand sewing needles are frequently used:

- *Sharps* are the most commonly used needles for hand sewing.
- *Between*s are shorter than sharps, and may be used for fine stitches in heavy fabric, and for quilting.
- *Crewels* are sharp-pointed needles with long eyes that can accommodate several strands of embroidery thread.
- *Chenilles* are also sharp-pointed with a larger eye, but are larger than crewels and are used for embroidery thread.
- *Beading* needles are thin and long, suitable for passing through the little hole or eye of a bead.
- *Tapestry* needles have blunt points and are used for counted thread embroidery, tapestry work and for joining garments knitted in 4-ply or finer yarn.
- *Curved* needles (also called mattress or lampshade needles) are used for upholstery or in cases where using a straight needle would be awkward.

1.1.5 Pressing tools

The prescribed textbook focuses on industrial pressing equipment used in the mass production of apparel. This guide provides additional information on pressing equipment used by small-scale production units or individual designers to ensure a professional finish. For pictures of different pressing tools, consult your prescribed and recommended textbooks.

a. Sleeve board

The sleeve board is used to press narrow garment sections such as trouser legs and sleeves.

b. Seam roll

The seam roll is used to press open seams, to ensure that the edge of a seam allowance is not pressed against the fabric and forms a ridge on the right side. You can easily make your own seam roll by tightly rolling up an old magazine and then covering it with unbleached calico. Also keep a dowel stick handy for pressing long narrow sections such as straps.

c. Steamer

A lightweight plastic steamer operates with water and salt. It is small, light and easy to handle and cannot damage the fabric as the sole plate is not heated by a heating element. It works both vertically and horizontally and is excellent for delicate fabrics, fabrics with a nap (such as velvet), fabrics that shine when pressed too much (such as dark coloured wool), or knits. This is a very handy piece of equipment, but cannot entirely replace an ordinary iron.

d. Point presser

The point presser is wooden and has a sharp, pointed end that is used to press any point, such as in a collar or lapel, neatly and crisply. While it may be difficult to buy a point presser, a carpenter could easily make one. Once you are accustomed to pressing with a point presser you will not be able to do without one.

The June tailor board is the Rolls Royce of point pressers. It has a variety of possible curves for pressing, particularly when tailoring. Unfortunately, this pressing board is not readily available, but may be ordered from Nancy's Notions at www.nancysnotions.com. Use the search function to see an example of the June tailor's board. There are two of these tailor's boards in the clothing construction laboratory in Florida. Make sure that you have a look at and use them during the CLO1602 practical sessions.

e. Clapper (Tailor's pounding block)

This is a rounded wooden block used with steam to flatten seams or other construction details in heavy fabrics such as wool in tailoring, to obtain sharp creases.

f. A tailor's ham

The tailor's ham is a firm cushion that is used to press shaped areas such as bust darts and curved seams. Collars can also be moulded around a tailor's ham.

1.1.6 Pressing techniques

The importance of pressing cannot be overemphasised. Correct and timely pressing will definitely mean the difference between a homemade look and a professional finish.

Pressing is a lifting up and putting down movement, using a steam iron or a dry iron with a damp press cloth.

Ironing is a gliding movement with a bare iron in order to remove creases.

- Test the temperature of the iron on a scrap of fabric.
- Press after completing each step of your sewing. Press all the seams and darts before crossing them with another stitching line.
- Press on the wrong side of the fabric, especially if the fabric is dark coloured.
- Do not press over pins as they may damage the iron and will leave marks on the fabric. Pressing over tacking thread may also leave marks, but this is often unavoidable.
- Always press into gathers and do not flatten the gathers with the iron.
- When pressing seams, hems or darts, place a double layer of clean brown paper between the seam allowance and the garment. This prevents a ridge from showing through on the right side of the garment. Using a seam roll when pressing seams will have the same result.
- Press the seam first in a closed position with the seam allowances together and then once again with the seam open and flat.

1.2 THE SEWING MACHINE

Lockstitch machines are the most commonly used machines in apparel production. The lockstitch machine is suitable for different weights of fabrics; it can make a straight or a zigzag stitch and it always has a needle and a bobbin. A basic understanding of how the machine operates and how the stitches are formed will allow you to use both industrial and domestic sewing machines and to prevent stitching faults.

1.2.1 Basic parts of the sewing machine

A large variety of sewing machines are available today, but all sewing machines are basically similar. Differences exist mostly on the level of sophistication and the ability to perform a number of advanced techniques. If you have your own machine, study the booklet for your machine carefully. The textbook illustrates and describes the parts of an industrial lockstitch (or lockstitch power machine), on page 37 to 48, and you must make sure that you know the different parts. For parts of a sewing machine, consult the instruction manual for the machine that you will be using in the lab.

1.2.2 Threading the machine

Study your own machine's instruction booklet on how to thread that particular machine. The upper threading for all machines proceeds basically in the same way. You will not be asked to describe the threading of the machine in the written exam. It will be done practically in the practical module when you attend a practical session.

1.2.3 Machine needles

Read the section about machine needles on pp60–62 in the prescribed textbook, and pay special attention to *Box 3: Parts of the machine needle*, and *Box 4: Needle selection*.

Universal

These needles are used on most fabrics, including woven and knitted fabrics.

Microtex or sharp needle

This type of needle has a sharp point for perfectly straight stitches. It is used for silk and microfibre fabrics.

Ball point

This type of needle has a medium ball point and is used on cotton knits, interlock, and fleece.

Stretch

Specially constructed to prevent skipped stitches, this needle is used on synthetic suedes and on highly elastic synthetic knitwear containing Lycra.

Jeans or Denim

This is a needle for denim and other densely woven fabrics.

Leather

This needle has a slight cutting point or wedge-shaped point for use on leather and imitation leather.

Quilting

The point is specially tapered to prevent damage to the sensitive, expensive fabrics used in quilting.

Embroidery

Used for machine embroidery with metallic or decorative thread, this needle has a large eye for easy threading, and a large groove to prevent damage to the delicate threads used for machine embroidery.

Double/Twin and Triple needles

Constructed with two or three needles on a crossbar from a single shaft, this type of needle is used for pin tucking, decorative stitches and hemming T-shirts.

Wing needles

The wing needle produces small, decorative holes when hemming fabrics.

1.2.4 Stitch tension

For illustrations and more explanations on stitch tension, refer to Figures 12–16 on page 66 in the prescribed textbook.

Before sewing your project, you should always first test the quality and tension of the stitches on a double layer of a scrap your fabric. Examine the stitches and adjust the tension where necessary.

Stitch tension is discussed further on pp65–67 in the prescribed textbook. The upper tension dial on an industrial lockstitch machine is not numbered. To loosen the tension, turn the dial counter-clockwise and to tighten the tension, turn the dial clockwise.

1.2.5 Using the sewing machine

Rules when using a sewing machine:

- Sit in such a way that you are opposite the needle of the machine.
- The table and chair should be the correct height. When a machine is placed on top of a table the actual sewing surface may be too high.
- Ensure that there is sufficient work surface to the left of the machine for the fabric to rest on. It should not be necessary to support the weight of the fabric with your hands because the machine is too high or because there is too little work space.
- Also remember that you cannot work if there is insufficient light.
- Remember to hold both threads to the back when you start to sew.
- Make sure that the needle and the take-up lever are in the highest position when you stop sewing, before cutting the thread. Some modern machines will automatically stop with the take-up lever in the highest position.
- Do not sew if there is no fabric under the presser foot.

1.3 THE OVERLOCKER/OVEREDGE MACHINE/SERGER

1.3.1 Background

The overlocker has been used in the manufacturing industry for a number of years, but has only been readily available to the home sewer since about 1984. The overlock or the overedge machine (called a serger in the USA and sometimes referred to as such in commercial paper patterns) has revolutionised home sewing.

The overlocker stitches, trims and overcasts in one step, at almost twice the speed of an ordinary sewing machine. Whereas an ordinary sewing machine sews 700 to 1 000 stitches per minute, the overlocker sews up to 1 700 stitches per minute. The appearance of the stitching is the same as that used by ready-to-wear manufacturers and provides a professional finish to the garment. Although the overlocker speeds up the sewing process, and gives a beautiful finish to your work, it cannot replace a normal sewing machine.

1.3.2 Ways in which an overlocker differs from a normal sewing machine

- An overlocker has blades that cut a strip of fabric from the seam allowances before it overcasts the edge.
- An overlocker does not have a bobbin. Two loopers take the place of the bobbin, and the spools of looper thread are placed at the top and the back of the machine.
- Overlockers use three to five spools of thread at the same time. Some overlockers operate with only two threads.
- Unlike a normal sewing machine, an overlocker cannot sew a traditional lockstitch and therefore cannot take the place of your conventional sewing machine. Some of the five-thread overlockers can be set to sew only a straight two-thread chain-stitch.
- It is not necessary to lift the pressure foot when starting or ending your sewing on an overlocker. Usually, the pressure foot may remain in a lowered position.
- An overlocker will not jam when you sew without fabric under the foot, as will a normal sewing machine.

Read *Box 1: Differences between Overedge and Lockstitch Machines*, on p81 in the prescribed textbook for more differences.

1.3.3 Parts of an overlocker

Read pp82–88 in the prescribed textbook and pay special attention to **Box 2: Machine Terminology: Overedge Machine**. The parts of the overlocker and their functions are defined here.

1.3.4 Types of overlappers

The following three basic types of overlappers are currently available in South Africa:

- **Three-thread machine:** This machine trims and sews a three-thread overlock stitch, which is considered the most versatile of the overlock stitches. It can be used on knits and woven fabrics, and to create decorative effects such as rolled hems. For children's wear or for any garment that will be subjected to hard wearing, seams should first be reinforced with a conventional seam.
- **Four-thread machine:** This machine stitches a four-thread or three-thread overlock stitch, depending on whether you use one or two needles.
- **Five-thread machine:** This machine combines a three-thread overlock stitch with a double chain-stitch to produce a very sturdy seam suitable for wovens. The chain-stitch and the three-thread overlock stitch can be produced separately. Some five-thread machines can produce a four-thread overlock stitch if the needle position is changed. These machines are therefore the most versatile ones available.

