

Unit 124: Production Techniques for Fashion and Clothing

Unit code:	H/502/5024
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

The aim of this unit is to develop learners' skills and understanding of the range of fabrics and materials, equipment, and production processes used within the manufacture of fashion garments.

● Unit introduction

Fashion designers have at their disposal an extensive range of fabrics and production processes, enabling the creation and manufacture of increasingly sophisticated, experimental and high quality garments.

This unit aims to introduce learners to the properties and characteristics of fabrics and fibres, their suitability to the manufacture of a range of fashion garments, and the range of manufacturing equipment and production processes. This will provide the skills, knowledge and understanding from which learners will be able to assemble a finished garment.

Learners will develop skills in working with appropriate machinery, equipment and hand tools in the manipulation of a range of fabrics. They will gain an understanding of the sequence of operations used during the production process by producing specific garments.

Learners will need to be aware of health and safety issues associated with the equipment and materials that they use. Appropriate risk assessments and any relevant COSHH guidance should be followed at all times.

The knowledge and understanding gained in this unit underpin other fashion and clothing specialist units within this qualification and it is essential for learners' vocational understanding. Consequently, briefs should be designed to allow for the appropriate development of skills, knowledge and understanding, relative to learners' stage of development, set within a vocational framework. This will enable learners to locate their practice in a real context which can be further extended in other units, including contextual studies research work.

Learners are encouraged to look at a variety of garments to develop their skills and understanding of the techniques required for garment manufacture. Assignment briefs should be stimulating and motivating to encourage learners to develop and acquire new skills.

● Learning outcomes

On completion of this unit a learner should:

- 1 Know about the properties and characteristics of fabrics and fibres
- 2 Be able to use equipment and machinery for sample production
- 3 Be able to demonstrate the safe operation of equipment and machinery
- 4 Be able to plan and use production processes to assemble a finished garment.

Unit content

1 Know about the properties and characteristics of fabrics and fibres

Properties: eg absorption, strength, construction, elasticity, flammability

Characteristics: eg appearance, colour, texture, behaviour

Fabrics and fibres: natural fibres eg wool, cotton, linen, silk; manmade fibres eg regenerated cellulose, polyamides, polyesters, polypropylenes, acrylics, elastomers; naturally occurring sheet material eg skins, furs; manmade eg rubbers, plastics, paper

2 Be able to use equipment and machinery for sample production

Equipment: eg steam iron, dress stands; hand tools eg scissors, knives, tape measures

Machinery: sewing machines; lock stitch and overlock equipment; pressing equipment eg Hoffman press

Sample production: stitched samples eg seams, darts, collars, cuffs, sleeves, facings, waists, hems, fastenings, pockets; using a variety of materials; completed garment, accessory

3 Be able to demonstrate the safe operation of equipment and machinery

Safe: health and safety (for self, others); in the workplace; manufacturers' guidelines; relevant legislation; Health and Safety at Work Act 1974

Operation: eg on/off switch, needle up/down, knee lift, needle changing, threading, spool filling, adjusting stitch length/width, correcting tension

Equipment and machinery: eg sewing machines, lock stitch and overlock equipment, Hoffman press

4 Be able to plan and use production processes to assemble a finished garment

Plan: eg sequence of operation; production process, production techniques; threads, trims; quality checks

Production processes: design (garment, accessory); pattern cutting; seaming; seam finishes; fashion details; pressing; finishing

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 identify the properties and characteristics of different fabrics and fibres and produce stitched samples [IE]	M1 produce stitched samples that show consistent understanding of the characteristics of diverse fabrics and fibres and the equipment used	D1 demonstrate through exploration and clear articulation, the potential and limitations of fabrics and fibres used in garment production
P2 use machinery for sample production [CT]	M2 plan for, select and use equipment and processes, demonstrating skill, increasing independence and understanding to produce a well-finished quality garment.	D2 analyse production processes independently and synthesise operations in the development of a sample garment which demonstrates a high level of practical skill.
P3 demonstrate the safe operation of equipment and machinery [SM]		
P4 plan and use the production process to assemble a finished garment. [CT]		

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

Tutors delivering this unit should provide learners with an introduction to basic equipment and hand tool use from which they will build on learners' skills to explore a range of production techniques and processes.

Tutors should teach learners the appropriate health and safety procedures and demonstrate safe working practices at all times. Learners should understand the process of risk assessment and be able to apply this to their own working practice.

Learners should be encouraged to be experimental in their exploration of a range of fabrics and fibres and to identify their properties and characteristics. It is, therefore, essential that learners have access to a wide range of fabrics and fibres used in the fashion industry. It is anticipated that many of the processes and techniques used for garment production will be explored by tutor demonstration in the first instance followed by a series of practical exercises.

