







AS Fashion and Textiles– Written paper




Mark on how confident you are with each topic and what you need to do, use this as a checklist for your revision notes and then to keep track of the topics you have revised. Tick and date once you have completed the tasks.




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Materials and applications									
Ref 3.1.1									
Overview from syllabus									
Content from syllabus				Specific skills or knowledge to be assessed					
Why specific materials and combinations of materials are suitable for given applications with reference to: <ul style="list-style-type: none"> • physical and mechanical properties and working characteristics • product function • aesthetics • cost • manufacture and disposal. 				Understand the appropriate use of textile materials based on their physical and working characteristics such as: <ul style="list-style-type: none"> • thermal insulation • ability to reflect light • thermoplasticity • flammability • ability to absorb moisture • development of static electricity. Calculation of quantities of materials sizes and costs.					
Classification of materials Natural fibres - Animal – wool, silk Vegetable- cotton, linen, ramie Regenerated cellulosic- viscose, acetate, New generation lyocells - Modal®, Tencel®, Lyocell® Synthetic polymers – polyester, acrylic				Aesthetic, functional and structural composition, working characteristics and advantages/disadvantages of the following fibres in the design and production of textile yarns, fabrics and products:					




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3.1.2 Performance characteristics of materials




<p>Performance characteristics of fibres The performance characteristics of fibres, including:</p> <ul style="list-style-type: none"> • absorbency • strength • elasticity • flammability • thermal qualities • lustre • handle. <p>The specific performance characteristics of different fibres including:</p> <ul style="list-style-type: none"> • plant/cellulose fibres: very absorbent, little elasticity, good strength, poor insulators • animal/protein fibres: very absorbent, thermally insulating • regenerated fibres: poor strength, soft, highly absorbent, crease badly • new generation lyocells: with improved performance characteristics • synthetic fibres: very good strength, totally non-absorbent, smooth, 				<p>Understand how the physical shape and formation of fibres affect their performance.</p>				
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lightweight, do not crease, can be heat set (thermoplastic).								
<p>Performance characteristics of yarns That fibres need to be made into yarns before they can be manufactured into woven and knitted fabrics. Students should be able to explain the performance characteristics of yarns, including:</p> <ul style="list-style-type: none"> • the importance of twist in relation to strength and bulk of yarn • technical terms relating to yarns • staple and filament yarns. <p>Students should be able to describe the main yarn types:</p> <ul style="list-style-type: none"> • textured yarns: why yarns need to be textured, the importance of thermoplastic qualities in the texturing process • fancy yarns: bouclé, slub, chenille, metallised yarns. 			Students should be able to explain the performance characteristics of yarns,					
<p>Performance characteristics of woven fabrics The main fabric structures of woven fabrics and the ability to recognise these structures and typical end uses for a range of woven fabrics, including:</p>				The main fabric structures of woven fabrics and the ability to recognise these structures and typical end uses for a range of woven fabrics,				




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and synthetic fibres and fabrics, including: <ul style="list-style-type: none"> • Tactel® Lyocell® Modal® Tencel® Lycra® Polar fleece. 									
<p>Performance characteristics of fabrics</p> <p>The performance characteristics of fabrics, including:</p> <ul style="list-style-type: none"> • strength • durability • elasticity • flammability • thermal qualities • absorption • water-resistance • stretch • formability • handle • drape • weight. <p>Students should be able to explain the following terms, and how they relate to particular fabrics:</p> <ul style="list-style-type: none"> • pattern repeat • directional pile • nap • texture • lustre. 				<p>Understand how the physical structure of fabrics affects performance.</p> <p>Understand that environmental factors can cause potential degradation of fabrics, eg with reference to colour fastness, weakening by sunlight and chlorine, inappropriate care routines</p> <p>Students should be able to describe and explain the following, and how they relate to particular fabrics and their uses:</p>					




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<p>Students should be able to describe and explain the following, and how they relate to particular fabrics and their uses:</p> <ul style="list-style-type: none"> • woven fabrics have relatively good strength and stability • non-woven fabrics lack strength and have no grain • knitted fabrics have fluidity and stretch • a nap, or pile, reflects light in different ways • size of pattern repeat in relation to the appearance of a product. <p>How the properties of fabrics and their physical characteristics relate to their selection for specific fashion, clothing and textile products.</p> <p>This should include reference to both fabric construction and fibre/yarn content and the inter-relationship between them in determining the overall characteristic of a fabric.</p> <p>Properties and physical characteristics to include:</p> <ul style="list-style-type: none"> • tensile strength • elasticity • resilience 								