1.3.5 Rules for using an overlocker

Remember the following when using an overlocker:

- An overlocker cannot replace a conventional sewing machine. It only sews on the edge of a piece of fabric; if there is no cut edge at the seam it will cut and overlock an edge.
- As the overlocker automatically trims a seam, the results must be regarded as final.
- Make sure that the seam is stitched in the correct position. Garments can be made smaller after stitching, but seams cannot be let out to enlarge the garment.
- An overlocker uses far more thread than an ordinary sewing machine. Buy thread in 1 000-metre or 1 500-metre cones or tubes. The bulked nylon threads and thin, semi-transparent threads create fewer tension problems than cotton threads. Both of these threads are, however, extremely heat-sensitive and melt if a natural fibre fabric is pressed. Use them only on man-made non-cellulosic fabrics!
- Clean and oil your overlocker frequently. During sewing, a great amount of lint or fluff is created.
- Needles need to be replaced frequently. Experts recommend that needles be replaced after eight hours of actual sewing time.
- Do not sew over pins as this can ruin the cutting blades.
- Make sure that the blades are sharp so that they do not “chew” the fabric. Replace the blades or have them sharpened once a year. However, if you do a lot of sewing, this will have to be done more frequently.

1.3.6 Other industrial machines

Read pp88–96 in the prescribed textbook.

a. Safety-stitch and mock safety-stitch machines

The machine sews a combination overedge and straight stitch (stitch classification:516) simultaneously. It is widely used at all price points except high end because it is very economical for joining and finishing seams.

The mock safety stitch (512) machine is a four-thread overlock machine with two needles and two loopers. This stitch is more elastic and is well suited for knits and stretch woven materials.

The difference between the safety-stitch and the mock safety-stitch is clear when the work is turned wrong side up.

b. The Blindstitch machine






Note the different names for this machine. It is a chainstitch machine most frequently used for single-fold hems.

In addition to the seams mentioned above, the latest top-of-the-range machines can also sew a flat lock seam, and a cover stitch hem. This is the type of hem often seen in T-shirts. The raw seam allowance on the wrong side is covered with an overlock-type stitch, but on the right side of the garment two parallel lines of straight stitching can be seen.

ACTIVITY 1.1

1.1.1 Copy or photocopy the following table, complete and insert it into the first section of your portfolio – Unit 1: Equipment.

Identify the following equipment and supply the function of each:

Equipment	Name	Function/Purpose
		
		
		
		
		

1.1.2 Identify the following machine needles:

1. This needle makes small decorative holes and is used in hemming tableware.
2. This needle has a cutting or wedge-shaped point.
3. This is the needle used on most woven fabrics.
4. This needle is used on silk or microfibre fabrics.
5. This needle is used on coarse knitwear.
6. This needle is used on highly elastic knitted fabrics.
7. This needle is used for pin tucking and hemming T-shirts.
8. This needle is used for thick, densely woven fabrics such as denim.

1.1.3 Give reasons why a machine might not stitch.

1.1.4 List six reasons that would make it necessary to change a machine needle.

1.1.5 Explain how you would recognise balanced or correct lockstitch tension.

1.1.6 Describe the differences between an overlocker and a lockstitch machine.

LEARNING UNIT 2

FIT AND FITTING, PATTERNS, FABRICS AND CUTTING

CONTENTS

2.1	THE IMPORTANCE OF FIT	13
2.1.1	Elements of fit	13
2.2	TAKING BODY MEASUREMENTS	14
2.2.1	Traditional tailor's measures	14
2.2.2	The 3-D Body Scanner	14
2.3	SELECTION OF A COMMERCIAL PATTERN	15
2.3.1	Pattern size guidelines	15
2.3.2	Recognising your figure type	15
2.3.3	The pattern catalogue	15
2.3.4	The pattern envelope: front and back	16
2.3.5	The parts of a pattern	16
2.4	SELECTING FABRICS	16
2.4.1	Fabric characteristics and performance	16
2.4.2	Fabric terminology	17
2.4.3	Criteria for recognising quality in fabrics	17
2.4.4	Directional and other fabrics that require special layout	18
2.4.5	Thread selection	18
2.5	UNDERLYING OR SUPPORT FABRICS	19
2.6	PREPARATION OF FABRIC BEFORE SEWING	20
2.6.1	Shrinking	21
2.6.2	Straightening	21
2.6.3	Laying out the pattern	21
2.6.4	Cutting out the garment	22
2.6.5	Transferring pattern markings	23

Learning outcomes

After studying this learning unit, you should be able to:

- select the correct type of thread
- differentiate between the different figure types for women and children
- correctly take your own or someone else's measurements
- identify the figure type and choose correct pattern size for a specific person

- use a pattern catalogue to select a pattern
- interpret the information on the back and the front of the pattern envelope
- use the pattern envelope, determine how much fabric is needed for a garment, which notions are needed, name the fabrics suggested for the garment and determine certain measurements for a finished garment
- identify and give the meaning of the different pattern markings
- list the criteria for the selection of quality fabrics
- identify directional and other fabrics that require special layouts
- identify different types of interfacings
- explain the function of interfacings
- give the guidelines for choosing, preparing and using interfacings
- identify the different parts of a piece of fabric
- describe how washable and dry-clean only fabrics should be pre-shrunk
- describe how fabrics can be straightened
- give the rules for laying out a pattern
- correctly lay out a pattern
- give the rules for cutting out a pattern, and cut out the pattern yourself
- discuss the advantages and disadvantages of different methods of transferring pattern markings
- select the best method of transferring pattern markings in a given situation

This learning unit refers to the following chapters in your prescribed and recommended books:

SHAEFFER, C. (2014). *Sewing for the apparel industry*. 2nd ed. Pearson Education Limited: **Chapter 1–2**

INTRODUCTION

Fitting the human body is one of the greatest challenges facing the apparel industry because no two bodies are the same. The fit of our favourite garments allows us to conceal what we want to conceal and reveal what we want to reveal. There are many personal elements to a garment fit, and companies that best understand their target customer's desires and expectations are best equipped to provide the fit that they prefer. Consistent fit within a given brand is essential for building customer loyalty.

2.1 THE IMPORTANCE OF FIT

2.1.1 Elements of fit

Elements influencing garment fit are: ease, balance and set.

a. Ease

Ease refers to the difference between the measurement of the garment and the body measurement at any given point. Ease is added to the body measurement to establish various silhouettes and their fit. There are two types of ease, namely *fit or wearing ease* that is necessary for ordinary movement; and *design or style ease* that is added to emphasise a certain silhouette. The following fit categories can be achieved:

- *Slim fit* – Garment fits close to the body with 5 to 7,5 cm of ease. Also referred to as fitted.
- *Semi-slim fit* – Garment skims the body with 7,5 to 10 cm of ease.
- *Loose fit* – Garment is oversized, may have from 10 to 15 cm of ease.

Fabrics have a big effect on how much ease is added. More fabric is needed for lighter-weight fabric because they sit close to the body and therefore more ease is added. Heavier weight fabric requires less ease because they tend to hold themselves away from the body and tend to add bulk.

b. Balance

The garment balance is related to the grainline of the fabric and structural lines of the style. The lengthwise grain of the fabric should run parallel to the length of the body at centre front and centre back. An on-grain garment hangs evenly and appears symmetrical. Structural lines such as darts, pleats, princess seams and other design lines should be balanced left and right. Yokes, pockets, and prints or plaids should be symmetrical and the hemline should be even and parallel to the floor.

c. Set

Set refers to a smooth fit of the garment on the body, without any unwanted drag lines or wrinkles. Lines or wrinkles usually point to the problem area. Fabric is pulled in an unattractive way and indicates either not enough, or an excess of ease. Read pages 3–5 in the prescribed textbook and pay special attention to Box 1: Evaluating the Fit.

2.2 TAKING BODY MEASUREMENTS

For garments to fit correctly, accurate body measurements should be taken.

2.2.1 Traditional tailor's measures

Measurements are taken by hand using a tape measure at specific points on the body. You should take your measurements over underwear or close fitting garments such as gym wear. The tape measure should lie flat against your body and not be too tight or too loose. It can be difficult to identify landmarks accurately. Ask a friend to help you take your measurements. The crucial measurements for the female form are the bust, waist and hips. You will physically take body measurements in the practical module (CLO1602).

2.2.2 The 3-D Body Scanner

Three dimensional body scanners are a recent innovation within the fashion and clothing industry. The scanner enables hundreds of body measurements to be taken within less than a minute. It also records an accurate 3D representation of an individual figure which is essential for analysing body shapes.

Figure 2.1 below is a picture of the 3-D body scanner, which is available in one of the clothing labs on Florida campus.

FIGURE 2.1

The 3-D body scanner

Students will have the opportunity to have their bodies scanned on the first day of the practical session for CLO1601.

2.3 SELECTION OF A COMMERCIAL PATTERN

2.3.1 Pattern size guidelines

Remember that your pattern size is unlikely to be the same as the size you choose for ready-to-wear clothes! Each year students turn up at the practical sessions with patterns that are far too small for them, simply because they did not take their body measurements properly and bought a pattern in their ready-to-wear dress size.

Patterns for dresses, blouses, shirts, jackets and coats are usually bought according to your **full bust measurement**. Some sewing experts, however, advise full busted women to buy these patterns according to their high bust measurement, and then do an adjustment for the full bust. In this way, you will ensure a much better fit around the neck, shoulders, and high bust areas. Although precise pattern adjustments are only applied during the third-year clothing construction course (CLO3705). You will be introduced to pattern drafting, pattern manipulation and pattern adjustment during the 2nd year's practical session (CLO2602).

You should buy patterns for skirts and pants according to your **hip measurement**. Once you have taken your measurements, you can decide which pattern size to buy for yourself.

2.3.2 Recognising your figure type

Pattern companies differ in their classification of figure types. Study a pattern catalogue to determine your figure type. Figure types are discussed in more detail in the third-year module CLO3702.

2.3.3 The pattern catalogue

It is very important that you should look at pattern catalogues in order to understand how they are put together. The different categories (e.g. dresses, jackets and coats, skirts and pants, children, etc.) into which patterns are divided in pattern catalogues differ from one pattern company to the next, and a specific company may also change its classification from time to time.

2.3.4 The pattern envelope: front and back

You will best be able to study this section, as well as the next section dealing with the parts of a pattern, if you have an actual commercial pattern at hand. You will be instructed to buy a pattern for a shirt and skirt or shorts for CLO1602. Tutorial Letter 101 for CLO1602 indicates pattern numbers for suitable patterns. You are advised to buy any commercial pattern at this stage and practise to read the pattern envelope while studying this section. Make sure that you know how to use the back of the pattern envelope to determine how much fabric of a particular width is needed for a garment of a certain size, as well as other requirements (notions) to complete the garment.

2.3.5 The parts of a pattern

Inside the pattern envelope you will find sheets with printed pattern pieces, as well as the instruction sheet. Familiarise yourself with the diagrams of the pattern pieces, the cutting guides, and the sewing instructions. Observe the different pattern pieces and identify all the pattern markings indicated on them.

