

Year

11

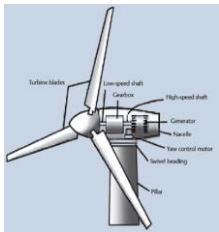
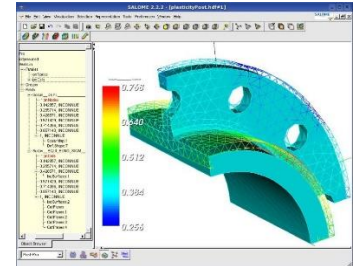
What will I be studying in Year 11?

During the course of your second year with us at the Energy Coast UTC, you will study various subjects, details of which can be found below. If you have any questions about any aspect of your courses, please speak to your subject teacher or your Form Tutor.



Engineering

In Engineering this year, you will be preparing to sit the online exam for Unit 1: "The Engineered World." This unit will include such elements as identifying the different engineering sectors and developing your understanding of different elements of production and manufacture. You will then go on to look at CAD/CAM and modern production practices and the environmental impact of engineering including green energy, developing your understanding of 3D printing, laser cutting and using CAD programs such as Cura and Fusion 360.



During the Spring term of Year 11, you will continue to consolidate your knowledge of "The Engineered World." You will be independently developing a bearing housing and turbine to make a simple wind turbine using Fusion 360 and then realising your designs using the 3D printers. These designs will then be tested for efficiency and accuracy of manufacture. You will also be focusing on revising and developing your knowledge for the Unit 1 external assessed, online exam.

Finally, in the Summer term you will be completing Unit 2 "Investigating an Engineered Product". You will assemble and disassemble a typical engineering tool (DTI and magnetic stand) and suggest alternative means of manufacture, why certain materials are used and the fitness for purpose of the product.



Throughout the year, you will be assessed in Engineering in a variety of ways including accuracy to specification and assessment of key skills. At the end of the Spring term you will have sat and received a grade for Unit 1 which is externally moderated by BTEC. Any student who fails to complete any of the above units at Level 1 or above will not be able to achieve a grade at the end of the two-year course. It is therefore imperative that all unit deadlines are met and that your work is submitted on time.

Engineering – Workshop Sessions

During your practical Engineering sessions in our workshops you will cover a range of skills to complete a lamp project. This will cover a range of hand skills, fabrication, manufacturing, electrical and CAD/CAM design. You will also complete a range of units in tutor time to compliment these activities for a further qualification.



Digital Engineering

(DEC! – Design Engineer Construct)

In DEC! this year, you will start by studying “Defining a Sustainable Construction Project” which will include such elements as identifying the contextual needs of the client, recording project requirements and client expectations and establishing a budget in relation to the agreed clients’ needs. You will then go on to look at formulation of project briefs, developing your understanding of outlining the functional requirements of the project and establishing quality objectives.



During the Spring term of Year 11, you will investigate “An Understanding of the Constraints of the Project” and “Developing the Ability to Draft Feasible and Realistic Plans” during which you will deepen your awareness of testing ideas against planning protocol, carrying out a feasibility study and create a draft project plans, to name just a few.

Finally, in the Summer term, you will explore “How to Develop a Sustainable Construction Project” and “Producing Technical Support Collateral for the Project”. You will be given opportunities to learn about various aspects of DEC! such as communicating the concept design to the project team, using the 3D environment to test the design in virtual locations and explaining the environmental and climate change reduction strategies.



Throughout the year, you will be assessed in DEC! in a variety of ways including tracking progress during lessons, verbal feedback, specific written feedback for you to respond to and submission of work to external moderators for confirmation that assessment criteria have been met. The year will end with a formal written mock exam in June which will be your chance to prove how much you know, understand and can evaluate your DEC! subject knowledge gained during the course so far.

Combined Science

In science this year you will explore a range of topics related to Life Sciences and Physical Sciences.



Autumn term study: atoms, elements and compounds. This will enable you to develop fundamental skills when decoding the periodic table. Focusing on the biology aspect of the course you will learn how to classify and identify eukaryotic and prokaryotic cells to further our understanding of gene and cell manipulation.



In the Spring term you will focus heavily upon acids and bases, making salts and endothermic and exothermic reactions. You will also apply cross curricular links with engineering when resolving a parallelogram of forces and resultant forces.

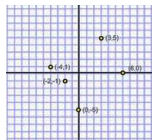
Finally, in the Summer term you will explore magnetic fields and magnetic field manipulation, and electromagnetism. You will also have the opportunity to use our new free fall experiment kit as well learning about the nuclear industry through alpha, beta and gamma radiation. You will engage in a minimum of 18 required practical, spanning all three major science disciplines: biology, chemistry and physics.



Throughout the year, you will be assessed in science in a variety of ways including exam style questions and practical experiments. The year will end with formal written mock exams in June which will be your chance to prove how much you know, understand and can evaluate your science course so far.

Maths (Foundation Tier)

In Maths this year, you will start by studying probability, ratio, percentages and proportion which will include elements such as finding value for money and calculating compound interest. You will then go on to looking at area and volume of shapes enabling you to see how measure is used in real life scenarios.



During the Spring term of Year 11, you will investigate simultaneous equations, indices, straight line graphs and factors which will deepen your awareness of graphical manipulation, calculator skills, geometrical understanding and problem solving.

Finally, in the Summer term, you will be revisiting topics in order to make sure that you're confident with all areas prior to your GCSE exams.

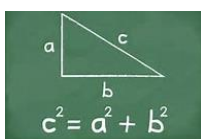
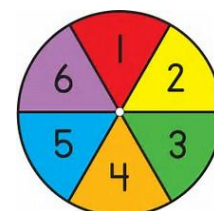
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Throughout the year, you will be assessed in Foundation Maths in a variety of ways including completing multiple past papers. The year will end with formal written GCSE exams in June which will be your last chance to prove how much you know, understand and can evaluate your Foundation Maths course.

Maths (Higher Tier)

In Maths this year, you will start by studying ratio and proportion, solving quadratics, trigonometry and probability which will include elements such as geometrical interpretation, problem solving and algebraic manipulation. You will then go on to look at circle theorems and transformations.



During the Spring term of year 11, you will investigate surds, indices, simultaneous equations, vectors and surds, deepening your awareness of geometrical understanding, graphical manipulation and problem solving.

Finally, in the Summer term, you will be revisiting topics in order to make sure that you're confident with all areas prior to your GCSE exam.

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Throughout the year, you will be assessed in Higher Maths in a variety of ways including completing multiple past papers. The year will end with formal written GCSE exams in June which will be your last chance to prove how much you know, understand and can evaluate your Higher Maths course.

English Language

In English Language this year, you will start by studying writing skills, using and adapting language to suit text-type, audience and purpose in preparation for your fictional and transactional writing GCSE exam. You will then go on to look at '19th Century fiction extracts' by identifying, interpreting and synthesising evidence.



During the Spring term of Year 11, you will begin to analyse and compare a range of 20th/21st century non-fiction texts where you will be required to compare different texts by focusing on the writer's ideas and perspectives. You will then go on to look at fictional writing skills where you will deepen your understanding of how to communicate clearly and effectively by adapting tone/register for the audience and purpose.

Finally, in the Summer term, you will be revising for your English Language Paper 1 and English Language Paper 2 exams. You will then take a mock exam prior to your GCSE exams in order to practise your exam technique.



Throughout the year, you will be assessed in English Language in a variety of ways including mock exams and exam style questions. The year will end with formal written GCSE exams in June which will be your last chance to prove how much you know, understand and can evaluate your English Language course.

English Literature

In English Literature this year, you will start by studying "Macbeth", where you will explain and analyse how writers use language and structure to achieve effects or to influence the reader. You will then go on to study Shakespeare's "An Inspector Calls".



During the Spring term of Year 11, you will investigate "An Inspector Calls", "Macbeth", "A Christmas Carol", "Conflict Poetry" and "Unseen Poetry Comparison", developing your ability to compare texts with reference to language, form, structure and context.

Finally, in the Summer term, you will be revising for your English Literature Paper 1 and English Literature Paper 2 exams. You will then take a mock exam prior to your GCSE exams in order to practise your exam technique.



Throughout the year, you will be assessed in English Literature in a variety of ways including mock exams and exam style questions. The year will end with formal written GCSE exams in June which will be your last chance to prove how much you know, understand and can evaluate your English Literature course.

BTEC Sport

In BTEC Sport this year, you will start by studying “Fitness for Sport and Exercise” which will include elements such as components of fitness, the principles of training and skill related fitness. In the second half of the Autumn term, you will then continue to look at “Fitness for Sport and Exercise” where you’ll develop your understanding of how to investigate fitness testing to determine fitness levels and fitness test methods.



During the Spring term of Year 11, you will investigate practical sports performance, during which you will deepen your awareness of understanding the rules, regulations and scoring systems for selected sports, the roles of officials and how to demonstrate skills, techniques and tactics in selected sports.

Finally, in the Summer term, you will continue to explore ‘practical sports performance. You will be given opportunities to learn about various aspects of sport such as reviewing sports performance, learning about the tactical demands of sports and self-analysis.



Throughout the year, you will be assessed in a variety of ways including multiple choice tests, presentations and practical demonstrations. The year will end with a formal written mock exam in June which will be your chance to prove how much you know, understand and can evaluate your BTEC Sports course so far.

Geography

In Geography this year, you will start by exploring “People of the Planet”. You will be given opportunities to learn about various aspects of the population of our planet such as global development, uneven development and rapid urbanisation. You will then investigate “Environmental Threats to Our Planet”, exploring the causes and consequences of climate change and extreme weather patterns such as tropical storms and droughts.



During the Spring term of Year 11, you will review your learning and successes from Year 10 and then move on to completing both pieces of fieldwork. Successful completion of these two key pieces of work will be guided by your teachers but involves a lot of private study and investigation which you will need to present neatly, thoroughly and with a clear analytical conclusion at the end. Finally, in the Summer term, you will spend your time revising and sitting regular mock exams so that you are fully prepared for your Geography GCSE exams.

Throughout the year, you will be assessed in Geography in a variety of ways including fieldwork (COVID restrictions allowing), coursework, homework, written tests, creative individual presentations, group work, mini-assessments and quizzes. The year will end with three GCSE written exams which will be your last chance to prove how much you know, understand and can evaluate your Geography GCSE course.



History

In History this year, you will start by completing your investigations into Elizabethan England during which you will deepen your awareness of the challenges to Elizabeth's throne from home and abroad, the war with Spain and changing attitudes towards education and poverty, to name just a few.



During the Autumn and Spring terms, you will look in depth at Hitler's rise to power and the effects that the Weimar republic had on Germany and its designs to conquer Europe whilst trying to destroy entire races of people and certain religious beliefs.

Finally, in the Spring/Summer term, you will explore the development of medicine in Britain with a specific in-depth focus on the treatment of injuries in the trenches of the First World War. You will be given opportunities to learn about various aspects of the development of medicine over time such as supernatural versus scientific explanations of the causes of disease, how hospital care changed and the evolving approach to preventative medicine, i.e. vaccinations.



Throughout the year, you will be assessed in History in a variety of ways including homework, written tests, creative individual presentations, group work, mini-assessments and quizzes. The year will end with 3 separate exams which will be your chance to prove how much you know, understand and can evaluate your entire History course so far.

Computer Science

In Computer Science this year, you will start by studying 'Problem Solving, Models, Hardware and Software', which will include elements such as learning how to use pseudocode and using decomposition to design a solution. You will then go on to look at programming which will develop your understanding of flowcharts and Boolean operators.



During the Spring term, you will investigate networks and logic, where you will deepen your awareness of LANs and WANs, the environmental impact of technology and data representation.

Finally, in the Summer term, you will explore network security and graphics. You will be given opportunities to learn about various aspects of Computer Science such as data representation, subprograms and network topologies.



Throughout the year, you will be assessed in Computer Science in a variety of ways including presentations, multiple choice tests and practicals. The year will end with a formal written mock exam in June which will be your chance to prove how much you know, understand and can evaluate your Computer Science course so far.

Business Studies

In Business this year, you will continue to work on the project covered in Year 10, and focus on the marketing of the product. You will develop a marketing strategy and investigate how successful brands approach this. You will investigate branding, where you will apply these principles to your product. You will design your own strapline and logo to compliment your product and be attractive to your customer target.



During the Spring term you will be involved in developing a pitch, a Dragons Den style activity where you are selling your product to a group of investors. You will focus on the skills required to develop excellent communication and develop your confidence presenting your ideas.



There are two assessments in this year – an exam of the main marketing concepts in January, and a formal written assessment that accompanies the branding, pitching of the product and a final evaluation of the project as a whole will complete this.

PE (Core)

In PE this year, you will start by focusing on basketball and netball which will develop your ball familiarisation skills, shooting and positioning. You will then go on to look at rugby and table tennis.



During the Spring term of Year 11, you will take part in dodgeball and rounders where you will work on your positioning, striking and timing. You will then move onto fitness where you'll learn about the components of fitness and basic fitness techniques.

Finally, in the Summer term, you will explore the rules and skills of softball. You will be given opportunities to learn about various aspects of Core PE such as gameplay, sportsmanship, analysis of performance and formations.



Throughout the year, you will be assessed in PE based on our “Hands, Heart and Head” criteria which will be explained as the year progresses. There will be no formal written assessments in Core PE.