

Department	Design and Technology
Year	Y10
Qualification	BTEC L2 Engineering

BCHS Curriculum Map 2016-2017

Term	Autumn 1								
Autumn 1	Topic	Analyse a Lotus Elise, exploring form, function, ergonomics and user requirements.	Write a detailed specification for a new Lotus Elise, focussing on form, function, ergonomics and user requirements.	Examine the performance requirements of a Lotus Elise, and explore how a user can maintain the vehicle.	Determine basic material requirements for the Lotus and key components within the vehicle.	Research key legal, safety and relevant legislation that a company producing vehicles would have to comply with.	Justify the need to consider Basic criteria when writing a specification for an engineering product.	Justify the need to consider advance criteria when writing a specification for an engineering product.	Gather evidence for justifying the need to consider basic and advanced criteria.
	Assessment		Assess against assessment criteria for 2A.P1 Basic Criteria			Assess against assessment criteria for 2A.P1 Advanced Criteria			Assess against assessment criteria for 2A.M1

		Autumn 2						
	Topic	Define a wide range of properties that need to be considered when selecting engineering materials.	Research and explore the mechanical properties of correct grades of materials.	Research and explore the environmental impact of engineering materials.	Research and explore the qualities of materials and explore two alternatives.	Research and explore the mechanical properties of correct grade of fibre glass.	Research and explore the environmental impact of correct grade of fibre glass.	Research and explore the qualities of fibreglass and two alternatives.
	Learning outcome B							
	Assessment				Interim assessment against criteria for 2B.P2.			Assess against criteria for 2B.P2.

Spring 1

Topic	Explore the properties and environmental impact of carbon fibre, as an alternative.	Explore the properties and environmental impact of hemp plastic, as an alternative.	Explore the properties and environmental impact of ceramics, as an alternative.	Explore the properties and environmental impact of polymers.	Evaluate why mass produced panels are made from fibre glass despite there being two viable alternatives.	Evaluate why mass produced chassis are made from aluminium, despite there being two viable alternatives.
Assessment		Interim assessment against criteria for 2B.M2.		Assess against criteria for 2B.M2.		Assess against criteria for 2B.D1.

Spring 2

Spring 2						
	Topic	Observe and identify the main processes involved in injection moulding and rotational moulding.	Observe and identify the main processes involved in cold forging and skew rolling.	Collate evidence for injection moulding, rotational moulding, cold forging and skew rolling.	Compare injection moulding and rotational moulding processes in relation to making drill casings. Justify why injection moulding is the most suitable method.	Compare cold forging and skew rolling processes in relation to making ball bearings. Justify why cold forging is the most suitable method.
	Learning outcome C					
	Assessment			Assess against criteria for 2C.P3.		Assess against criteria for 2C.M3.

Summer 1

Summer 1							
Topic	Learners to reflect on outcomes of practical activity, stating the activity and why certain aspects were successful, and procedures they followed to ensure this.	Learners to reflect on outcomes of practical activity, stating the activity and why certain aspects were unsuccessful, and what procedure could be put in place in the future to increase success rate.	Observe the use of Quality Control within a range of manufacturing companies.	Explain how the use of Quality Control systems can benefit the operation manufacturing companies.	Observe the use of Quality Assurance within a range of manufacturing companies.	Explain how the use of Quality Assurance systems can benefit the operation manufacturing companies.	Explore and identify a specific Quality Assurance procedure within a manufacturing company that could be used as a case study.
Assessment		Assess against criteria for 2C.D2		Assess against criteria for 2D.P4		Assess against criteria for 2D.P5	

Summer 2

Summer 2							
Topic	Observe the use of a specific Quality Assurance within a manufacturing company, analysing whether it is fit for purpose.	Compile report, analysing specific Quality Assurance within a manufacturing company, and suggesting improvements.	Using a case study observe and begin to evaluate the use of and effectiveness of quality control checking systems for an engineered product.	Compile report, evaluating the use of and effectiveness of quality control checking systems for an engineered product.	Using a case study observe and begin to evaluate the use of and effectiveness of quality assurance checking systems for an engineered product.	Compile report, evaluating the use of and effectiveness of quality assurance checking systems for an engineered product.	Submit all work and assess against criteria. Reflect and improve.
Assessment		Assess against criteria for 2D.M4		Interim assessment against criteria for 2D.D3		Assess against criteria for 2D.D3	