2.4 SELECTING FABRICS

Read pp25–29 in the prescribed textbook.

2.4.1 Fabric characteristics and performance

Every fabric has unique properties and different guidelines that apply when working with various fabrics, for example a crisp fabric will not produce a flowing garment. Fabric selection must be carefully considered because many fabrics require special cutting instructions, which has important implications for the finished garment appearance, quality standards and costs. Fabric structure and thread count will affect the pliability and opaqueness, and whether the hand is firm or soft.

There are two major textile categories for fabrics – knit and woven. For apparel design the distinction between the two is essential.

a. Woven fabric

Woven fabrics generally have a tighter and more rigid construction than knits. Woven fabrics are formed with **warp** or **lengthwise** yarns and **weft** or **crosswise** yarns. The most common woven patterns are:

- **Plain weave** – warp and weft yarns make a simple crisscross pattern, a common example is a flat or fitted sheet.
- **Twill weave** – yarns interlace in a step-like formation, examples are denim and chino.
- **Satin weave** – the weft yarns skip many warp yarns creating the characteristic smooth lustre and drapeability.
- **Jacquard** – attachment to the loom enables the production of complicated patterns such as brocade, damask and tapestry.
- **Dobby** – small geometric patterned weave.
- **Pile** – surface fabrics such as velvet, corduroy, fake fur and fleece. The fabric may appear darker or lighter when viewed from different directions and this needs to be taken into account when a garment is cut.

b. Knit fabric

A knit is a fabric formed by interloping adjacent yarns. The basic structure provides a measure of stretchability not available in wovens. The two primary knit fabrics are weft knits and warp knits:

- **Weft knits** – yarns are applied horizontally. Common knit constructions are jersey, ribbed knits and interlock.
- **Warp knits** – are resistant to runs, such as tricot commonly used in lingerie.

Refer to table 1 on pp497– 500 in the prescribed textbook for a comparison of the properties of commonly used fibres.

2.4.2 Fabric terminology

Before you prepare your fabric for cutting, let us look at the basic terms used to describe the different parts of a woven fabric. Figure 10 on page 28 in the prescribed textbook illustrates these parts.

- Selvedge/Selvage
- Raw edge
- Cross grain (also known as weft or crosswise threads)
- Lengthwise grain (also known as straight grain/warp grain)
- True bias
 - The fabric is cut from a large roll or bolt and the edges that have been cut are called the *raw edges*.
 - The *warp* or *lengthwise* yarns run from raw edge to raw edge. They run parallel to the selvedge and are usually stronger, and have less stretch than the *weft* or *crosswise* yarns (sometimes called the *filling* or the *woof*).
 - The *weft* or *crosswise* yarns run from selvedge to selvedge.
 - The *selvedges* are the firmly woven strips along each lengthwise edge of the finished product. As the selvedges are inclined to shrink more than the rest of the fabric, it is advisable to lay your pattern out in such a way that the selvedges are excluded.
 - The *true bias* lies at an angle of 45° to both the weft and the warp and has the most stretch. Bias binding (also called a crossway strip) that is used to bind raw edges must be cut on the true bias.

2.4.3 Criteria for recognising quality in fabrics

The following criteria for recognising quality in fabric were taken from Reader's Digest Complete Guide to Sewing (1999:65) (hereafter referred to as Reader's Digest 1999). Although not all of these criteria are as relevant today as they used to be, it is still advisable to keep them in mind when selecting fabrics.

Weave should be firm. Hold the fabric tightly between the thumbs and forefingers of both hands and pull firmly on the fabric. Any distortion of the fabric could indicate future problems with the durability of the fabric. Threads that move away from each other are called yarn shift. If the fabric looks puckered after this test, the fabric could show fabric growth and distortion in those areas that are subjected to high stress, such as at the knees, elbows, and seat or hips of a garment. You do not want yarn shift or fabric growth in a garment.

- Weave should be uniform. Unless intentional, such as in shantung, fabric should not have any unusually thick or thin areas when held up to the light.
- The filler yarn should meet the selvages at right angles. Yarns at an oblique angle mean the fabric is off-grain.

- Dye colour should be even and fresh. If the fabric was folded in half on the bolt, open it out and check if the creaseline is not lighter in colour than the rest. This is an indication of poor dye quality and could pose problems when cutting.
- Print colour should be even. There should be no white or undyed spots except where the fabric is clearly meant to be white. Printed fabrics sometimes have small folds or creases. During the printing process these areas are then left unprinted. The fabrics should be sold as seconds, at a reduced price. These fabrics can only be a bargain if you can cut your pattern in such a way that these areas are not included.
- A print that is geometric or otherwise symmetrical should meet the selvages at right angles. A fabric that has been printed off-grain cannot be corrected.
- No powdery dust should appear when the fabric is rubbed between the fingers. The powder is a starch (called sizing) applied to the fabric to add body. Too much sizing is often used to conceal poor quality and a low thread count in fabric. Hold the fabric up to the light to see if the fabric is woven tightly enough. Certain fabrics, such as shweshwe, are traditionally made with large amounts of sizing. The fabric should be washed well before use.
- The fabric should shed creases after crushing unless it is a 100% cotton or linen fabric in which a slightly creased natural look is expected.

2.4.4 Directional and other fabrics that require special layout

Directional fabrics are those fabrics that should be laid out in the same direction, such as fabrics with a pile or nap (corduroy or velvet), fabrics with a one-way design such as teddy bears, trees, or flowers that must all face the same way, or fabrics that have a different shine or colour when turned through 180°, such as some darker knits or gabardine. You will need to buy the amount of fabric specified under “with nap” on the pattern envelope.

Fabrics with plaids, stripes and other geometrical designs need careful matching when laying out. This could also mean that you have to buy more fabric. You should keep all these factors in mind when selecting fabrics.

2.4.5 Thread selection

The following types of thread are most often used in South Africa:

a. Cotton thread

Ordinary cotton thread (not sheen) is usually too thick and not strong enough for permanent sewing, but it may be used to tack heavy-duty fabrics.

b. Mercerised cotton thread

Mercerised cotton thread (sheen) can be used on cotton, linen or woollen woven fabrics. This thread does not have enough stretch to be used on a synthetic fabric, particularly a knit. The thread will break when slightly stretched and the seams will “pop”.

c. Spun polyester thread

Most of the thread available in shops today is spun polyester thread. Spun polyester thread consists of synthetic thread only. It is strong and has sufficient elasticity to be used on woven and knitted synthetics. It is heat sensitive and will melt at high temperatures used during tailoring or when pressing linen and cotton. Spun polyester thread is usually much cheaper than mercerised cotton thread. Unfortunately, the very cheap varieties are often of poor quality and suitable only to be used in the loopers of an overlocker.

The colour of the thread should match or be slightly lighter than that of the fabric. Unfortunately, we do not have much choice regarding the thickness of thread. Today, the thickness of most available threads is not even indicated on the reel. Theoretically, one should use a thinner thread (60) on a thin fabric and a thicker thread (30 or 40) on a very thick fabric. The stitch length should also be shorter for fine fabrics (1 mm–1,5 mm or 15–20 stitches per 2,5 cm) and a longer stitch length on thicker fabrics (2 mm–3 mm, or 8–12 stitches per 2,5 cm). For topstitching, a special, much thicker thread and a long stitch (3 mm–4 mm) may be used.

Read *Box 6: Thread selection* on pp69–71 in the prescribed textbook.

2.5 UNDERLYING OR SUPPORT FABRICS

Underlining, interfacing, interlining, and lining are all classified as underlying fabrics. The following table was taken from the recommended book.

TABLE 2.1

UNDERLYING FABRICS

(adapted from Readers Digest complete guide to sewing, 2010:24)

	Purpose	Where used	Types	Selection criteria
INTER-FACING	Support, shape and stabilize areas, edges, and details of a garment Reinforce and prevent stretching Increase the life of a garment	Entire sections of garment such as collars, cuffs, waist-bands, plackets, flaps Specific garment areas such as the front, hem, neck, yoke, armholes, lapels, vents, pockets	Fusible interfacings: Woven, non-woven, weft- insertion, or knit type, with resin coating on one side. They are fused to garment fabric using an iron and steam or a damp cloth Sewn-in interfacings: Woven, non-woven, they are attached to garment fabric by basting (or gluing) when a fusible type is unsuitable All types can be light, medium or heavy in weight	Should give support and body without overpowering the garment fabric Care and weight selected should be compatible with the rest of garment fabric. In general the interfacing should be slightly lighter than the garment fabric Fusible interfacings, especially firmer grades, tend to add some rigidity to fabric
UNDER-LINING	Give support and body to garment and design	The entire garment or just sections	Fabrics sold as underlining can be light to	Should be relatively stable and lightweight

	Purpose	Where used	Types	Selection criteria
	<p>Reinforce seams and other construction details</p> <p>Give opaqueness to garment fabric to hide inner construction</p> <p>Inhibit stretching, especially in areas of stress</p> <p>Act as a buffer layer on which to catch hems; baste facings and interfacings, fasten other inner stitching</p>		<p>medium in weight, with a soft, medium or crisp finish.</p> <p>Other fabrics not specifically sold as underlinings, such as China silk, organdy, organza, muslin, batiste, lightweight tricot (for knit fabrics), can be used.</p>	<p>Colour and care should be compatible with garment</p> <p>Underlining colours should not show through the garment fabric</p> <p>Finish (e.g. soft, crisp) should be appropriate for desired effect</p>
INTER-LINING	<p>Provide warmth without bulk</p>	<p>The body of a jacket or coat, sometimes the sleeves</p>	<p>Lightweight, warm fabrics such as flannel, flannelette, brushed cotton, fleece</p>	<p>Light in weight</p> <p>Will provide warmth</p> <p>Not too bulky</p> <p>Care requirements should be compatible with rest of garment</p>
LINING	<p>Cover interior construction details</p> <p>Allow garment to slide on and off easily</p>	<p>Coats, jackets, dresses, skirts, and pants in their entirety or just partially</p>	<p>Silky lightweight of viscose or Bemberg rayon, acetate, silk or polyester</p>	<p>Should be smooth, opaque, durable</p> <p>Weight, colour, and care should be compatible with rest of garment</p> <p>An antistatic finish is desirable</p>

2.6 PREPARATION OF FABRIC BEFORE SEWING

Do not forget the following very important aspects of preparing the fabric, laying out the pattern, cutting out the garment and transferring the pattern markings onto the material. The success of your finished garment depends on the care you take with these preparatory steps.

