Curriculum 2025/26

Engineering KS4

Curriculum intent:

- To provide high quality education through a semester-based learning model, embedding core values, which allow the students to receive both the knowledge and competency in a range of core and enriching engineering units.
- All units taught by engineering specialists to ensure learners are taught to the current specifications from the Cambridge National and standards and methods used in Industry.
- Teach Engineering Manufacture pathway to include manufacturing a one-off product, products in quantity and the principles that underpin them, or follow a systems path. Skills could include hand fitting with machining and CAD through to electronics and programming, to ensure learners complete KS4 as young 'engineers' with an enthusiasm for the subjects and develop core values which prepare them for the next stage of their lives.
- Teach units and work to embed industry partners to enrich the scheme of work, providing meaningful experiences that gives the students a sense of the 'why' behind their practice.

Employer engagement:

- Developing units for around employers including:

Engineering Manufacture

  - **R014** - Principles of engineering manufacture

Values:

- Pride – Demonstrate pride in both the quality of their work and for the UTC when representing at competitions, external visits and open days.

o **R015** - Manufacturing a One-off Product Longthorn - To embed principles of hand craft o **R016** - Manufacturing in quantity – Aston Martin, Cosworth, Cummins. **Systems** **R047** - Principles of electronic and programmable systems – Omron o **R048** – Making and testing electronic circuits – Leonardo o **R049** -developing programmable systems – SMC/Cummings • Past apprentices/KS5 students to come in to support learners with their skills. • Develop more external trips on a regular basis to motivate and inspire students. • Improve attendance from external companies to promote apprenticeships and assist in project led sessions.	• Determination – Encourage and inspire students to work to the best of their ability and to push for the highest grades in both Knowledge and Practical tests. • Kindness in supporting and mentoring each other and younger students from year 12 through to year 10 in there engineering lessons. • Integrity – Showing integrity when working on their practical assessments and employer led activities.
Passport skills: • Speaking – when delivering presentations to our employer partners or communicating with our students.	SMSC and British values

• Listening – responding to questions and answering in a thoughtful and sensitive manner. • Aiming high – using feedback to develop work to the best of our ability. Aiming high to provide the best quality solutions through our employer-led projects.	Democracy – Making engineering education more widely available to access for students of all backgrounds. Promoting diversity, equity, and inclusion within engineering. The rule of law – laws are identified. Employment rights, the Equality Act, as well as Health and Safety legislation. Individual liberty – Giving students the ability to make independent decisions, express creativity, and innovate. Mutual respect – Ensuring students are respecting each other's opinions and perspectives to better communication and collaboration. Tolerance for other faiths and beliefs - We discuss the Ethical considerations of what society believes to be morally right, in manufacture, testing, looking into Carbon footprints, fair trade, animal testing and the utilising of cheap labour in other countries.