

## YEAR 10 Engineering Design (CN Level 2) Curriculum Map

	Lesson Focus	Homework	Assessment	Enrichment	
<b>Autumn Term – UNIT R105 - DESIGN BRIEFS, DESIGN SPECIFICATIONS AND USER REQUIREMENTS (Exam unit, 25% of qualification)</b>					
Autumn 1	Week 1	Introduction to the course  <i>LO1: Understand the design cycle and the relationship between design briefs and design specifications.</i>  LO 1.1 The design cycle: identify and design Phases (R107 LO1 & LO2) (R108 LO1)	Independent Learning Task (ILT) – Flipped learning in preparation for next week's focus. ILT LO 1.2	Baseline Knowledge Test.  Self-assessment	<b>H/W Club</b> <b>STEM Club</b>
	Week 2	LO 1.2 The design cycle: optimise and validation phases (R106 LO3) (R108 LO3 & LO4)	ILT – 1.3	S/A Starter Written feedback for Design cycle – written answer	<b>H/W Club</b> <b>STEM Club</b>
	Week 3	LO 1.3 Manufacturing considerations: materials and supply (R108 LO1)	ILT – 2.1	S/A Starter	<b>H/W Club</b> <b>STEM Club</b>
	Week 4	<i>LO2: Understand the requirements of design specifications for the development of a new product</i> LO 2.1 Design specifications (R107 LO1)	ILT – 2.2	S/A Starter Low stakes knowledge assessment LO1	<b>H/W Club</b> <b>STEM Club</b>

	Week 5	LO 2. 2 Product requirements (R107 LO1)	ILT – 2.3	S/A Starter	H/W Club STEM Club
	Week 6	LO 2.3 Manufacturing considerations: materials and supply. LO 2.4 Manufacturing considerations: ease of manufacture	ILT – Revision for Knowledge Assessment	S/A Starter Written feedback given for Design specification	H/W Club STEM Club
	Week 7	LO 2.5 Manufacturing considerations: scale, reliability, safety and Sustainability (R106 LO1) (R107 LO1) (R108 LO1 & LO2)	ILT – 2.7	S/A Starter Knowledge Test paper 1 - LO1&2.1 - 2.4 focus	H/W Club STEM Club
	Week 8	LO 2.6 Production costs LO 2.7 Regulations and Safeguards (R106 LO1 & LO3) (R108 LO2)	ILT – LO 3.1	S/A Starter P/A sorting activity	H/W Club STEM Club
<b>Half term</b>					
Autumn 2	Week 9	LO 3: Know about the wider influences on the design of new products LO 3.1 Market forces LO 3.2 Legislation and Design (R106 LO1)	ILT –LO 3.2	S/A Starter P/A through discussion S/A exam question.	H/W Club STEM Club

Week 10	LO 3.3 Inspirational design and new materials Technology (R106 LO1) LO 3.4 Life Cycle Analysis (R106 LO1)	ILT – 3.3	S/A Starter P/A material understanding Task Written feedback given for long exam question	H/W Club STEM Club	
Week 11	LO 3.5 Environmental Pressures (R107 LO1)	ILT – 3.4	S/A Starter P/A Design task	H/W Club STEM Club	
Week 12	LO 3.5 Environmental Pressures (R107 LO1)	ILT – 3.5	S/A Starter S/A Design Outcomes. Written feedback given for LCA.	H/W Club STEM Club	
Week 13	Introduce Unit R106 <i>LO1: Know how commercial production methods, quality and legislation impact on the design of products and components</i> LO 1.1 Commercial production methods (R105 LO2)	ILT – Revision	S/A Starter	H/W Club STEM Club	
Week 14	LO 1.2 Manufacturing processes and design (R105 LO2)	ILT – Revision	Knowledge Test 2 S/A Starter P/A Investigation outcomes.	H/W Club STEM Club	
Week 15	LO 1.3 End of life considerations (R105 LO3)	ILT – R106 case study ILT – Synoptic links R105 LO1.3	Past Exam Paper Assessment	H/W Club STEM Club	

		LO 1.4 Product conformity (R105 LO3)			
<b>Christmas Holiday</b>					
<b>UNIT R106 - PRODUCT ANALYSIS AND RESEARCH</b>					
<b>Spring 1</b>	Week 16	LO2: Be able to research existing products LO 2.1 Research methods for product analysis (R105 LO3)	ILT – Synoptic links R105 LO 3.4	S/A Starter	<b>H/W Club STEM Club</b>
	Week 17	LO 2.2 Analysing existing products (R105 LO2)	ILT – Synoptic links R105 LO 2.7	S/A Starter Written feedback – R106 mock scenario	<b>H/W Club STEM Club</b>
	Week 18	LO3: Be able to analyse an existing product through disassembly LO 3.1 Disassembly methods and procedures (R105 LO2) (R107 LO1)	ILT – Primary & secondary research task	S/A Starter P/A investigations.	<b>H/W Club STEM Club</b>
	Week 19	LO 3.2 Safe product disassembly (R108 LO1 & LO2)	ILT – Existing product analysis	S/A Starter  Knowledge Test 3 Written feedback – R106 mock scenario	<b>H/W Club STEM Club</b>
	Week 20	LO 3.3 Analysing products through disassembly (R105 LO1 & LO2 & LO3) (R108 LO1 & LO2)	ILT – Synoptic links R105 LO 2.4	S/A Starter	<b>H/W Club STEM Club</b>