2.6.1 Shrinking

You should pre-shrink all fabrics and sewing notions such as zippers or lace. Even fabrics made from manufactured (synthetic) fibres may shrink after washing. The only exception is fabric that should rather not be pre-shrunk, such as single-knit cotton T-shirting because it could become so distorted during shrinking that it would be impossible to cut it afterwards. You should preferably treat this fabric in exactly the same way you would treat the garment when cleaning it. For example, if a garment should be dry-cleaned, the fabric should be handed in for dry-cleaning to have it pre-shrunk. If this is not practical, then you should follow the procedures indicated below:

Washable, colourfast fabrics

Soak the fabric in warm, not boiling water. Leave the fabric to soak until the water is cold, hang up to dry and then press.

Woollen fabrics

Use the London shrinking method for woollen fabrics. Wrap the fabric evenly and neatly in a large, damp cloth, such as a sheet. Every part of the woollen fabric must be in touch with the damp cloth. Leave for a couple of hours. Unwrap and lay the fabric on a flat surface to dry. Press on the wrong side of the fabric.

2.6.2 Straightening

Straighten the fabric only after shrinking, as the shrinking process may affect the grain alignment. Straighten the cut edges by snipping the selvedge, drawing out a crosswise thread near the cut edge and then by cutting along that line. Some fabrics tear neatly and easily along the weft.

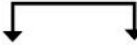

All the corners of the fabric should now form right angles. The warp and weft should be at right angles to each other. Unfortunately, what should occur and what actually happens are often not the same. Fabrics are often very skew.

Sometimes, the fabric can be straightened by pulling the fabric on the true bias to lengthen the short corners. However, if the fabric has been heat-set or treated with resin, no amount of pulling will remove the skew. Such fabric can be cut without straightening, but you will have no guarantee that laundering will not change the shape of the garment after a while. Avoid buying fabric with lines or checks printed off grain, as you will never manage to correct this inconsistency.

2.6.3 Laying out the pattern

It is very important that you cut out the pattern pieces correctly according to the grain-line arrows indicated on the pattern pieces. An incorrect grain-line will affect the drape and appearance of the final garment. The lengthwise threads usually run vertically in a garment because they are the stronger threads. Grain-lines are sometimes altered to create a special effect, such as a border print, or a yoke in contrasting stripes. Use a border print only if the hemline is straight (not curved). A border print can be cut off and used somewhere else on the garment as a trim. A bias-cut garment usually drapes very softly.

- Fold the fabric double, right sides facing with the selvedges together, and the straightened cut edges together. Velvet and velveteen are often folded with the right sides facing out. If the fabric is very skew and it is not possible to straighten it, it is more important that the selvedges, rather than the straightened cut edges, should be together.

- If the fabric is too long for your table, support the remainder on a chair. Do not allow the fabric to hang off the edge of the table. The weight of the fabric can cause it to stretch.
- Check that you have all the pattern pieces required for the garment at hand. With a commercial pattern the easiest method is to follow the layout chart supplied.
- Place the large pieces, marked with a  or “Place on fold”, with the thin printed line exactly on the edge of the fabric. First pin along the fold; then pin the corners, and then the pattern edges, smoothing the pattern as you proceed. Pins should not extend beyond the cutting line, since you could easily damage your scissors when cutting if you do not notice the pin in time. The pins should also be at right angles to the cutting edge. Do not use too many pins, as this could distort the fabric. In the case of fabrics such as leather or vinyl, where the pins may leave holes, you should pin only within the seam allowance.
- Ensure that the grain-line arrow  is exactly on the grain-line. The distance from the one point of the arrow to the selvedge must be exactly the same as the distance from the other end of the arrow to the selvedge. The quickest way to do this is to place the pattern piece more or less in place on the fabric. Pin the one end of the arrow to the fabric taking up only the smallest piece of fabric possible. The one end of the arrow is now fixed. Measure the distance from that point to the selvedge. Pivot the pattern piece around the fixed point until the other point of the grain-line arrow is exactly the same distance from the selvedge. Anchor that second arrowhead with a pin.
- Be very careful with fabrics that have a nap (a pile), such as velvet, velveteen or corduroy, a one-way design, for example trees or flowers, or a one-way sheen (satin, brocade, knits, or twill fabric). All the pattern pieces should run in the same direction when using these fabrics. Use only with nap layout instructions and the quantity of fabric needed. This is called directional cutting.
- Remember that plaids, checks and stripes must match at the centre front and side seams. It might be easier to lay out the pattern on a single layer of fabric. To cut the second piece, remove the pattern and lay the garment section right side down on the remaining fabric, matching stripes lengthwise and crosswise. The very inexperienced dressmaker would be well advised to avoid plaids, checks, stripes and large motifs. Rather choose a fabric with a small all-over design.
- Be very careful when using a fabric with large motifs. Avoid a pattern with a lot of seams as it might not always be possible to match the motifs. Consider the position of the motif on the completed garment. Do not place motifs directly on the full part of the bust line or the buttocks as the effect could be very unflattering.
- An asymmetrical placement of large motifs is often more pleasing than a symmetrical one.

2.6.4 Cutting out the garment

- Keep the fabric flat on the cutting surface while cutting out and be careful that you do not lift the fabric.
- Use sharp scissors and cut firmly and evenly, using the full length of the scissor blades.
- Do not use pinking shears.
- Do not cut notches out or inward, it is too time consuming. A much quicker and more efficient way of indicating the position of a notch is to replace it with a small snip (see 2.6.5 below).

2.6.5 Transferring pattern markings

Do not try to transfer all the marks on the pattern. (Your cutting and sewing should be accurate enough for you not to need the sewing line.) Use the guide on your sewing machine. From time to time, gadgets for transferring pattern markings become available in shops, but usually you can do all the necessary marking with small snips, tailor's tacking, and a tailor's pen.

We usually recommend the following marking methods:

Small snips

Make small snips or clips (2 mm–3 mm long) into the seam allowance to identify the centre front or back, dart lines, fold lines, notch positions, and the top of the sleeve head. This is a very useful and quick method but cannot be used to mark the pocket or buttonhole position, or the dart point. The snip should be perpendicular to the edge of the pattern.

Tailor's tacking

This is an excellent way of transferring markings. Marks are made using needle and thread. Tailor's tacking is very accurate and the only method that is visible on both sides of the fabric. Use tailor's tacking to mark the pocket or buttonhole position, and the dart point. Unfortunately, this method is time-consuming and results in small holes in your pattern after removing the paper.

Tailor's pens or pencils

A very accurate mark can be made on the right side of the fabric. Test on a scrap of fabric first to ensure that the mark does indeed disappear. Do not iron the fabric dry after using water to remove the mark as it tends to reappear. Do not use any old felt-tip pen or an ordinary lead pencil, but only the special ones bought at a haberdashery counter!

Tracing wheel and tracing paper

This method is especially suitable for marking the stitching lines of darts or pleats on the wrong side of the fabric. The fabric/garment needs to be washed to remove the markings.

ACTIVITY 2.1

- 2.1.1 Observe the garments you are wearing now. Which are made of knit fabrics and which are made of woven fabrics?
- 2.1.2 In your wardrobe find examples of your apparel made from directional fabric.
- 2.1.3 Explain the differences and similarities between woven and knit fabric.
- 2.1.4 Explain the difference between lengthwise and crosswise grain. Why do you think it is important to know the difference?
- 2.1.5 What is the bias grain? How does it differ from lengthwise and crosswise grains?
- 2.1.6 Describe the purpose of lining, interlining and underlining.
- 2.1.7 Explain the purposes of interfacing. List the areas of a garment where it is commonly used.

LEARNING UNIT 3

STITCHES AND SEAMS

CONTENTS

3.1	STITCHES	25
3.1.1	Characteristics of each stitch class	25
3.2	SEAM CLASSIFICATION	26
3.3	SEAM TYPES	27
3.3.1	Plain seams (open or closed)	27
3.3.1.1	Seam finishes for open and closed single seams	27
3.3.2	Enclosed seams	28
3.3.3	Self-finished seams (self-enclosed seams)	28
3.3.4	Seams with a decorative effect	29
3.4	SEAM TECHNIQUES	29
3.4.1	Stay stitching	29
3.4.2	Blunting a corner	29
3.4.3	Trimming corners	29
3.4.4	Trimming seam allowances	29
3.4.5	Grading seam allowances	30
3.4.6	Notching outward (convex) curves	30
3.4.7	Clipping inward (concave) curves	30
3.4.8	Understitching facings or under collars	30

Learning outcomes

After studying this learning unit, you should be able to:

- identify different stitches from 100 to 600 classifications
- identify the different seam types in different categories
- explain the different stitches and seams based on end-use of garments
- identify the seams, seam finishes and techniques
- discuss the function and use of the seam, seam finish or technique
- discuss apparel quality issues related to stitches and seam types

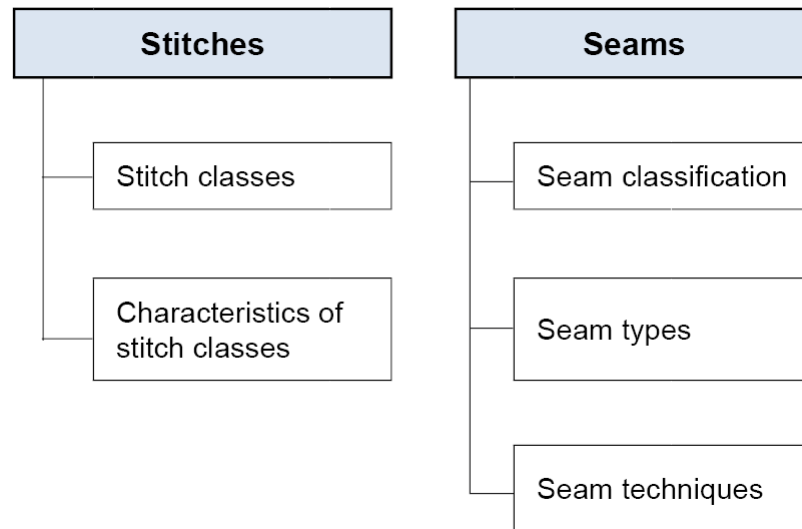
This learning unit refers to the following chapters in your prescribed book:

SHAEFFER, C. (2014). *Sewing for the apparel industry*. 2nd ed. Pearson Education Limited: Chapter 7–1.

INTRODUCTION

In this learning unit you will learn to distinguish between the different stitch and seam classifications in clothing construction. The diagram below provides an overview of the content of this learning unit:

FIGURE 3.1
Overview of learning unit 3



3.1 STITCHES

Stitches are used to hold a garment together. Therefore, stitch quality is a critical component of overall apparel quality. Performance and cost of apparel products can be affected by manipulating the physical features of stitches, such as stitch type; stitch length and width; needle type, size and condition; thread type and size; tension and other sewing machine adjustments; and operator accuracy.