Learners need identify common faults with equipment and production processes. Since the production process varies according to the garment to be produced, it is anticipated that learners will be given guidance at the start of the unit, acquiring understanding and skills as the unit develops, and be given the opportunity to work independently where possible.

Learners need produce a portfolio or reference file of fabrics and stitched samples, which should be developed as the unit progresses.

Learners should explore a variety of production techniques to broaden their skills, knowledge and understanding of the production processes and having completed a simple half-scale skirt should progress to the production of a full-scale garment. This should be accompanied by a full list of fabric and haberdashery requirements, a sequence of operation for the garment manufacture, a record of the construction process and evaluation of the finished garment.

Tutors should encourage learners to look at new technologies available within the textiles and fashion production and manufacturing processes.

Learning outcome 1 can be evidenced by the production of a sample portfolio. The portfolio should include stitched samples, which use a range of different fabrics and fibres. The samples should be annotated demonstrating the properties and characteristics of the fabrics used and the garment production process.

Learning outcomes 2 and 3 can be evidenced by observing learners selecting and using appropriate machinery to produce samples or individual garments. It can also be evidenced by annotating samples, and evaluating of the samples and production process. The recording of pair work can also be observed by the tutor.

Evidence for learning outcome 4 can be in the form of a written report of the production process, a sequence of operation which outlines the production process and an evaluation of the finished garment. This work should be accompanied by a finished sample garment which has been appropriately assembled. Additional evidence may take the form of tutor observation and questions and answers.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Introduction to unit and assignment programme.
Assignment 1: Production Techniques Portfolio
Introduction to unit and assignment brief – whole class.
Induction to sewing machine workshop to include risk assessment and demonstration of tools and equipment associated with garment production – whole class with activities.
Demonstration to introduce sewing machines with individual practical exercises. Learners will produce a series of simple tasks using basic production processes.
Demonstration on fault finding and correction. Learners work in pairs to identify common faults.
Lecture on the range of fabrics and fibres, their properties and characteristics.
Research into natural and manmade fabrics by individuals.
Learners individually collate a reference file to include basic production processes incorporating a range of fabrics and fibres.
Learners individually manufacture a simple half-scale skirt to include basic production processes.
Learners produce sequence of operation for garment manufacture in negotiation with peers and tutor.
Demonstration and discussion on quality checks by tutor.
Assignment 2: Garment Production
Introduction of brief to group.
Learners individually individuals to produce a list of fabric and haberdashery requirements.
Tutor demonstrates pattern laying and learners cut out garment individually.
Learners manufacture a finished garment individually.
Learner-initiated study.
Learners record production processes and evaluate the finished garment.
Review of unit and assessment.

Assessment

To achieve P1, learners should identify the properties and characteristics of diverse fabrics and fibres. Learners should select the appropriate fabrics and production process for sample production and garment, as each individual fabric needs to be used and handled in different ways. Evidence should include practical testing and the production of a portfolio of samples.

For P2 and P3, learners must select and operate of equipment safely. Learners need to follow a selection of sample production processes demonstrating their understanding and practical application. They should adhere to safe working practices at all times.

For P4, learners must produce a finished garment which demonstrates a variety of production processes and includes cutting out of a pattern, seaming, seam finishes, fashion details, pressing and finishing techniques. The garment must be accompanied by evidence of the planning process, which should include; sequence of operation of the production process, identifying production techniques, different types of threads, trims, and

carrying out quality checks. It should also include an evaluation of the garment production process.

To achieve M1, learners should individually select fabrics and fibres and support their selection with either verbal or written understanding. They should present the work in the form of stitched samples that demonstrate consistent understanding of appropriate techniques and use of equipment.

For M2, learners should independently plan and select appropriate pieces of equipment and processes whilst producing sample garments and test pieces. They should consistently demonstrate good practice (with consideration to both self and peers) when operating equipment and hand tools within a workshop environment. Learners must also demonstrate effective planning in terms of action planning, identification and selection of individual production techniques and processes, in addition to the production of a well-finished quality garment.

To achieve D1, learners must comprehensively articulate the potential and limitations of a wide range of fabrics and fibres, a number of which will have been independently sourced. This may take the form of an ongoing portfolio, which could include a body of samples and the addition of a quality finished garment that demonstrate a range of production processes, fabrics and techniques.

For D2, learners must independently analyse production processes and synthesise a range of operations used in the development of a sample garment which demonstrates a high level of practical skill.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, P3 M1 D1	Assignment 1: Production techniques portfolio (individually worked file)	Fashion designer working to produce a portfolio of work for an interview to demonstrate skills and understanding of the production process.	<ul style="list-style-type: none"> • Stitched samples. • Research on fabrics and fibres. • Annotated notes. • Variety of fabrics. • Health and safety documentation. • Evidence of rectifying common machine faults. • ½ scale skirt sample. • Record of tutor observations.
P2, P3, P4 M2 D2	Assignment 2: Garment production (individually produced finished sample garment)	Brief from a manufacturing company to produce a sample garment to a specified target market to a given budget and deadline.	<ul style="list-style-type: none"> • Finished garment. • Sequence of operation. • Record of the production process. • Fabric and haberdashery requirements listing. • Evaluation. • Record of tutor observations.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Art and Design sector suite. This unit has particular links with the following unit titles in the BTEC Art and Design suite:

Level 1	Level 2	Level 3
Introduction to Hand and Machine Sewing Techniques	Working with Fashion Briefs	Pattern Construction
	Working with Accessory Briefs	Garment Production
		Pattern Development
		Pattern Grading

National Occupational Standards

This unit also provides development opportunities for some of the underpinning skills, knowledge and understanding of the following National Occupational Standards:

Skillfast-UK Sector Skills Council

TP 18 Drafting pattern for costumes

- O46NAMTech 13 Construct and adapt patterns to customer requirements
- AMTech 19 Investigate markets, materials and styles
- AMTech6 Produce Block and Graded patterns for Apparel Products
- AMT7 Produce Prototype/Sample Patterns and Assess for Fit
- ATM8 Produce Lay Plans for Apparel Products.

Essential resources

Learners need access to the appropriate production equipment used within the fashion and clothing industry, such as industrial sewing equipment, including flat bed sewing machines, overlocking machines and industrial pressing equipment. Domestic machines can be used. In addition learners should have access to a range of fabrics for sample production.

Employer engagement and vocational contexts

Centres should develop links with practising fashion and tailors, to deliver assignments to learners or to provide work experience.

Links with employers are essential to the delivery of the programme for work experience and future employment.

Vocational learning support resources:

- Learning and Skills Network – www.vocationallearning.org.uk

Business and finance advice:

- local and regional Business Link – www.businesslink.gov.uk

Assignments should be vocationally relevant; centres should consider the delivery of 'live projects', for

example, to support the vocational content of the unit and programme.

Creative and Cultural Skills (www.ccskills.org.uk), the Sector Skills Council for Arts, Crafts and Design, has launched the web portal Creative Choices (www.creative-choices.co.uk). This portal has a range of information about careers in the arts, crafts and design sector, including job descriptions.

Skillfast-UK, the Sector Skills Council for Fashion and Textiles (www.skillfast-uk.org), provides details on careers (www.skillfast-uk.org/justthejob) and the industry and has regularly updated news and events pages.

Indicative reading for learners

Textbooks

Emery I – *The Primary Structures of Fabrics: An Illustrated Classification* (Thames & Hudson, 2009)
ISBN 978-0500288023

Holland S K – *All About Fabrics: An Introduction to Needlecraft* (Oxford University Press, 1987)
ISBN 978-0198327554

Jenkyn Jones S – *Fashion Design* (Portfolio Series) (Laurence King, 2005) ISBN 978-1856694360

Miller E – *Textiles: Properties and Behaviour in Clothing Use* (Batsford, 1992) ISBN 978-0713472356

Moss S – *Costumes and Chemistry: A Comprehensive Guide to Materials and Application* (Batsford, 2001)
ISBN 978-0896762145

Shaeffer C – *Sewing for the Apparel Industry* (Prentice Hall, 2001) ISBN 978-0321062840

Shaeffer C – *Claire Shaeffer's Fabric Sewing Guide* (Krause Publications, 2008) ISBN 978-0896895362

Websites

www.drapersonline.com/ Drapers magazine online

www.vogue.co.uk/ Vogue Magazine

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	producing a portfolio of samples which demonstrates the properties and characteristics of a range of fabrics and fibres
Creative thinkers	using appropriate machinery for garment production planning and using appropriate production processes to assemble a finished garment
Self-managers	producing a fabric and haberdashery requirement listing organising time and resources when completing garment production demonstrating safe practice when using equipment and machinery.

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Independent enquirers	independently planning the production process independently selecting appropriate fabrics and haberdashery
Creative thinkers	adapting to problems encountered during the production process finding innovative solutions to problems encountered
Reflective learners	setting goals with criteria for production process recording the production process to include reflection on the process
Team workers	working to produce a collection of garments as part of a team
Self-managers	working to deadlines dealing with problems and rectifying faults
Effective participators	working to a team brief participating in group critique.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	researching the properties and characteristic of fabrics and fibres
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	selecting and collating information to support sample file
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> • text and tables • images • numbers • records 	producing their own notes to support sample file producing a list of fabric and haberdashery requirements, sequence of operation and evaluation of finished garment
Bring together information to suit content and purpose	
Present information in ways that are fit for purpose and audience	
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	participating in discussion and working in pairs to identify common machine faults
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	researching information on fabric and fibres
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	producing supporting information for sample file, a list of fabric and haberdashery requirements, a record of the production process and an evaluation of the finished garment.