Design Engineering

Curriculum Intent:
To demonstrate their knowledge, understanding and skills through interrelated iterative processes that 'explore' needs, 'create' solutions and 'evaluate' how well the needs have been met.

Year 12	Year 13
Core knowledge: 1. Identifying requirements 2. Learning from existing products and practice 3. Implications of wider issues 4. Design thinking and communication 5. Material considerations 6. Technical understanding 7. Manufacturing processes and techniques 8. Viability of design solutions 9. Health and safety. **Procedural knowledge (how to...):** Core knowledge is delivered through students completing booklets for one lesson per week. Extensive theory and focussed practical tasks within the areas of Electronic Engineering, Software Development, Mechanical Engineering and Pneumatics. We also cover Structural Engineering and smart and modern technologies. Electronic Engineering unit covering technical understanding, focussed practical tasks and a design and make project. Mechanical Engineering unit covering technical understanding, focussed practical tasks and a design and make project. **Assessment:** Verbal and informal formative feedback Weekly quizzes on core content Summative levels for each project Assessed and graded exams at assessment weeks. **Homework:** Additional mastery of the specialism concepts. Later on, NEA work each week. **Links to careers and personal development include:** Level 3, 4 , 5 or 6 (degree) apprenticeships, depending on attainment at A-Level, Engineering or other technical degrees and careers.	**NEA:** Non examined assessment (coursework) is the main focus of year 13. This is split into weekly chunks and involves researching, designing, trialling, making and evaluating a prototype product or system. **Procedural knowledge (how to…):** Completing a NEA (coursework) project from June 1st Y12 until March Y13 A thorough exam preparation course between March and summer of Y11 including past paper questions, exam techniques and revision. **Assessment:** Weekly assessment of NEA (not shared with students) Assessed and graded exams at assessment weeks. Assessed past paper questions. **Homework:** NEA work each week. Revision **Links to careers and personal development include:** Degrees in Engineering or technical subjects. Level 3,4,5 or 6 apprenticeships. Degrees in Engineering or other technical areas.