3.1.1 Characteristics of each stitch class

Read *Box 4: Stitch Classifications* on pp13–15 in the prescribed textbook.

The table below presents an overview of the characteristics of each stitch class:

Stitch Class Number	Name	Characteristics	Note
100	Simple chainstitch	Single thread	Stitch formed by chaining, with no underthread.
200	Hand stitches and their machine simulations	Rarely seen in ready-to-wear; not used for general seaming due to lack of durability; used for decorative purposes in ready-to-wear.	Single thread and hand needle. Refer to page 501–510 of the prescribed textbook for hand sewing basics.

300	Lockstitches	Most common used stitch type, frequently used in ready-to-wear.	Stitches formed with a needle thread interlocking with a bobbin thread.
400	Multithread chainstitch and coverstitch See figure 8 on p116	Frequently used in wovens such as jeans, casual pants; frequently used for seaming in knits.	Formed by a needle thread above interloping with a lower looper thread below (no bobbin).
500	Overedge stitches (nonsafety stitches) and safety stitches See figure 9, 10, 11 on p116	Most common edge finish used in the industry	Stitches formed over the edge of the fabric, encasing it with thread.
600	Coverstitch or flatlock See figure 16 on p119	Most common stitch type used for knits and cut-and-sew jersey.	Stitches interloop on both right and wrong side, used for flat seams, where the fabric butts together, or overlaps slightly.

The number of stitches per inch (SPI) is an important quality indicator for sewn apparel products. The appropriate SPI is important for seam quality, strength, stitch appearance, cost, and seam elasticity on stretch fabrics. More SPI will lead to stronger, more elastic seams but it also means longer production time resulting in higher labour costs. A very lightweight or sheer fabric, as well as leather products, can be weakened by too many stitches.

3.2 SEAM CLASSIFICATION

Read pp114–168 in the prescribed textbook.

A seam is the stitched joint between two or more pieces of fabric. In the construction of garments, the cut panels (pattern pieces) are joined into seams. A seam may be defined as the application of a series of stitches or stitch types to one or several thicknesses of fabric. The best seam is the one that yields the desired performance and appearance at the lowest cost.

The cut edge is also known as the raw edge. The distance from the stitching line to the raw edge of the pattern piece is the seam allowance. Higher quality garments often have wider seam allowances to provide fabric for alteration, and this is considered a quality indicator. The standard width of seam allowances for commercial patterns is 1,5 cm or 15 mm. In the industry the seam allowance is 1 cm or 10 mm wide.

There are **four major seam classes** in the industry: superimposed seams (SS), lapped seams (LS), flat seams (FS), and bound seams (BS). Within each major seam class there are several seam types. Two other seam classes are ornamental stitching (OS) and edge finishes (EF).

- a) **Superimposed seams (SS)** – the most used seam class, formed by stacking plies of fabric on top of one another and stitching them together near the edge.

- b) **Lapped seams (LS)** – formed by overlapping the seam allowances of two or more plies of fabric and sewing them together. With more than 100 variations, this is the largest seam class.
- c) **Bound seam (BS)** – made by encasing the raw edges of a seam with fabric strips.
- d) **Flat seams (FB)** – join fabric plies by butting the raw edges together and securing them with a 600-class cover stitch or a zigzag stitch.

3.3 SEAM TYPES

Different stitches can be used to construct a certain seam type, but the seam type remains the same regardless of the stitch used to sew it. Make sure that you are able to identify each of these seams from an illustration.

3.3.1 Plain seams (open or closed)

This is the most versatile, most widely used superimposed seams (SS) that is the least costly to sew. Plain seams are formed when the fabric is placed with right sides of the fabric facing and then sewn with a single row of stitching parallel to the raw or cut edge. Because it has only a single row of stitching, it is not designed for strength; however, plain seams work well for high-quality tailored garments. Plain open seams or plain closed seams are appropriate for any garment where the seams do not take a lot of stress, in the way that workwear or active sportswear may.

The raw edges of the seam allowances have to be finished to prevent them from fraying. When the two seam allowances are finished separately and pressed open, it is called an open seam (code is SSa, or ISO classification 1.01). If the two seam allowances are finished together, it is called a closed seam (SSa). Closed seams on knit fabrics are sewn with an overlocker only, stitch classification:514 or 515.

3.3.1.1 *Seam finishes for open and closed single seams*

These finishes prevent the fabric from fraying. It can also be applied to any raw edge in a garment, such as hems or facing edges. Read chapter 9 in the prescribed textbook.

a. Edge stitching

Edge stitching is also called a turned-and-stitched finish or a clean finish.

Edge stitching is used if you do not have access to an overlocker, your machine cannot do a zigzag stitch and only if the fabric is not thick. It is also used as the finish on a plain hem — that is, a hem with two folds or turnings as used on a thin fabric like polycotton. The raw edge or the seam allowance or hem is folded to the inside and stitched 1 to 2 mm from the folded edge.

b. Overcasting

The second method is overcasting. The raw edges can be overcast by hand or by machine. Machine overcasting includes finishes such as zigzagging (Stitch classification:304), any of the overcasting stitches found on the more modern machines, or overcasting with an overlocker (Stitch classification 504 or 505).

c. Pinking

The third method of finishing is pinking. Pinking is appropriate for fabrics of different weights that do not fray or fray very little. You need a pair of pinking scissors, which can

be quite expensive, to cut the seam allowance in the zigzag pattern. In industry it is done with an electric or manual pinking machine (refer to figure 7 on p154 in the prescribed textbook).

d. Binding

The fourth method to finish raw edges is binding. This method is mostly used on unlined coats and jackets and on trousers. It is suitable for heavy fabrics and fabrics that fray, but it is not suitable for lightweight fabrics.

Binding can be done in two ways. One is by using normal bias binding (ISO class 3.03.07) and the other is by using the Hong Kong finish (SS or ISO class 3.05.03).

3.3.2 Enclosed seams

Read pp127 and 128 in the prescribed textbook.

Enclosed seams (SSe or ISO class 1.06.02) are the second most common seam type after the plain seam type. This usually requires two separate stitchings – the joining and then topstitching or understitching. It is called an enclosed seam because seam allowances end up sandwiched between the two layers of fabric. These seams are found at the edges: neckline, collars, cuffs, waistlines, waistbands, and facings. It is not necessary to overlock the edges of enclosed seams. These seams can be bulky, and needs accurate trimming and/or grading to reduce bulk. Techniques to reduce bulk are discussed in section 3.4 (Seam techniques).

3.3.3 Self-finished seams (self-enclosed seams)

Chapter 10 in the prescribed textbook describes self-finished seams. In self-finished or self-enclosed seams the seam allowances are hidden within the seam. These seams are very strong and neat. They are more costly than other seams because they require more operator skill, more time and additional fabric to complete. You should be familiar with the French seam and the flat-felled seam. The first row of stitching for French and flat-felled seams is done with the wrong sides of the fabrics facing, whereas plain seams are sewn with right sides facing.

a. French seam

Seam classification SSae or ISO class 1.06.03. A 301 stitch is mainly used to create this kind of seam. In the case of a French seam, no line of stitching is seen on the right side, only the ditch of the seam can be seen. The French seam is appropriate for thin, lightweight or sheer fabrics that may fray and for lingerie or underwear. It adds more bulk to the seams and is not suitable for thick fabric. It is labour intensive because it requires multiple sewing steps and is therefore costly to make. This is a good seam for straight seamlines but is challenging on curved seams like armholes, where a bias seam finish could be a good match.

b. Flat-felled seam

Seam classification LSr or ISO class 2.06.02. The 301 or 401 stitches are used to create this seam type. LSc or Class 2.04.03 is a flat-felled seam as made with a folder and a two-needle machine, stitched in one step. Class 2.06.02 is a flat-felled seam as done with a home sewing machine in two steps. In CLO1602 you will do the single needle flat-felled seam as described on p165 in the prescribed textbook (figure 6).

The flat-felled seam has a more sporty look and is used on jeans, sports clothing, children's wear, and men's tailored shirts. The flat-felled seam is sometimes called a machine-and-fell seam. You should know both names. As in the case of the French seam, the flat-felled seam is also a self-enclosed seam, no seam finishing is required because the raw edges will not be exposed. The flat-felled seam is very sturdy but is used on firmer fabrics than the French seam. Two lines of stitching can be seen on the right side.

3.3.4 Seams with a decorative effect

There are four topstitched seams, namely the double-topstitched seam, the slot seam, the welt seam and the tucked seam. These seams are very suitable when working with slightly thicker fabrics and create a tailored appearance.

The fagoted seam is a decorative open seam that can be made by hand or by machine. Some books refer to this as a "Spanish seam".

3.4 SEAM TECHNIQUES

The following seam techniques are very important and could mean the difference between a home-made and a professional appearance. Make sure that you know very well how, where and why each technique is used. Read pp125–132 in the prescribed textbook.

3.4.1 Stay stitching

Although the prescribed textbook doesn't refer to stay stitching, you need to know that it is a row of normal-sized stitching placed just inside the seamline to prevent the seamline from stretching out of shape. Stay stitching is done on a single layer of fabric. If seam allowances are to be clipped, such as at the concave neck edge, it is also staystitched as reinforcement.

3.4.2 Blunting a corner

Blunting a corner is done by sewing one, two or three stitches diagonally across the corner of an enclosed seam, such as at the point of a collar or cuff. This provides space for the seam allowances and ensures a better and neater point once the collar is turned. See pp128–129 in the prescribed textbook (Application: Outward Corners) and pay special attention to figures 30–32.

3.4.3 Trimming corners

The seam allowances at the corner of an enclosed seam should be trimmed. This ensures that there is no overlapping of seam allowances resulting in bulk once the point is trimmed. Refer to figure 32 on p129 in the prescribed textbook for an illustration and description of trimming corners.

3.4.4 Trimming seam allowances

Although the prescribed textbook doesn't refer to trimming seam allowances, you need to know that trimming a seam allowance means to cut away some of it. This is usually applied to both seam allowances. Seam allowances are usually trimmed before they are graded, notched, or clipped. Never trim or grade the fashion fabric right up to the stitching.

3.4.5 Grading seam allowances

Although the prescribed textbook doesn't refer to grading seam allowances, you need to know that grading means cutting seam allowances of enclosed seams to different widths. The seam allowance that will fall against or nearest to the garment exterior should be left the longest. This "protects" the outer fabric and prevents the edges of the seam allowances from showing through as a ridge on the outside surface of the garment's fabric.