	Week 21	ASSESSED TIME R106 (12 hours total)	ILT – TARGETED REVISION	S/A Starter Written feedback – R106 mock scenario	H/W Club STEM Club
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Spring 2	Week 22	ASSESSED TIME R106 (12 hours total)	ILT – TARGETED REVISION	S/A Starter <b>JUNE SERIES ENTRY R106</b>	H/W Club STEM Club
	Week 23	ASSESSED TIME R106 (12 hours total)	ILT – TARGETED REVISION	S/A Starter <b>JUNE SERIES ENTRY R106</b>	H/W Club STEM Club
	Week 24	ASSESSED TIME R106 (12 hours total)	ILT – TARGETED REVISION	S/A Starter <b>JUNE SERIES ENTRY R106</b>	H/W Club STEM Club
	Week 25	ASSESSED TIME R106 (12 hours total)	ILT – TARGETED REVISION	Knowledge test 4 <b>JUNE SERIES ENTRY R106</b>	H/W Club STEM Club
	Week 26	UNIT R107 - DEVELOPING AND PRESENTING ENGINEERING DESIGNS <i>LO1: Be able to generate design proposals using a range of techniques</i> LO 1.1 Hand drawing techniques: freehand sketching	ILT – TARGETED REVISION	S/A Starter <b>JUNE SERIES ENTRY R106</b>	H/W Club STEM Club
	Week 27	Revision R105	ILT – TARGETED REVISION	S/A Starter	H/W Club STEM Club
EASTER <b>JUNE SERIES ENTRY R105 &amp; R106</b>					
Summer 1	Week 28	Revision R105	ILT – TARGETED REVISION		H/W Club STEM Club

	Week 29	LO 1.2 Rendering LO 1.3 Annotation and labelling	ILT – TARGETED REVISION/ LO 1 mock scenario	S/A Starter	H/W Club STEM Club
	Week 30	LO2: Know how to develop designs using engineering drawing techniques and annotation LO 2.1 2D engineering drawings	ILT – LO 1 mock scenario	S/A Starter Written feedback given for long exam question	H/W Club STEM Club
	Week 31	LO 2.2 3D engineering drawing	ILT – LO 2 mock scenario	S/A Starter <b>JUNE SERIES ENTRY R105</b>	H/W Club STEM Club
	Week 32	LO 1.4 Using ICT software	ILT – LO 2 mock scenario		H/W Club STEM Club
	Week 33	LO3: Be able to use Computer Aided Design (CAD) software and techniques to produce and communicate design proposals LO 3.1 CAD applications	ILT – LO 2 mock scenario	Feedback provided for current progress against Unit recoding criteria – R107 mock scenario	H/W Club STEM Club
<b>Half Term</b>					
Summer 2	Week 34	LO 3.1 CAD applications (R106 LO2) (R108 LO3) LO 3.2 Communicating design proposals (R106 LO2) (R108 LO3)	ILT – LO 3 mock scenario	S/A against grading criteria	H/W Club STEM Club

Week 35	ASSESSED TIME R107 (12 hours total)	ILT – Practise hand drawing skills	Feedback provided for current progress against Unit recoding criteria – R107 mock scenario <b>R107 NOV SERIES SUBMISSION</b>	H/W Club STEM Club
Week 36	ASSESSED TIME R107 (12 hours total)	ILT – Practise rendering skills	<b>R107 NOV SERIES SUBMISSION</b>	H/W Club STEM Club
Week 37	ASSESSED TIME R107 (12 hours total)	ILT – Practise annotation skills	<b>R107 NOV SERIES SUBMISSION</b>	H/W Club STEM Club
Week 38	ASSESSED TIME R107 (12 hours total)	ILT – Practise CAD skills	<b>R107 NOV SERIES SUBMISSION</b>	H/W Club STEM Club
Week 39	ASSESSED TIME R107 (12 hours total)	ILT – Practise CAD skills	<b>R107 NOV SERIES SUBMISSION</b>	H/W Club STEM Club
Week 40	ASSESSED TIME R107 (12 hours total)		<b>R107 NOV SERIES SUBMISSION</b>	H/W Club STEM Club