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<ul style="list-style-type: none"> the mechanics of blending different fibres together how fibres are combined together to make yarns, eg staple fibre blends and multifilament yarns yarns made from mixes of staple fibres and filament fibres cut down to staple form fibre content of typical blends. <p>Non-woven fabrics The production processes associated with nonwoven fabrics, including:</p> <ul style="list-style-type: none"> felts, adhesive and heat bonded. <p>Students should be aware of, and be able to describe, the production processes associated with woven effects with coloured yarns, including:</p> <ul style="list-style-type: none"> checks and stripes including gingham, tartan, madras. 								
3.1.3 Methods of joining fabrics and use of components								
<p>Seams Different seam types and their selection and use on different products taking into account the fabric type, effect to be achieved, efficiency of manufacture and after care of product.</p>								




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<p>Interfacings, underlinings, linings, interlinings</p> <p>Types and applications in relation to fabric weight and construction, and end use of product. Students should have knowledge of the different fabrics used and the reasons for choice in relation to specific products.</p>								
3.1.4 The use of finishes								
<p>Fabric finishes</p> <p>Students should be aware of, and be able to describe, the effects of finishes and the reasons they are needed in relation to:</p> <ul style="list-style-type: none"> • the fibre/fabric properties • end use of the product • improving aesthetic or functional qualities 								
<p>Mechanical finishes</p> <p>Students should be aware of, and be able to describe, a range of mechanical finishes, including:</p> <ul style="list-style-type: none"> • brushing/raising • calendaring • embossing • heat setting using thermoplastic fibres to give permanent pleats or 				Understand how the physical characteristics of fabrics can be modified by using mechanical finishes, eg trapped air acts as an insulator, air supports combustion, smooth fabric reflect light better than those with texture.				




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crinkles and make fabric non-crease and nonshrink.								
<p>Chemical finishes Students should be aware of, and be able to describe, a range of chemical finishes, including: <ul style="list-style-type: none"> • flame retardancy, eg Proban® and Pytovatex® used on cotton fabrics • water resistance • non-iron/crease resistance, eg Teflon • shrink resistance. Detailed knowledge of the chemicals involved and methods of application is not expected </p>				Understand how the physical characteristics of fabrics can be modified by applying chemical finishes.				
<p>Laminating as a finishing process Laminated fabric is a membrane system made up of two or more layers, and students must understand the principles behind how laminated fabrics work. Students should be able to describe a range of laminated fabrics, including: <ul style="list-style-type: none"> • Gore-Tex® • Sympatex®. </p>								
3.1.5 Enhancement of materials								
Surface decoration – dyeing.				Understand the principles behind discharge and resist dyeing.				




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<p>Students should be aware of dyeing as a surface decoration, including:</p> <ul style="list-style-type: none"> • vat, discharge and resist, eg tie-dye, batik • when dye is applied in relation to fibres, yarns, fabrics and finished products • the different types of dye fastness required in fashion clothing and textile products, eg fastness to washing and light. 				Understand the degradation of fabrics in relation to colour fastness.				
<p>Surface decoration – printing</p> <p>Students should be aware of, and be able to describe, printing as a surface decoration, including:</p> <ul style="list-style-type: none"> • hand (block and stencil) • rotary/flat bed screen printing • transfer • digital printing • dye sublimation. 								
<p>Embroidery</p> <p>Students should be aware of, and be able to describe, a range of hand and machine embroidery stitches.</p>								
<p>Quilting</p> <p>Students should be aware of, and be able to describe, the construction of quilted fabrics and reasons for their use</p>				Understand the effects of trapped air on thermal insulation.				




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Sub-assembly as a separate line of manufacture for some parts of a product								
3.1.7 ,Efficient use of materials								
Students must develop an awareness of the relationship between material cost, form, and manufacturing processes, and the scale of production. The development of designs which use materials economically and with regard to their characteristics. The use of manufacturing processes which increase accuracy and reduce waste. The savings to be gained when comparing bulk production with one-off production. The advantages of Just In Time (JIT) manufacture				Determining quantities of materials.				
3.1.8 Digital design and manufacture								
<p>Computer aided design (CAD).</p> <ul style="list-style-type: none"> • The advantages and disadvantages of using CAD compared to manually generated alternative. • The use of CAD to develop and present ideas for products. • Simulation 				Use of datum points and geometry when setting out design drawings. The use of tolerances in dimensioning.				