3.4.6 Notching outward (convex) curves

Outward or convex curves are notched, that is, wedges are cut from the seam allowances. This prevents the seam allowances from overlapping and forming bulky parts once turned. See figures 22 and 23 on p126 in the prescribed textbook for pictures on notching a convex curve.

3.4.7 Clipping inward (concave) curves

Cutting straight into the seam allowance of an inward curve allows the seam allowance to open up and lie flat when turned over to the inside of the garment. The curve will form a smooth shape without pulling. See figures 20 and 21 on page 126 in the prescribed textbook for pictures on clipping a concave curve.

3.4.8 Understitching facings or under collars

Understitching is done through the facing and both the seam allowances, close to the seamline, after trimming, grading, clipping and notching have been done. It prevents the facing and the seamline from rolling to the right side of the garment. Refer to *Box 5: Understitching*, on p110 in the prescribed textbook.

ACTIVITY 3.1

- 3.1.1 Compare the advantages and disadvantages of closed and open seams.
- 3.1.2 Explain the differences between shirred seams and eased seams.
- 3.1.3 Discuss the characteristics of the different seam classifications.
- 3.1.4 Identify and differentiate between the four major seam classifications.
- 3.1.5 Describe the causes of puckered seams.
- 3.1.6 Explain why it is necessary to notch the seam allowance on a convex seam.
- 3.1.7 Use any example of a garment in your wardrobe. Answer the following questions:
 - 3.1.7.1 List fabric content.
 - 3.1.7.2 Identify and list the types of stitches and seams used on the garment.
 - 3.1.7.3 Explain the reasons for selecting the stitches and the seams on each part of the garment (shoulder seam, armhole, side seam, bottom hem, cuff, neckband).
 - 3.1.7.4 Suggest other alternative types of stitches and seams that can be used for each part of the garment (shoulder seam, side seam, bottom hem, cuff, neckband) and give reasons for your choice.
 - 3.1.7.5 List the step-by-step logical order of constructing the garment you have selected.

- 3.1.8 Select two similar tops from your wardrobe that represent two different price ranges, high and low.
 - 3.1.8.1 Note the price range for each top.
 - 3.1.8.2 Think through the various factors that caused the difference in set price ranges for the two products, such as construction, fabric used, et cetera.
 - 3.1.8.3 If you are a designer who wants to make a knock-off of the high-price range product for the mass market, how could you construct the product for your low-cost product line?
- 3.1.9 Take pictures of garments in your cupboard that illustrate the following types of seams:
 - 3.1.9.1 Open single seam finished with overlocking
 - 3.1.9.2 Open single seam finished with edge stitch
 - 3.1.9.3 Open single seam finished with pinking
 - 3.1.9.4 Closed single seam finished with overlocking
 - 3.1.9.5 French seam
 - 3.1.9.6 Flat felled seam

LEARNING UNIT 4

GARMENT SHAPING DEVICES

CONTENTS

4.1	DARTS	33
4.2	PRINCESS SEAM	33
4.3	TUCKS	33
4.4	PLEATS	33
4.4.1	Knife pleats	33
4.4.2	Box pleats and inverted pleats	33
4.4.3	Mechanically engineered pleats	33
4.5	GATHERING	34
4.6	EASING	34

Learning outcomes

After studying this learning unit, you should be able to:

- identify the styles, lines and details used for shaping a garment
- analyse design features related to the body shape and fit

This learning unit refers to the following chapters in your textbook:

SHAEFFER, C. (2014). *Sewing for the apparel industry*. 2nd ed. Pearson Education Limited:
Chapter 12

INTRODUCTION

Fabric is two-dimensional, yet the human body is three-dimensional. Shaping devices have been developed to create garments that adapt fabric to the body shape. No two persons' bodies are the same and individual sizes and shapes differ from top to bottom and all around. In order to fit each individual's curves, fullness should be provided in certain areas, such as at the bust or hip, and this fullness should be disposed of elsewhere, such as at a yoke, shoulder line, or the waist.

A major shaping device is a dart, which is used at the waist, hip and bust area to incorporate the contour of the body. Shaping devices used in garment production include the following: darts, tucks, pleats, gathers, easing, elastic, drawcord, lacing, princess seam, gore, yoke, godet, gusset, slit or vent. For the purpose of this module we will look at darts, princess seams, tucks, pleats, gathering and easing. For pictures of the different shaping devices, consult your prescribed and recommended textbooks.

4.1 DARTS

Darts are stitched from the widest part of the dart to the point. The last couple of stitches are taken right to the edge, parallel to the fold in the fabric. Backstitching may be done at the wide end, but the threads should be secured by knotting at the point of the dart.

Vertical darts are pressed either to the side or to the middle, but not to both directions in the same garment! Press horizontal darts downwards.

Darts in heavy fabrics should be cut open, pressed, and the raw edges finished by overcasting.

Pay special attention to *Box 1: Dart terminology* on p191 in the prescribed textbook, as well as *Box 4: Evaluation Guidelines for Darts* on p198.

4.2 PRINCESS SEAM

A princess seam is shaped to provide fullness where needed. It consists of an outward curve at the bust, an inward curve at the waist and an outward curve at the hips. This appearance can be very graceful and flattering, but needs careful sewing and pressing.

4.3 TUCKS

Tucks are the take-up of fabric by stitching through parallel folds, usually evenly spaced. They add to production costs because they require extra labour to sew and press them. Carefully study the different types of tucks illustrated below. We differentiate between blind tucks, spaced tucks, pin tucks, shell tucks, corded tucks, cross tucks, and dart (or released) tucks.

4.4 PLEATS

Pleats are various folds of fabric that are formed by doubling the fabric back on itself, fixed at one end by pressing, stitching, or anchoring in a seam, and released at the other end. Pleats are used at the waist, shoulder, across the back, and at the hipline for fitting. They can be used elsewhere for detail. There are four types of pleats: knife pleats, box pleats, inverted pleats and accordion pleats.

4.4.1 Knife pleats

Knife pleats are single pleats that are up to 2,5 cm wide, turned in the same direction. If wider than 2,5 cm then they are called flat or side pleats. These pleats are not suitable for stretchy, bulky or napped fabrics with which it is hard to achieve a crisp press. Knife pleats are best suited for woven fabrics that can take a sharp press.

4.4.2 Box pleats and inverted pleats

These pleats are evenly spaced and pressed in alternate directions. The inverted pleat is one in which the folds of fabric meet each other at a central point on the face side of the garment. With a box pleat the fabric folds toward the sides of a central point on the face side of the garment.

4.4.3 Mechanically engineered pleats

A variety of narrow pleats are formed with special equipment and are heatset permanently. *Accordion pleating* creates a narrow pleat that fits close to the body. *Sunburst pleating* creates a

pleat that is smaller at the top but larger at the hem. *Crystal pleats* are a series of very narrow parallel pleats.

4.5 GATHERING

Gathering is the control of a predetermined amount of fullness drawn up to correspond to a smaller adjoining seam line or measurement. It is suitable for soft, pliable fabrics. It is important to determine the *gathering ratio*, which means “how much gathering” is needed to create the desired look. A common place to start is 1:1.5, or 1½ times the amount of fabric for the gathered section than for the flat section. More or less fabric can be used.

Gathers are created by sewing two parallel rows of lockstitch in the longest possible stitch length, and then pulling the bottom threads creating the folds in the fabric until it is the same length as the other pattern piece. Another way of gathering occurs when extended elastic is sewn to fabric; gathers are formed when the elastic relaxes. Gathers are also often controlled by a *drawcord* or *drawstring* in a casing, which is a tunnel of fabric.

4.6 EASING

Easing also known as crimping (see *Box 6* on p111 in the prescribed textbook) is similar to gathering but no little pleats or folds should be visible. It is used to join two seamlines of slightly different lengths. Easing is mostly used when setting in a sleeve with a smooth sleeve head. It is very important that you understand the difference between easing and gathering.

ACTIVITY 4.1

- 4.1.1 Find **five (5)** pictures of garments which have the various methods of disposing fullness. These can be pictures of your own garments or from magazines or textbooks. Complete the table below. **Please note where a specific name is required for example, accordion pleats.**

Picture	Method of disposal of fullness

- 4.1.2 Explain the difference between gathering and easing.

LEARNING UNIT 5

NECKLINES AND COLLARS

CONTENTS

5.1	NECKLINE FINISHES	35
5.1.1	Facings	36
5.1.2	Bound necklines	36
5.1.3	Ribtrim (stretchy knit bands)	36
5.2	COLLARS	37

OBJECTIVES

After studying this learning unit, you should be able to:

- identify and differentiate between shaped facings, extended facings, bias facings, single and double bindings and stretchy knit bands
- describe when, where and how these finishes are to be used
- identify and classify different collars and give examples of each type
- explain what determines a collar type

This learning unit refers to the following pages in your textbook:

SHAEFFER, C. (2014). *Sewing for the apparel industry*. 2nd ed. Pearson Education Limited: Chapters 13, 21, 26

INTRODUCTION

In this learning unit you will learn more about important design features such as neckline finishes and different types of collars.

5.1 NECKLINE FINISHES

Necklines are one of the most important design features that determine the style of a garment. There are many neckline variations. The most common neckline shapes are:

Square neck – any square shape, varying in width and depth.

Crew neck – sits at the base of the neck and usually finished with a ribbed trim.

Keyhole neckline – can be a front or a back opening and includes a type of closure.

V-neckline – variations based on the depth and width of the neck shape.

Scoop neckline – low curved neckline.

Sweetheart neckline – low neckline with a heart shape at centre front.

Ballet neckline – a wide, round shape.

Bateau or boat neck – a high, wide shape.

Peasant neckline – gathered neck edge, usually in conjunction with a raglan sleeve.

Necklines can be finished off with a facing, a bias binding, a stretchy knit band, or with a collar.

5.1.1 Facings

Read chapter 13 in the prescribed textbook.

We can differentiate between a shaped facing, an extended facing (a variation of a shaped facing) and a bias facing.

a. Shaped facings

A shaped facing (also called separate facing) is cut from fabric with the same shape and grain as the neckline shape that requires the facing. Refer to pp203 and 208 in the prescribed textbook for a description and **illustration** of an extended facing (separate facing). Usually the facing is interfaced to prevent the neckline from stretching and losing its shape. A shaped facing differs from extended facing in that it is joined to the garment with a seam at the edge of a garment. The outer edge of the shaped facing should be finished off after the pieces have been joined; overlocking is the most common finish. The seam allowances are always trimmed, graded and clipped/notched, before they are understitched.

b. Extended facings

The extended facing is a shaped facing that is cut as one piece with the bodice front. Interfacing is fused up to the foldline (where the facing joins the front). Refer to p203 in the prescribed textbook for a description and **illustration** of an extended facing.

c. Bias facing

A bias facing should, as the name indicates, be cut on the bias of the fabric. The bias facing as a whole is turned to the inside of the garment and does not show on the outside as a bias binding does. Bias facings are not used as often as a shaped facing, a bias binding or a stretchy knit band. Commercial patterns often combine a flat collar with a bias facing.

