KS5 BTEC Engineering Curriculum Intent Summary

COURSE:	LEVEL 3 BTEC EXTENDED DIPLOMA in ENGINEERING	THE END POINT FOR THE EXTENDED DIPLOMA IN ENGINEERING
DETAILS:	Two Year Course 15 Units 3 x External Examinations 7 x Mandatory	A high-quality Engineering Qualification The knowledge and skills to enable students to achieve a higher apprenticeship placement or university degree course A confidence to use their learnt skills and development of knowledge in the engineering field to address future changes and needs within their chosen field and beyond. To enable them to apply their understanding and skills to new experiences
INDUSTRY SKILLS	Creative Problem Solving Communication Teamwork Practical Solutions Decision Making Collaboration Initiative	

HOW ENGINEERING IS BEING DEVELOPED, TAUGHT AND ASSESSED	
	Curriculum The curriculum design focuses on delivering a wide range of units that are delivered to the students by specialist teachers, including Engineering Maths, Electronics, Mechanical Engineering, CAD/CAM. The delivery and assessment schedule is a two-year programme including assessment windows and examination dates. This is planned in the summer term prior to course start.
	Problem Based Learning The course is designed using an integrated engineering programme to deliver the content of the units through problem-based assignments. The content and knowledge are delivered with contextualised briefs that enable the students to match to real life experiences. Extra curricula projects are delivered that enhance their ability to apply the skills to different situations, to consolidate their learning and give additional learning opportunities to support their assignments.
	Links with Industry Partners The links with industry are being continuously developed to incorporate real world challenges into the curriculum projects but also to use the links to increase the contact of our students with organisations and opportunities to work throughout their course with the wider range of stakeholders that they need to be aware of and to help the students to make decisions of the path they wish to take in the next stages of their education.
	Starting Points Students who arrive at Elutec for KS5 have all had varied experiences. In regard to their education, consideration is made in the planning and support for all the students. The programme is designed to complete initial baseline work to enable the students to showcase the skills they have so we are able to focus on consolidating these and teaching them the skills they have not experienced to ensure that the students are able to fully access their level 3 course.
	Specification Pearson BTEC Level 3 National Extended Diploma in Engineering UHA94 RQF 1080 GLH 601/7588/6

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COURSE CONTENT FOR TWO YEAR PROGRAMME

Mandatory Units

Unit	Unit Title	Assessment	GLH	Year
1	Engineering Principles	External	120	1
2	Delivery of Engineering Processes Safely as a Team	Internal	60	1
3	Engineering Product Design and Manufacture	External	120	1
4	Applied Commercial and Quality Principles in Engineering	Internal	60	2
5	A Specialist Engineering Project	Internal	60	2
6	Microcontroller Systems for Engineers	External	120	2
7	Calculus to Solve Engineering Problems	Internal	60	2

Additional Units

Unit	Unit Title		GLH	Year
8	Further Engineering Maths	Internal	60	2
10	Computer Aided Design in Engineering	Internal	60	1
19	Electronics Devices and Circuits	Internal	60	2
22	Electronic Printed Circuit Board Design and Manufacture	Internal	60	1
24	Maintenance of Mechanical Systems	Internal	60	2
25	Behaviour of Metallic Materials	Internal	60	1
41	Manufacturing Secondary Machining Processes	Internal	60	1
45	Additive Manufacture – 3D Printing	Internal	60	1

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Academic Year 2024 2025

Pearson BTEC Level 3 National Extended Diploma in Engineering (RQF)

Unit	Title	Teacher	Term	
1	Engineering Principles	TKE/RDA	1,2,3,4,5	
2	Delivery of Engineering Processes Safely as a Team	TMU	1,2	
3	Engineering Product Design and Manufacture	DAB	1,2,3,4	
4	Applied Commercial and Quality Principles in Engineering	TMU	7,8	
5	A Specialist Engineering Project	DAB	7,8,9,10	
6	Microcontroller Systems for Engineers	KMU	7,8,9,10,11	
7	Calculus to Solve Engineering Problems	TKE/BAH	6,7,8	
8	Further Engineering Maths	TKE/BAH	9,10,11	
10	Computer Aided Design in Engineering	TMU	3,4	
19	Electronics Devices and Circuits	KMU	4,5,6	
22	Electronic Printed Circuit Board Design and Manufacture	KMU	1,2,3	
24	Maintenance of Mechanical Systems	TMU	5,6	
25	Behaviour of Metallic Materials	RAM	1,2 (Yr. 12) 5,6 (Yr. 13)	
41	Manufacturing Secondary Machining Processes	TMU	9,10	
45	Additive Manufacture – 3D Printing	DBA	5,6	

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Academic Year 2024 2025

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Term	Start Date	End Date
Year 1	YEAR 12	
1	12 September 2024	24 October 2024
2	11 November 2024	20 December 2024
3	6 January 2025	14 February 2025
4	24 February 2025	4 April 2025
5	22 April 2025	23 May 2025
6	2 June 2025	18 July 2025
Year 2	YEAR 13	
7	12 September 2024	24 October 2024
8	11 November 2024	20 December 2024
9	6 January 2025	14 February 2025
10	24 February 2025	4 April 2025
11	22 April 2025	23 May 2025