


ENGINEERING SCIENCE

Engineering Science is a classroom based course with both practical and theoretical aspects. Learners will investigate the role of engineers in industry, control systems including electrical and electronic circuits and programmable microcontrollers, and mechanical systems including mechanical and pneumatic components. They will be able to build circuits as well as writing programs and simulating mechanical systems. They will also be expected to use the knowledge gained to solve challenging problems which will include the use of mathematical formulae so **good numeracy skills are essential**.

| NATIONAL 4/5 ENGINEERING SCIENCE | |
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| REQUIREMENTS | You must have completed Engineering Science in S3, or alternatively have completed Physics in S3. We also strongly recommend that you are studying towards your National 5 Maths, as there is a significant amount of Maths involved in this course. If you do not have these subjects from S3, you must seek permission from the Faculty PT. |
| COURSE CONTENT | <p>The course has 3 units:</p> <ol style="list-style-type: none"> 1. <i>Contexts and Challenges</i> 2. <i>Structures and Mechanisms</i> 3. <i>Electronics</i>  <p>For further information on what's included, please the link below: http://www.sqa.org.uk/files_ccc/N5CAS_EngScience.pdf</p> |
| ASSESSMENT | <p>Work is assessed by end of unit assessments including problem solving projects. At National 4 learners will complete an Added Value project to demonstrate their skills whilst at National 5 learners will also sit an exam to assess knowledge and understanding.</p> <p>National 4 – The Added Value Unit (AVU) is marked as Pass/Fail, and you must pass this to get a National 4 award on your SQA certificate. The National 5 Assessment arrangements have recently changed and can be found at www.sqa.org.uk</p> |
| PROGRESSION / NEXT STEPS | <p>This course is offered at Higher. To proceed to Higher you must gain either an A or B at National 5. Engineering Science is designed to give an overview of the main branches of engineering and is perfect for those interested possible careers as: Automotive Engineer, Civil Engineer, Electrical Engineer. See link for more careers information: National Engineering Science Careers</p> |

| HIGHER ENGINEERING SCIENCE | |
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| REQUIREMENTS | <p>You must have completed Engineering Science at National 5, and have achieved an A or B. You must also have a National 5 Maths award, and preferably be studying towards your Higher Maths too.</p> <p>If you do not have these subjects at the required level, you must seek permission from the Faculty PT.</p> |
| COURSE CONTENT | <p>The course has 3 units:</p> <ol style="list-style-type: none"> 1. <i>Contexts and Challenges</i> 2. <i>Structures and Mechanisms</i> 3. <i>Electronics</i> <p>For further information on what's included, please the link below: http://www.sqa.org.uk/files_ccc/HCAS_EngScience.pdf</p> |
| ASSESSMENT | <p>Work is assessed by end of unit assessments including problem solving projects.</p> <p>Your course award will depend on passing each of the units, and completing both a Question Paper and Assignment. Further information can be found at www.sqa.org.uk</p> |
| PROGRESSION / NEXT STEPS | <p>Engineering Science is designed to give an overview of the main branches of engineering.</p> <p>Following completion of an industry recognised apprenticeship such as OGTAP or a company specific training program pupils could progress to roles such as Offshore Engineering technician, Aircraft Mechanic or Engineer, Automotive Engineer, CNC Machinist, , Lighting Technician, Offshore Service Technician, Plant Fitter or Sound Technician.</p> <p>Following completion of an appropriate degree qualification pupils could progress to roles such as Electrical Engineer, Civil Engineer, Mechanical Engineer, Structural Engineer, Marine Engineer, Aeronautical Engineer or Petroleum Engineer.</p> <p>See this link for further information: Higher Engineering Science Careers</p> <p>This course is not currently offered at Advanced Higher Level, but may allow you into a HNC/HND Mechanical Engineering Course at College or similar.</p> |