5.1.2 Bound necklines

Read pp464–465 in the prescribed textbook. Binding is a very satisfactory method of finishing a neckline. It may be used with great success on collarless dresses, tops and T-shirts. If you are using a woven fabric, the binding should be cut on the bias. If working with knit fabric, use the crosswise grain. Although bias binding in different colours is available in shops, it is better to cut and join your own strips.

You should differentiate between single-layer bindings and double-layer bindings. When working with knit fabric, you do not have to fold the bias strip in on the inside of the garment. As the bias strip will not fray, it may be stitched from the right side as shown in the illustrations. This is a very quick and easy way of finishing the neckline of a T-shirt.

5.1.3 Ribtrim (stretchy knit bands)

Read pp460–464 in the prescribed textbook. Knit bands are used to finish knit garments at all price points. A stretchy knit band (called “ribtrim” in South Africa) is the finish

usually applied to tracksuits or T-shirts. Remember that the finished length of the ribtrim should only comprise about $\frac{2}{3}$ to $\frac{3}{4}$ of the length of the neckline. The prescribed textbook refers to a ribtrim (ribbing) as a band.

See figures 33–40 on pp462–464 in the prescribed textbook: How to apply a ribtrim.

5.2 COLLARS

Read chapter 21 in the prescribed book. Pay special attention to *Box 2: Collar Terminology*. The collar may be applied as a self-finish, with a facing or in combination. Collars are classified into three basic types: flat collars, rolled collars and standing collars. The category to which a collar belongs is determined by the relationship between the shape of the inner curve of the collar and the shape of the neckline curve. See figure 4 on p348 in the prescribed textbook.

- If the two curves are very similar, the collar will not stand up from the neck edge, and a *flat collar* will result.
- If the two curves differ slightly, the collar will to some extent stand up and will then fall. This results in a *rolled collar*.
- If the curves differ substantially, for example if the collar is only very slightly shaped or if it is straight, the collar will stand up (*standing collar*).

a. Flat collars

Flat collars are easy to make and attach. They are frequently used on children's garments. The best-known example of a flat collar is the *Peter Pan* collar. Other examples of flat collars include the *sailor collar*, *Bertha collar*, *pilgrim collar* (similar to Bertha but with an opening in the front).

b. Rolled collars

The rolled collar has a stand, a roll line and a fall. Pay special attention to the figure in *Box 2: Collar Terminology*. The straighter the neck-edge of the collar pattern, the greater the stand. The *convertible collar*, *classic notched collar* and the *shawl collar* are examples of the rolled collar. The outside edge of a shawl collar can have a variety of shapes. The distinguishing characteristic of a shawl collar is a centre back seam. The rolled collar can be applied with a full facing (front and back) or with a front facing only.

c. Standing collars

The *mandarin collar*, the *turtleneck collar*, the *polo-neck collar*, the *cowl-neck collar*, and the *shirt collar* are all examples of standing collars. The neck edge should be stay stitched and then clipped to ensure that the collar fits neatly.

The shirt collar has a collarband and a collar area. The stand may be cut separately from the collar or from the same piece as the collar. The method of application remains the same. The shirt collar is more difficult to apply than most of the other types of collars.

ACTIVITY 5.1

5.1.1 Search for pictures of different collars and complete the table below:

Picture	Name of collar	Classification

5.1.2 Find pictures of five (5) different neckline shapes and identify which neckline finish was applied.

5.1.3 Explain the differences between flat collars, rolled collars and standing collars.

LEARNING UNIT 6

SLEEVES AND SLEEVE FINISHES

CONTENTS

6.1	SLEEVELESS FINISH	39
6.2	SLEEVES	39
6.2.1	The set-in sleeve	40
6.2.2	Raglan sleeves	40
6.2.3	Kimono sleeves	40
6.3	SLEEVE FINISHES	40
6.3.1	Plackets (also called sleeve openings)	40
6.3.2	Cuffs	41

Learning outcomes

After studying this learning unit, you should be able to:

- identify the main types of sleeves and the variations of each type
- differentiate between the pattern, the shape of the sleeve head, and the method of setting-in for a standard set-in sleeve and that of a shirt sleeve

This learning unit refers to the following chapters in your textbook:

SHAEFFER, C. (2014). Sewing for the apparel industry. 2nd ed. Pearson Education Limited: **Chapters 14, 17, 18**

INTRODUCTION

In this learning unit you will learn more about the basic types of sleeves such as *set-in* sleeves, *raglan* sleeves, and *kimono* (also called Magyar) sleeves. A garment may also be sleeveless. You will also learn more about different sleeve finishes such as plackets and cuffs.

6.1 SLEEVELESS FINISH

The garment may be finished with bias armhole or a sleeveless binding, shaped or bias facing (refer to necklines). The application of both is similar to that of a neckline.

6.2 SLEEVES

Study chapter 17 of the prescribed textbook and pay special attention to *Box 1: Sleeve Terminology*. Sleeve shapes follow the general silhouette of the garment. The main sleeve classifications are based on armhole shape.

6.2.1 The set-in sleeve

The *set-in* sleeve is the basic standard. It is attached to the body of the garment around the armhole, See figure 3 on p302 in your prescribed textbook for an illustration of a set-in sleeve.

The set-in sleeve can be the most slim fitting while retaining freedom of movement. All other sleeve styles are developed from the set-in.

There are three types of set-in sleeves: the standard set-in sleeve, the shirt sleeve and the dropped shoulder sleeve. The sleeve cap of the standard set-in sleeve is higher and more rounded than the medium cap height of the shirt sleeve. The dropped shoulder sleeve basically has no sleeve cap.

In the case of the standard set-in sleeve, the underarm seam is stitched before the sleeve is inserted into the armhole. This method is called putting in the sleeve *in-the-round*. The shirt sleeve and the dropped shoulder sleeve are attached to the armhole and then to the underarm, and the side seams are stitched in one continuous seam from the bottom of the garment to the bottom of the sleeve. This method is referred to as the *flat application*. A puff sleeve is a set-in sleeve with gathers at the sleeve head and at the lower edge.

6.2.2 Raglan sleeves

The raglan sleeve is attached with a seam that runs diagonally down from the front neckline to the underarm and up again to the back neckline. In some variations the diagonal seam can be curved, for example the saddle sleeve. This sleeve can be cut as two separate pieces, or it may have a shoulder dart. See figure 3 on p303 in your prescribed textbook for an illustration of the raglan sleeve.

6.2.3 Kimono sleeves

The kimono sleeve is cut as an extension of the bodice front and back parts. This type of sleeve is also called a “Magyar sleeve”. A gusset is needed if the fit of the sleeve is very tight to introduce lift and more freedom of movement. The kimono sleeve is quick and easy to make; the ideal sleeve for a beginner. See figure 3 on p302 in your prescribed textbook for an illustration of the kimono sleeve.

The dolman sleeve is a variation of the kimono sleeve that does not require a gusset. A variation with an even deeper side seam curve is called a batwing sleeve.

6.3 SLEEVE FINISHES

The lower edge of sleeves is often finished with cuffs. Sleeve cuffs often require plackets to allow them to accommodate the wearer’s hand. Plackets are also found at necklines to allow the head to pass through the opening of the neck. These plackets can be finished in a similar way as sleeve plackets.

6.3.1 Plackets (also called sleeve openings)

A variety of sleeve plackets can be used, namely in-seam plackets, hemmed slash, faced plackets, bound plackets and tailored plackets. Study chapter 14 in the prescribed textbook. Refer to figures 1–5 on pp232–242 for illustrations and applications of different types of plackets. Pay special attention to *Box 2: Evaluation Guidelines for Plackets* on p243.

6.3.2 Cuffs

The wrist is an important focal point and a decorative cuff can have a flattering effect. The lower edge of a sleeve may be finished in any of a number of ways: a hem, a shaped facing, a bias facing, a bias binding, a casing into which elastic is inserted, a rib trim, or a *cuff*. Our discussion will focus on cuffs, as the other finishes have been discussed and hems will follow in Learning Unit 8.

A cuff need not always have an opening in order for the hand to slip through. Most cuffs, however, do have plackets. Refer to figures 1–4 on p284 for illustrations of the different types of sleeve cuffs.

ACTIVITY 6.1

- 6.1.1 Search for pictures of different sleeves and complete the table below by providing the specific name where possible, together with the category to which it belongs.

Picture	Name	Category

- 6.1.2 Describe how you would distinguish between the three basic types of sleeves.
 6.1.3 Search for your own pictures of different sleeve cuffs and complete the table below by providing the name of the cuff next to the picture.

Picture	Name

LEARNING UNIT 7

POCKETS

CONTENTS

7.1	APPLIED POCKETS (OUTSIDE POCKETS)	42
7.2	SET-IN POCKETS (INSIDE POCKETS)	43
7.2.1	Inseam pockets	43
7.2.2	Slashed pockets	43

LEARNING OUTCOMES

After studying this learning unit, you should be able to:

- identify all the types of pockets and the variations of each type
- give the full classification of pockets
- describe the different ways of reinforcing a patch-pocket corner

This learning unit refers to the following chapters in your textbook:

SHAEFFER, C. (2014). Sewing for the apparel industry. 2nd ed. Pearson Education Limited: Chapter 22 and Reader's Digest (recommended book), chapter 7.

INTRODUCTION

In this learning unit you will learn more about the basic types of pockets such as applied or patch pockets which appear on the outside of a garment, as well as set-in or inside pockets. For pictures of basic types of pockets, consult your prescribed and recommended textbooks. Besides being functional, a pocket is an important decorative feature of a garment. A standard of quality is that pairs of pockets are identical with each other. Therefore, the position of the pocket on the garment must be clearly and accurately marked.

7.1 APPLIED POCKETS (OUTSIDE POCKETS)

The pouch or bag of the pocket is visible from the outside of the garment. Patch pockets are easy to make and to attach. A simple patch pocket consists of one ply of fabric, the opening edge is finished first and it is sewn onto the outside of a garment. Patch pockets have a casual feeling but can also be used for dressy garments. Refer to figure 1 on p375 for an illustration of the parts of an applied pocket.

If two patch pockets are used on a garment front, they should be exactly the same shape and size. The beginner is therefore well advised to start off with only one patch pocket. A pocket in the breast area is usually placed on the left side for easy reach by the right hand. The corners of applied pockets should always be reinforced with stitching. There are a variety of ways in which the reinforcement can be applied.

Consult your recommended book (p238) for illustrations of different ways in which the corners of applied pockets may be reinforced.

Figure 6 on p377 in the prescribed textbook illustrates two different ways of reinforcing the corners of an applied pocket.

In addition to those methods, the whole pocket may be attached with a double row of stitching, the second row about 5 mm away from the first. Trim the raw edges on the inside of the pocket to about 5 mm. This method has the added advantage that the raw edges are caught between the two rows of stitching.

A wide variety of patch pocket styles are found:

- Patch pocket with pleat
- Patch pocket with flap
- Cargo pocket
- Patch pocket with shaped opening
- Shaped patch pocket

7.2 SET-IN POCKETS (INSIDE POCKETS)

The pouch falls inside the garment with only an opening visible from the outside. Inseam pockets and a wide variety of slashed pockets are examples of set-in pockets. Pay special attention to *Box 2: Pocket Terminology* on p385.

7.2.1 Inseam pockets

The opening of the in-seam pocket is not visible. See Figure 23 on page 383 for an illustration of an in-seam pocket. These pockets are sewn into a seamline or the inseam pocket may be cut all-in-one with the garment, completely separately, or with an extension to which the pocket may be attached. The all-in-one inseam pocket is the simplest to construct, but may require a lot of extra fabric. If the fabric is very thick, this type of pocket may be quite bulky. Inseam pockets are not suitable for sheer or translucent fabrics.

7.2.2 Slashed pockets

Slashed pockets are sewn into a slit in the body of a garment component. Slashed pockets can be used alone or with a flap. Examples are double welt or jetted pockets, single welt pockets and with flaps. Refer to pp391–400 in the prescribed textbook for detailed illustrations of slashed pockets.

ACTIVITY 7.1

- 7.1.1 Search for images of different types of pockets. Complete the table below by providing the specific name where possible, together with the category to which it belongs next to the picture.

Picture	Name	Category

- 7.1.2 Describe the two classifications of pockets.

LEARNING UNIT 7: POCKETS

- 7.1.3 Compare inseam and slash pockets.
- 7.1.4 Describe what a closed inseam pocket is.

LEARNING UNIT 8

HEMS

CONTENTS

8.1	TYPES OF HEMS	45
8.1.1	Plain hem	46
8.1.2	Single hem	46
8.1.3	Narrow machine-stitched hem	46
8.2	CRITERIA FOR A NEAT HEM	46

LEARNING OUTCOMES

After studying this learning unit, you should be able to:

- list the criteria for a neat hem
- differentiate between the three types of hems specified in this section
- identify when and where each of the three types of hems are used
- describe how each of these hems is made

This learning unit refers to the following chapters in your textbook:

SHAEFFER, C. (2014). Sewing for the apparel industry. 2nd ed. Pearson Education Limited: **Chapter 26. Also consult chapter 8 in the recommended book (Readers Digest).**

INTRODUCTION

A hem is any kind of finish at the edge of a garment. The hem is often the last part of the garment to be sewn. A hem that is too thick or too wide, or that puckers because the hemming stitch was pulled too tight, is an indication of poor sewing skills. Some hems, especially a narrow hem on a full skirt, may be machine stitched. In this learning unit you will learn more about different types of hems and the criteria for creating a neat hem.

8.1 TYPES OF HEMS

Read pp448–453 in the prescribed textbook. For the purpose of this module, we will concentrate on three different types of hems: the plain hem (EFc), the single hem (EFa), and the narrow machine-stitched hem (EFb). Refer to chapter 8 of the recommended textbook for more applications of hems.

Although sections 8.1.1–8.1.3 below are not in the prescribed textbook, you also need to be able describe the application of these types of hems.

8.1.1 Plain hem

The plain hem is used on light to medium-weight fabrics such as cottons or polycottons. It has two folds: The raw edge is folded under and stitched close to the edge (a turned-and-stitched finish.) Then the hem is folded again and sewn down with a blind hemming stitch (by machine, stitch 503) or a slip-hemming stitch (by hand).

8.1.2 Single hem

As the name indicates, a single hem has only one fold. This type of hem is used on thicker fabrics such as wool or acrylic, but it is also suitable for medium and lightweight fabrics that do not fray too much. The raw edge is finished with an overlocker (or other machine stitch such as zigzag). The hem is sewn down with a blind-hemming stitch (by hand). On knit fabrics the single hem is sewn with a coverstitch, stitch classification: 406, seam: classification.

8.1.3 Narrow machine-stitched hem

The narrow machine-stitched hem is frequently used on blouses or full skirts made of soft fabrics. It is sewn with a lockstitch, stitch class 301 (straight stitch).

8.2 CRITERIA FOR A NEAT HEM

The width of the hem should be appropriate for the fabric type and the style of garment.

Straight skirts made of heavy fabric may have a wider hem than circular skirts made of thin fabric.

The hem width should be even all round.

The garment should hang evenly.

Unless it is intended to be decorative, the hem should be inconspicuous when viewed from the right side. Hemming stitches should not show through and the hem should not pucker or be pressed through.

ACTIVITY 8.1

8.1.1 Distinguish between the three hem types.

8.1.2 Select any garment from your cupboard and use the criteria for a neat hem to evaluate the hems in the garment.

LEARNING UNIT 9

FASTENERS

CONTENTS

9.1	TYPES OF ZIPPERS	47
9.2	APPLICATION OF ZIPPERS	48
9.3	BUTTONS AND BUTTONHOLES	48
9.3.1	Buttonhole length and position	48
9.3.2	Attaching buttons	48
9.4	OTHER TYPES OF FASTENERS	49
9.4.1	Hooks and Eyes	49
9.4.2	Snap fasteners (press studs)	49

LEARNING OUTCOMES

After studying this learning unit, you should be able to:

- differentiate between the three main types of zippers
- differentiate between the three types of buttonholes
- identify when and where the different types of buttonholes are used
- physically determine and describe the buttonhole length and position

This learning unit refers to the following chapters in your textbook:

SHAEFFER, C. (2014). *Sewing for the apparel industry*. 2nd ed. Pearson Education Limited: Chapters 19 and 20.

INTRODUCTION

In this learning unit you will learn more about the different types of closures (fasteners) and their application on a garment. For pictures of different types of closures, consult your prescribed and recommended textbooks.

9.1 TYPES OF ZIPPERS

Refer to pp333–346 in the prescribed textbook for detailed illustrations and applications of types of zippers. Pay special attention to *Box 1: Zipper Terminology*.

We may distinguish between the conventional or closed-end zipper, the invisible zipper, and the open-end zipper. For many years, the invisible zip was not available in South Africa.

The *closed-end zipper* is the type most frequently used for openings in skirts and pants, and has metal or nylon teeth.

The *invisible zipper* is not suitable for medium to heavy-weight fabrics.

The *open-end zipper* is frequently used in windbreakers, track-suit tops, or jackets with a front opening. These types of zippers are now widely available.

It is always advisable to pre-shrink a zipper.

9.2 APPLICATION OF ZIPPERS

The different ways of inserting a zipper are the centred or slot method (slot zipper in the textbook), the lapped method (welt zipper in the textbook), the fly-front method (fly zipper), the invisible method (invisible zippers) and the open-end method. Although the open-end method is not discussed in the prescribed textbook, you should still be able to explain its application. The centred and lapped applications are used most frequently.

The centred application is easier to use than the lapped application. The lapped application method is perhaps slightly more intricate than the centred method, but covers the zipper teeth better.

9.3 BUTTONS AND BUTTONHOLES

Read pp311–326 in the prescribed textbook. Pay attention to *Box 3: Determine the Buttonhole Length* and *Box 6: Buttonhole Placement*.

There are three main types of buttonholes: the *bound buttonhole*, the *machine-worked buttonhole*, and the *hand-worked buttonhole*. Of these three buttonholes, the machine-worked buttonhole is used most frequently. Most modern machines have built-in buttonhole stitches and/or a buttonhole attachment. Even if the machine does not have automatic buttonhole stitches, it can still be used to make a machine-worked buttonhole provided it has a zigzag stitch.

9.3.1 Buttonhole length and position

The length of the buttonhole opening should equal the diameter of the button plus the height of the button. Do not make any buttonholes in a garment until you have bought the buttons. It is very disappointing to find that the button that best suits the garment does not fit the buttonhole.

Buttonholes are usually made along the straight grain of the fabric, and on a double layer of fabric. Horizontal buttonholes are able to withstand a certain amount of strain and are therefore more secure. Vertical buttonholes are used on men's or ladies' wear when a narrow placket such as a shirt band forms the opening.

9.3.2 Attaching buttons

Refer to pp325–326 and pay special attention to *Box 7 (Marking Buttonhole Locations)*. There are two basic types of buttons: shank buttons and sew-through buttons. Shank buttons have built-in necks or shanks, allowing space for the fabric layers through which the buttonhole is made. A sew-through button may have two or four holes and, unless the button is used only for very thin fabrics, or decoratively, you will have to make a thread shank.

Buttons, hooks and eyes, and press studs are always sewn on using a single thread through a double layer of fabric. If the button is likely to be under strain, or the garment is made of heavy fabric, the point of attachment can be reinforced by placing a doubled square of

fabric or a piece of Vilene on the wrong side of the material, or by placing another small, flat button on the inside and sewing through all the sets of holes.

To sew on a button, make two small stitches at the mark for the button position. Bring the needle up through one eye of the button. Place a pin or matchstick across the top of the button. Take the thread across the pin or match before taking it down through the second hole. Repeat until enough stitches have been made. Remove the pin or match, and pull the button away from the fabric. Wind the thread around the stitches between the fabric and the button to make a shank. Take the needle through to the wrong side and secure by blanket stitching over the stitches on the inside.

9.4 OTHER TYPES OF FASTENERS

Refer to pp327–330 for illustrations of other fastening devices.

9.4.1 Hooks and Eyes

There are two different kinds of hooks that are identified by their application: sew-on and machine-set loops. A thread eye may be used with a small button to close a neck opening. This is then called a button loop.

9.4.2 Snap fasteners (press studs)

A variety of decorative snap fasteners that are not sewn onto the garment but are attached with a hammer or with special pliers are currently available. They give a very professional appearance to a garment.

ACTIVITY 9.1

- 9.1.1 Identify the different parts of a zipper.
- 9.1.2 Describe how you would determine the length of the buttonhole.
- 9.1.3 Discuss the criteria for selecting the specific closure.
- 9.1.4 Explain the placement of the buttonholes.