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<p>Computer aided manufacturing (CAM). Students should be aware of, and be able to describe, how CAM is used in the manufacture of products. Specific processes to include:</p> <ul style="list-style-type: none"> • fabric manufacture • fabric printing • lay planning and computer controlled cutting • automated buttonholing • making and sewing of pockets • seam stitching • pressing • computer controlled decorative processes • laser cutting 				Calculating speeds and times for machining.				
<p>Computer aided design (CAD) The advantages and disadvantages of using CAD compared to manually generated alternative.</p> <ul style="list-style-type: none"> • The use of CAD to develop and present ideas for products. 				Use of datum points and geometry when setting out design drawings. The use of tolerances in dimensioning.				
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<ul style="list-style-type: none"> • the application of ergonomic and anthropometric principles in the development of design ideas • consideration of aesthetic and functional qualities. Students should develop the skills to critically assess products and develop new design proposals. Students should develop their ability to work with a variety of materials, including two- and three dimensional forms, to produce creative and original products which satisfy the demands of the target market, and consider accurate and efficient manufacture. Inclusive design. When designing products students should consider aesthetics, ergonomics and anthropometrics. 								
<p>Inclusive design Students should be aware of, and be able to explain, the development of products that are inclusive in their design so that they can be used by a wide range of users including the disabled, children, the elderly, transgender people and gender nonconformists.</p>								

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The importance of marketing and brand identity, including: <ul style="list-style-type: none"> • customer identification • labelling • packaging • corporate identification. 				Interpretation of market research data, calculating costs and profit.				
3.1.13 Design communication								
A range of communication and presentation techniques for conveying design proposals to clients, potential users and manufacturers, including: <ul style="list-style-type: none"> • report writing • the use of graphs • tables and charts • 2D/3D sketching • the use of mixed media and rendering to enhance drawings • dimensioning and details for manufacture. 				Scaling drawings. Use of datum points and geometry when setting out design drawings. Representation of data used to inform design decisions and evaluation of outcomes. Presentation of market data, user preferences and outcomes of market research.				
3.2 Designing and making principles								
3.2.1 Design methods and processes								
Iterative design process Different approaches to user centred design. That in approaching a design challenge there is not a single process, but that good design always addresses many issues, including:				Representation of data used to inform design decisions and evaluation of outcomes. The use of ergonomic and anthropometric data when designing products for humans and specific applications.				

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<ul style="list-style-type: none"> • use of inspiration materials, eg mood boards • ideas generation • illustration • modelling • planning • evaluating and testing 								
<p>Prototype development Students should be aware of, and able to discuss and demonstrate, the development of a prototype from design proposals. This knowledge should influence the development of design ideas for the NEA so that students may make high quality products the meet the needs of identified users. Students should have knowledge and experience of:</p> <ul style="list-style-type: none"> • basic pattern/template drafting, knowledge and use of technical terms, including: • basic block • labelling • notching • balance marks • seam allowance • be able to work from a set of basic block patterns, developed from 				The use of mathematics in developing pattern templates.				

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<p>Use of third party feedback in the testing and evaluation process. How the use of feedback and testing informs the evaluation process, including:</p> <ul style="list-style-type: none"> • informing future modification and development • the importance of ensuring the views of other interested parties are sought in order to have objective and unbiased feedback 								
3.2.6 Selecting appropriate tools, equipment and processes								
<p>Good and safe working practices. Students should be aware of, and able to demonstrate, good and safe working practices, including:</p> <ul style="list-style-type: none"> • the importance of using the correct tools and equipment for specific tasks • the importance of ensuring their own safety and that of others when in a workshop situation. 								
3.2.7 Accuracy in design and manufacture								
<p>Measuring and marking out Students should be aware of, and demonstrate, the importance of accuracy in manufacturing, including:</p>				<p>Determining quantities of materials. Calculation of sides and angles of products. Use of datum points and geometry when setting out design drawings. Use of geometry to create templates for designs</p>				

Review of previous examinations: