# Prospectus 2017/18

Elutec
Academy of Design and Engineering



**Think big • Start small • Grow fast**

# Contents

# A year at Elutec...





# Principal's welcome

I have great pleasure in introducing you to our 2017/18 prospectus. Elutec offers an incredibly exciting educational experience to young people aged 14-19 in east London and Essex who are interested in engineering, design and technology, sciences and maths.

At Elutec our focus is on educating and preparing young people for work, whether that is at 16, 18 or 21. Our curriculum is designed in collaboration with industrial partners and sponsors and this enables us to deliver the skills and qualifications that are required by industry and top universities. Our first cohort of students have gone on to some impressive destinations including Jaguar Land Rover, TfL and National Grid for higher and advanced apprenticeships and Loughborough University to study full time for a BEng.

Located on a working campus at londoneast-uk in Dagenham, our students quickly mature because they are interacting with employers on a day-to-day basis thus developing employability as well as academic and technical skills.

We are very privileged at Elutec to have four world-class sponsors. Ford Motor Company, the multi-national and innovative car manufacturer. University College London (UCL) one of the leading universities in the world for science and engineering. CEME (The Centre for Engineering and Manufacturing Excellence), the spectacular research, skills and business campus and Procat who have wide and successful experience of delivering technical education in Essex. All of our sponsors have worked tirelessly with us to realise our dream of creating an innovative, inspirational school which will support, stretch and challenge young people to being the very best they can be.

Please read on to find out more about our offer and come along to one of our events where you can meet our staff, students, sponsors and partners.

Mrs Umerah
**Principal**

# About us

Elutec is a state funded academy for **14-19 year olds** focused on providing both an academic and technical education that meets the needs of modern employers. A centre of innovation and excellence, it provides an unrivalled opportunity for young people who believe their future lies in the fields of engineering, design, science and technology.

We offer engineering courses and work-related learning, combined with broader academic studies in English, mathematics, ICT, a modern foreign language and sciences. Elutec will provide a solid foundation from which to build a successful career.

Elutec's specialisms are engineering and product design. Young people join us to study **GCSEs at age 14**, or to study **A levels and BTECs in year 12.**

Elutec delivers the very best education. On entering the building you immediately feel the energy; there is a vibrancy and buzz that matches the impressive surroundings. We have high aspirations for all our students and believe that we can develop young people who will have the capability to influence UK and international industry in the future.

Elutec prepares young people for the workplace and students mix with our partners and work on industry – standard machinery. This develops in them the skills that our partners tell us they want in their workforce.

UK engineering employers forecast over 1 million new UK engineering jobs by 2020. East London and the Thames Gateway have a significant number of engineering and manufacturing employers, old and new. There are literally thousands of fantastic employment opportunities to be expected in the coming decade. Our goal is to prepare Elutec students to make the most of these career opportunities.
Bill Williams, **CEO, CEME Ltd**

Our curriculum is delivered in conjunction with industrial partners like Ford, BP, National Grid, Network Rail and University College London (UCL), to ensure we offer the best possible progression routes into employment, apprenticeships and further/higher education. As partners they work closely with us to develop learning that takes place in a real world context. Students will undertake a number of visits to our partners' own premises and our partners employees visit Elutec to deliver sessions too.

Elutec is non-selective and caters for all students with a real passion for its curriculum along with an understanding of its challenges. Nothing is too much or too insignificant for our pastoral team. Every student is supported with day-to-day challenges and general well-being.

Elutec is all about you, the students, who play a vital role to the school, who contribute positively and contribute in decision making. Our focus is for every student to achieve their full potential.

Students with special educational needs are well provided for with an experienced special needs manager leading a team of learning support mentors.

Elutec admits 150 students into year 10 and 150 into year 12. We are taking applications now for both year groups for full time courses starting in September 2017.

"Ford Motor Company is proud to support Elutec. Our employees are trying to provide students with an opportunity to work on real engineering projects to give them a taste of what they will be faced with if they choose to enter the industry. Our engineers have been mentoring students, have monitored their progress through regular visits and have been on hand to answer any of their questions and support them whenever they have run into difficulties.

The UK will need more than a million new engineers and technicians in the next five years. As our partnership develops with Elutec, we hope to create more opportunities to encourage new talent into the industry."

Patrick Chandler, **Chassis Engineering Manager, Ford Motor Company Ltd**

Elutec is a unique school for the east London and Essex area. We work in partnership with UCL, one of the world's top universities and leading employers such as Ford to ensure that we deliver a curriculum for the 21st century that prepares young people for the workplace whether at 16, 18 or 21 by:

- Providing a curriculum that teaches the skills that industry has identified as in short supply
- Operating for longer hours to get students used to the hours of work in industry
- Providing compulsory extension activities to teach leadership and teamworking.

"In year 9, I had to choose my options, I realised that the subjects my school offered were non – STEM. That is when I discovered Elutec – the perfect choice for me. I was offered the opportunity to study triple engineering, sciences and German in year 10. I also liked the idea of starting school at 8.30 am and finishing at 4pm or 5pm, as I had extra time to dedicate to my studies and ask my mentor or teachers for support if I needed to. I am grateful that I can study A levels at Elutec. I am pleased to be studying level 3 courses: engineering, maths, physics and Russian language here. I am confident that the combination I am studying now will allow me to get into any Russell Group university of my choice. My dream is to study engineering at University College London (UCL).


Elutec attracted me as it was able to offer amazing facilities; other schools could not. In addition this school has very useful links with industry eg., Ford, National Grid, Network Rail and other companies which might be my future employers. At Elutec learning is fun, all teachers are brilliant. I am pleased that I joined Elutec at year 10."

Livia Kudina, **Year 12 student**

# Do you know?

Elutec opened in September 2014.

Elutec integrates technical, practical and academic learning and creates an environment where students can thrive and develop the abilities that industry needs.

**We offer:**

- A valuable academic and technical education
- Focus on one or two technical specialisms
- Operates a longer school day, from 8:30am - 5:00pm, two days a week, and 8:30am - 4:00pm three days a week, to more closely align with a normal business working day
- A governing body of employers and a leading university
- An essential academic education that relates to the technical specialisms
- The latest equipment and technology used by industry
- At least 40% of time to the technical specialism including employer-led projects, working in teams and problem solving.

**79%**

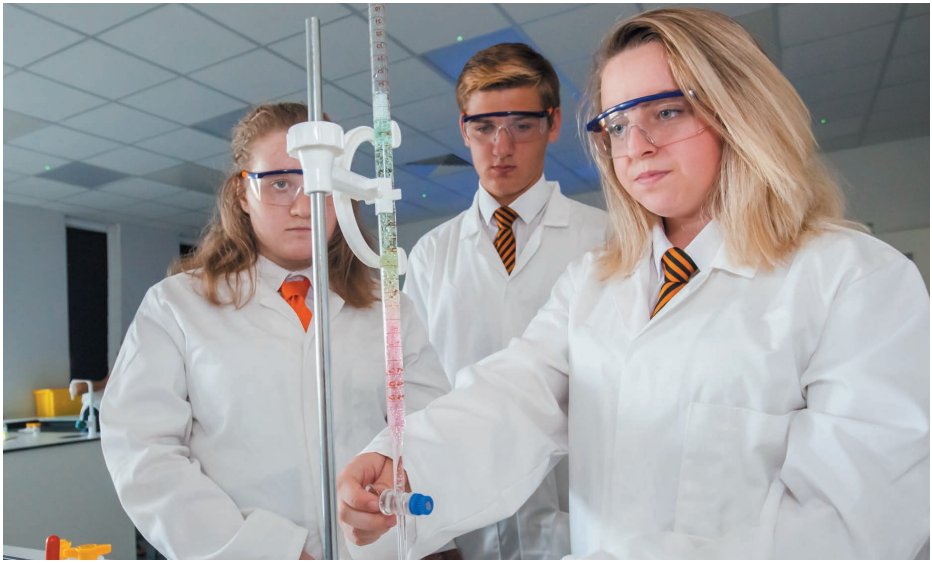
**Students are confident of getting a job suited to their skills when they have finished their studies.**

**92%**

**Our students said talks by employers were the most helpful source of information in planning their careers.**

"The relationships we have with our employer partners offers our students a unique opportunity to understand the purpose of everything they are learning. Students at Elutec come out with not only great qualifications, but also the sort of employability skills that take many people years to develop in the workplace. This means that Elutec students stand head and shoulders above other applicants when they apply for apprenticeships or higher education."

Mrs Umerah, **Principal**



# Vision

**Our purpose**
is to provide young people in east London and Essex an opportunity to become the next generation of talented engineers, technicians, scientists and designers through a positive education experience which equips them with the skills, knowledge and personal qualities they need to have a successful career.

**Our passion**
is to provide our students, staff and employer partners with a stimulating environment in which to learn, to educate and to connect.

**Our goal**
is to be the first choice for students, staff and employers with an interest in engineering, design, science and technology because of our partnerships, our results and our reputation.

**Our dream**
is that our students develop a strong sense of self belief, and that they are happy and successful.

# Values

**Positive attitude**
at Elutec we embrace enthusiasm, encourage and expect a can-do attitude. We strive to employ optimistic staff with a positive outlook who constantly nurture and develop a positive attitude in students, colleagues and partners of Elutec.

**A sense of urgency**
at Elutec we believe that every day counts and we instil a desire to use that day well to achieve our goals and ambitions. We will strive to develop this quality in our students in their approach to life. We recognise that at Elutec we only have our students for a year and a half before the real exam countdown begins. We will always strive to identify exactly where our students will benefit the most before they arrive and will make plans to meet their individual needs from day one.

**Innovation**
at Elutec we encourage and celebrate positive new ideas and suggestions at every opportunity. We want our staff to be brave enough to be innovative in the curriculum and its delivery. We will encourage our students to be creative, to think independently and have the confidence to think differently.

**Taking responsibility**
at Elutec we will develop a sense of accountability for our own decisions. In our staff and our students we will encourage ambition and constant improvement. We will support measured risk taking and coach individuals to accept that the outcomes of their actions are their responsibility.

# Progression pathways

Engineers, scientists, technologists and designers are modern day superheroes and as such, must be ready for anything in an increasingly technology - dependent world. Using maths, science, knowledge, creativity, curiosity, and ingenuity in practical ways, they design, invent, create and concoct the most remarkable physical achievements and significant advancements known to humanity. They are some of the most creative people on earth and make the stuff of our lives better, easier, more affordable, efficient and fun by solving everyday problems.

Almost everything you touch has been influenced or designed by an engineer or a scientist directly or indirectly. It is impossible to think of a major technical development that has not included the work of engineers. If you want to reduce pollution, end world hunger, improve the environment, invent exciting technology, become an astronaut, design racing cars, solve complex problems, or make a world of difference, then Elutec is the right choice for you.

## Building a foundation for success

We have developed a student support service which is designed to help students to start thinking about possible career paths by giving advice and guidance on a range of progression routes and further training within specific industries and careers.

By choosing a pathway that reflects the career area you are interested in, Elutec can provide students with tailored support that will help students stand out in their applications to university, apprenticeship or full time employment, whatever their career ambition.

## Progression opportunities

**Age 14 (school year 10)**

**Start** Elutec

**Study in years 10 & 11**

GCSEs and equivalent technical qualifications including English, engineering, maths, physics, chemistry, biology, ICT and German.

If you leave Elutec with Level 2 qualifications (GCSE) options:

Advanced Apprenticeships

Internships

Employment

You will be able to pursue a career in design, electrical engineering, manufacturing, mechanical engeneering, research and development, software development and many more fields.

**Age 16 (school year 11)**

**Start** or **stay** at Elutec (if you joined us in year 10)

**Study in years 12 & 13**

Students leaving Elutec with Level 3 qualifications (A Levels)

Leave Elutec with Level 3 qualifications (A Levels) options:

Higher Apprenticeships

Employment

University

Students who go into higher education after Elutec will have an opportunity to follow employment as scientists, engineers, designers or to follow higher studies to Master's degree in these sectors: chemical engineering, mechanical, electrical and electronic engineering, civil or aerospace engineering, telecommunications and motor vehicle engineering. Engineering graduates also follow careers in architecture, IT, banking, finance, commercial management, law, teaching, and marketing.

In fact, they are amongst the highest paid graduates, second only to medicine, dentistry and veterinary degrees.

# Key Stage 4

Students in years 10 and 11 complete a number of projects designed collaboratively between Elutec's industrial partners and the awarding body. In each project students will work in teams to solve real problems faced by industry. They will be supported through this challenging work by the partners and our teaching team and will present their findings to senior executives from the partner industries. The work that each individual student produces will meet the criteria for up to 3 GCSE qualifications in engineering design, systems and control in engineering and principles in engineering, and engineering business.

Students will also study core GCSEs in English language, English literature, maths, physics, chemistry, biology, ICT or computer studies. All students will follow a course in modern foreign languages and some will study for GCSE German.

In addition to the academic curriculum students will complete a series of technical skills which will be signed off in their technical skills log. These skills develop mechanical engineering with a wide range of equipment from hand tools through to lathes and mills. They also take part in two hours of physical education a week and one hour of careers education and PSHE (personal, social and health education).

Students will also undertake a week of work experience each year which will further develop their employment skills. All students complete the Passport to Employment which records their achievements and equates them to employability skills. The Passport to Employment is a crucial key to their success in the workplace.

## Providing support for students and parents

For some students, the move to a completely new school at age 14 may seem daunting, however, the Elutec team will support families through this transition. The learning opportunity we offer is completely unique to the region in terms of being able to provide specialist learning in engineering, science, technology and design for 14-19 year olds, with local employer and university involvement.

Students will be allocated to a company group of up to 50 other students and all of their learning will take place with that group.

Within each company, there will be a company chair and a technical learning mentor who will support the pastoral, learning and technical needs of all the students.

A student's company team will know them really well because they will be supporting across the whole curriculum, supervising the students at lunchtime and regularly having one-to-one meetings to discuss and resolve any barriers to well-being and achievement at school.

The company chair is an engineering teacher and he or she will work together with the students to compete against other companies for rewards, success in sports, and the best records for attendance and academic progress. Students will have a real pride in their company and will show loyalty to the company staff and students.

Students who are planning to work with some of the UK's most prestigious businesses need to dress appropriately. It is the expectation that this business ethos will surround all the work at Elutec. Our aim is to prepare young people to be the next generation of talented engineers and designers, through a really positive education experience which equips them with the skills, knowledge and personal qualities they need to have a successful career in industry. This includes knowing how to present themselves in a business environment both in the workshop and in the office.

Students in years 10 and 11 wear a black jacket with an embroidered Elutec logo, black trousers or a skirt, a long or short sleeved shirt and a clip-on tie in their company colour. For the workshop students wear an Elutec boiler suit and safety boots. PE kit will also be in their company colour. Uniform must be purchased from our supplier Fit Clothing and can be purchased online or by the visiting the supplier at school.


Elutec provides support to students on a level beyond what other schools have to offer. With day-to-day mentoring and communicating with parents Elutec provides the building blocks for success.
Mr Wright, **Technical Learning Mentor**

# Sixth Form

Most students in the sixth form will follow a level 3 programme where they will take 4 AS levels (or equivalent) in year 12 and then continue with 3 of them to A2 (or equivalent) in year 13. We also offer a level 2 programme for students who need to improve their GCSE (or equivalent) qualifications.

## Level 3

Students may choose to study for an engineering qualification which is worth 2 A levels. It will be taught around engineering challenges and Elutec's partners will be involved in developing and delivering the curriculum. This enables the students to work directly with potential employers, all of whom will be looking for their next recruits.

### Engineering BTEC Nationals

**Why study?**
Engineering focuses on the application of knowledge, theory, analytical techniques and new technology to provide solutions for an ever changing world. Engineering may not be the easiest area of study, but this is a subject that continues to be in demand.

**Awarding body:**
Pearson Level 3
**Entry criteria:**
5 A*- C at GCSE including B in maths and any technology subject studied at GCSE.

**What do I study?**
Health and safety in the engineering workplace; mechanical principles and applications; engineering drawing and maths for technicians; engineering materials, processes and techniques, computer aided drafting in engineering and business operations in engineering.

### Product Design

**Why study?**
Product design will help you to take a broad view of design and technology, develop your capacity to design and make products and appreciate the complex relationships between design, materials, manufacture and marketing.

**Awarding body:**
AQA A Level
**Entry criteria:**
5 A*- C at GCSE which must include English and grade B in technology if it has been studied at GCSE.

**What do I study?**
3-D Design: materials, components and application. Learning through designing and making. Design and manufacture. Design and making practice.

## Physics

**Why study?**

Physics covers the science of everything that exists and does not exist – how we move, how the universe got here, why we are not all made of antimatter instead of this stuff we call matter. Your physics lessons will have a practical connection with the real world. A level physics is one of the most highly regarded qualifications in the world. Top universities and employers scramble to recruit physicists.

**Awarding body:**
AQA A Level
**Entry criteria:**
5 A*- C at GCSE with A/A* in physics or additional science. Students with lower grades will be considered at the discretion of the curriculum team leader.

**What do I study?**

Particles, quantum phenomena and electricity, mechanics, materials and waves. Fields and further mechanics, nuclear physics and an option of medical or astrophysics. There are 12 required practical investigations placed throughout the course that you will be expected to carry out and learn about, these will be thoroughly planned and evaluated by you after each experimental session.

## Chemistry

**Why study?**

Chemistry saves and changes lives. Without chemists we do not have medicine and the drugs we need to treat serious illnesses, we would not have the materials to develop new technologies, such as the newest smart phones and tablets, without chemistry chasing new materials and substances we will never have the chance at developing new fuels.

**Awarding body:**
AQA A Level
**Entry criteria:**
5 A*- C at GCSE with A/A* in chemistry or additional science. Students with lower grades will be considered at the discretion of the curriculum team leader.

**What do I study?**

Physical chemistry: atomic structure, amount of substance, bonding, energetics. Inorganic chemistry: periodicity, group 2, the alkaline earth metals, group 7, the halogens. Organic chemistry: introduction to organic chemistry, alkanes, halogenoalkanes, alkenes, alcohols and organic analysis.

## Biology

**Why study?**
Biology is the scientific study of life: as such it encompasses the investigation of living organisms and life processes from the molecular, through cells and individual organisms, to populations and whole communities of animals and plants. Our partners are actively looking for highly trained biology students, in fields that range from forensic science to medical practitioners.

**Awarding body:**
AQA A Level
**Entry criteria:**
5 A*- C at GCSE with A/A* in biology or additional science. Students with lower grades will be considered at the discretion of the curriculum team leader.

**What do I study?**
Biological molecules cells, organisms exchange substances with their environment, genetic information, variation and relationships with organisms, energy transfers in and between organisms. Organisms respond to changes in their environments. Genetics, populations, evolution and ecosystems. The control of gene expression.

## Applied Science

**Why study?**
The course will immerse you in the world of applied science through discovery and experimentation, serving as an alternative to the new A level. This course is designed specifically for those who prefer hands on experience and practical assignments to theoretical study and exams. Applied science is assignment based and will give you a broad scientific knowledge in biology, chemistry, physics and statistics that will get you ready for work or university.

**Awarding body:**
Pearson BTEC, Level 3
**Entry criteria:**
5 A*- C GCSEs grades which must include grade B in additional science and maths with English at C or above. BTEC science at merit or above can be used instead of GCSE science.

**What do I study?**
Principles and applications of science: chemistry, physics and biology, including practical scientific procedures and techniques. Science investigation skills. One optional unit of your interest to choose from the given list.



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## BTEC National Extended Certificate in IT

**Why study?**

Information technology (IT) has a significant role in the world around us and plays a part in almost everything we do. With a track record built over 30 years of learner success, BTEC Nationals are widely recognised by industry and higher education as the signature vocational qualification at Level 3. They provide progression to the workplace either directly or via study at a higher level.

**Awarding body:**
Edexcel BTEC, Level 3
**Entry criteria:**
5 GCSE's A*- C
Maths – (B recommended)
English – (B recommended)

**What do I study?**

Information technology systems. Using social media in business. Creating systems to manage information. Website development.

## Computer Science

**Why study?**

Computing is very often associated with innovation and developments in computing tend to drive it. This, in turn, is the key to national competitiveness. The possibilities for future developments are expected to be even greater than they have been in the past. There are actually more computing jobs than qualified people to fill them worldwide. If you consider the expected growth in computing, it is easy to see that companies simply need more talent.

**Awarding body:**
AQA A Level
**Entry criteria:**
5 GCSE's A*- C.
Maths – A (mandatory)
English – A (mandatory)
Computer Science – B (if studied)

**What do I study?**

Fundamentals of programming, data structures and data representation. Systematic approach to problem solving. Fundamentals of computer systems. Fundamentals of computer organisation and architecture. Consequences of uses of computing, communication and networking. Fundamentals of algorithms. Fundamentals of functional programming and systematic approach to problem solving.

## Mathematics

**Why study?**

Maths is one of the best subjects to develop your analytical, research and problem solving skills. Not only will studying maths help give you the knowledge to tackle scientific, mechanical, coding and abstract problems, it will also help you develop the logic to tackle everyday issues like planning projects, managing budgets and even debating effectively.

**Awarding body:**
Edexcel A Level
**Entry criteria:**
5 A*- C at GCSE which must include: A*/A or B in GCSE mathematics.

**What do I study?**

Pure Maths C1
Pure Maths C2
Mechanics M1
Pure Maths C3
Pure Maths C4
Decision D1

## Further Mathematics

**Why study?**

This is a challenging qualification, which both extends and deepens your knowledge and understanding beyond the standard A level mathematics. As well as learning new areas of pure mathematics you will study further applications of mathematics in mechanics, statistics and decision mathematics. If you are planning to take a degree such as engineering, sciences, computing, or perhaps mathematics itself, you will benefit enormously from taking further mathematics. This course introduces new topics such as matrices and complex numbers that are vital in many STEM degrees.

**Awarding body:**
Edexcel A Level
**Entry criteria:**
5 A*- C at GCSE which must include: A* in GCSE mathematics.

**What do I study?**

AS Further Mathematics: C1, C2, FP1, M1, S1, D1
A2 Further Mathematics: C3, C4, FP2, FP3 and two application modules from M2, S2 and D2. (C4 must be completed before FP2 and FP3)

## English Language and Literature

**Why study?**
The course provides students' with opportunities to develop the skills required to interrogate texts; be critically reflective; consider other viewpoints; apply linguistic and literary methodologies and concepts, and make connections across a range of texts and to understand and evaluate the effects of a variety of contexts.

**Awarding body:**
WJEC A Level
**Entry criteria:**
5 A*- C at GCSE which must include a grade B in both English language and English literature.

**What do I study?**
Comparative analysis and creative writing, drama and non-literary texts, poetry and prose.

## Business

**Why study?**
Business studies is a dynamic and relevant subject that gives you the opportunity to study many aspects of commercial life and real business scenarios. It has a practical focus that will enable you to look at business with a critical eye. Students develop a wide range of transferable skills that are highly valued by employers and universities which can be applied by any choice of career and further study.

**Awarding body:**
OCR A Level
**Entry criteria:**
5 A*- C at GCSE which must include a grade C in either English or maths.

**What do I study?**
Business objectives and decisions, economics, marketing, human resources, accounting and finance.

**Additional subjects may be available if there is sufficient demand.**

All students in the sixth form will receive careers education and guidance to support them in choosing the correct pathway for the future, be it in higher education, an advanced apprenticeship or other employment.

In addition students will have the opportunity to undertake physical education.

Students will also undertake a week of work experience each year and, if appropriate, will be encouraged to pursue further work experience as part of their regular curriculum.

The sixth form is led by our assistant principal and sixth formers are supported by a dedicated and experienced member of staff who can provide them with advice and guidance about their next steps.

All students will be allocated a tutor who will meet with them weekly, both as part of the tutor group and individually. The tutor will be the first point of contact for parents and for the student's subject teachers. The sixth form team will be able to guide students through their sixth form years by supporting their learning, helping them to cope with the pressures of studying at this level, and providing them with information, advice and guidance in terms of their next steps in achieving their ambitions; whether that be through apprenticeship, other employment with training, or university.

"Choosing to join Elutec was the best decision I have ever made and has opened more doors for me than traditional sixth form or college. Elutec has helped me to accomplish academic and personal achievements, like helping my confidence grow. If you told me a year ago that I would be head girl speaking in front of 200 or more people I would not have believed you. Elutec has helped me to achieve the grades I would not have thought possible due to the outstanding support all staff members give. The teachers are enthusiastic and actually care about students' education and are always ready to support. The sixth form is very involved in university days and students are given a lot of guidance for future opportunities available after Elutec, whether it be preparing for university, getting a job or becoming an apprentice. All year groups are given close links with companies and are all offered work experience which not many other colleges offer."


Neamh Aine Stickland, **Head Girl, Year 13**

# Extension activities

We believe that every young person should experience the world beyond the classroom as an essential part of learning and personal development, whatever their age, ability or circumstance. Extension activities greatly enhance our students' academic performance. All students in all year groups will undertake extension activities one afternoon a week. This is a great opportunity for them to mix with their peers from other year groups and work on projects or partake in sports or hobbies, some of which they may never have had the opportunity to try before.

"Greenpower extension activity has inspired me to become the fastest person I can be. Racing the cars is fantastic and I enjoy every challenge that racing brings."
Frederick Hales, **Year 11 student**

**Our range of extension activities include:**

- **Welding, arts and sculpture** - do you want to learn to weld? Are you interested in sculpture?
- **Sound engineering** - passionate about engineering, in this extension activity you will be creating and manipulating sounds via the use of virtual studio equipment.
- **Greenpower racing team** - are you a motorsport lover? You will be assembling and maintaining the Greenpower cars and preparing to race in competition with other schools in the country.
- **LAMDA classes** - through drama you will improve your communication skills, increase self-confidence, and develop strong social skills.
- **Pallet project** - do you love designing and woodwork? Students will be designing indoor and outdoor furniture from old recycled pallets and scrap wood.
- **Laser project** - you will be designing your own unique products on 2D design for printing on the laser cutter.
- **Speak Out Loud - Debating Club** - do you want to improve your public speaking? You will be developing critical thinking, effective communication, independent research and teamwork.
- **Young Enterprise** - do you want to become another Steve Jobs or Bill Gates? You will be setting up a company run by students selling a product or service and competing with other schools to be the best company. This will be a great experience to unveil your full potential as an entrepreneur.
- **Cross country running club** - able to run at least 3 miles? We need you.
- **Football academy** - are you a football fanatic or a novice and eager to compete and win?

**And much more...**

We believe that learning should be fun too.

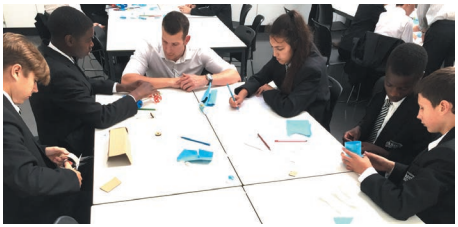
"I feel that Elutec pushes me to my limits by providing me with great opportunities. Last year I was given an opportunity to boost my confidence and took part in the Jack Petchey Speak Out Challenge, which, with the help of the fabulous staff at Elutec, I was able to win, but if speaking is not your passion, you can race, weld, create, draw and do so much more. Just remember, do not let anyone tell you the sky is the limit when there are footsteps on the moon."
Ali Ahmed, **Year 11 student**

# Involvement of industry partners: projects and challenges

An integral part of Elutec's vision is to enable our students to learn in the context of the workplace and the engagement our students have with our industrial partners is one of the things that makes Elutec unique.

Elutec brings together some of the most successful organisations in their fields in the world to give a very special opportunity for young people in east London and Essex. University College London (UCL) is our university sponsor and they provide input, oversight and direction to the education content and our approach. Our employer sponsor is Ford and, together with industrial partners such as Network Rail, National Grid and BP, are deeply involved in designing and supporting educational projects. Students learn from practising engineers, designers, scientists and managers from industry, alongside teaching staff. The close involvement of our employer partners provides a unique curriculum tailored to equip students with the confidence, academic knowledge and the practical and employability skills necessary to thrive in the workplace.

Throughout the year all students have a variety of opportunities to explore real-world problems and challenges. In addition to providing learning material, many of our employer partners offer real work experience placements, where students can gain a first-hand understanding of working in a variety of industries. We believe it is important for our students to access the world of work as part of their studies in many ways.




**Challenge Partners.** These organisations work closely with the team at Elutec to integrate the sort of challenges they face in industry into the curriculum. Students visit the employer to see them in action and discuss the challenges with their workforce. Back at Elutec, students will research the products or processes, work on real products and then solve the challenge set by the organisation. These challenges are developed with the awarding board and form the final module assessment tasks which deliver engaging and up to date real world learning.

**Case study 1 - putting real life engineering and manufacturing at the heart of the curriculum.**

The Elutec relationship with its sponsor Ford is aimed to develop, explore and build students' knowledge and skills and has already resulted in a number of student visits to Ford's technical centre in Dunton and engine plant in Dagenham, as well as Ford UK engineers' visits to Elutec. Ford Motor Company sponsorship of Elutec is aimed to encourage and develop students' knowledge and skills by linking academic theory with real world application in an industrial and business environment. Year 10 students study for a Cambridge National in Engineering Design which was written specifically for Elutec by Ford graduates, engineers and technical specialists, using Ford Motor Company's state of the art 'Global Product Development System' and industry leading 'Systems Engineering ' methodology. The material is taught on site at Elutec by Ford graduate engineers, updated annually to incorporate the very latest industry best practice and supported by a workbook written specifically for the students. The course includes a visit to Dagenham Engine plant where students see Ford's brand new EcoBlue Diesel Engine assembled in a state-of-the-art plant commissioned at the end of 2015. Our students learn a great deal during their visits. Engineers explain how and why health and safety regulations are important and the checks they have in place to prevent accidents. They also explain the different shift patterns in place. Students also learn how a piston works and the importance of precision required in assembly, hence the reason most processes are only carried out by robots. Students also visit Dunton Technical Centre where Engineering Design and testing is brought to life at the UK's largest automotive research centre. It culminates in a real world design challenge where students benchmark a range of vehicles brought to Elutec from the Ford Heritage Collection and design replacement parts for Ford's multi award winning International Engine of the Year - 1.0l EcoBoost Engine.

Christopher King, year 11 said, "The Ford engineers who came to our school inspired me with their vast knowledge and expertise. This has definitely encouraged me to pursue a career in engineering."

**Case study 2 - putting real life engineering and manufacturing at the heart of the curriculum.**
Network Rail engineers organised educational visits to the Integrated Electronic Control Centre (IECC), which houses all of the controls and signalling equipment for the level crossings on the route. As well as delivering practical sessions, Network Rail engineers ran workshops about the engineering aspects of the various types of level crossings; how trains are detected as they move along the track and how the signals and level crossings respond through the control system. In these presentations Network Rail engineers incorporated information about the future opportunities available for students.

Jessica Kelleher, year 10 said, "It was a great opportunity to visit the Network Rail site and learn how the company used the newest technology. We had an amazing opportunity to speak with Network Rail graduates about apprenticeship opportunities that are available for us. It was important for me as it gave me a new insight into railway engineering".

**Enterprise Partners.** These organisations work with us to provide opportunities for work experience, mentoring, work shadowing, young enterprise, training, scenario role play, interview preparation, and careers advice. They are key to a broad engagement with industry for our students.

**Case study 3 - putting real life engineering and manufacturing at the heart of the curriculum.**
In addition to learning industry specific technical knowledge, Elutec year 12 students developed soft skills though an interview process with Wates Construction and gained valuable transferable skills like communication, listening, research and an opportunity to be informed of many career opportunities available to them in the sector. Norma Odain-Hines, Communality Investment Advisor at Wates Construction said, "Wates see the interview process as an integral part of work placements, as it allows us the opportunity to encourage and support candidates who wish to get into the industry."

Mariah Magonda, year 12 said, "I aspire to be a professional in an extremely male-dominated industry and to succeed in my dream to become a civil engineer. After the interview, I managed to secure a placement for a week. I am buzzing with excitement to get a real feel of a civil engineer's role on a construction site! I am feeling very positive."

**Case study 4 - putting real life engineering and manufacturing at the heart of the curriculum**. Engineers from National Grid delivered presentations about electricity distribution throughout the UK and an overview of the engineering business and infrastructure of National Grid to year 12 students. The course also incorporated a visit to the National Grid operational site.

"I believe the trip to National Grid was excellent and very informative. I liked the fact that although I knew how their system worked theoretically, seeing it physically was entirely different to what I expected and because of this I found myself deeply interested. My peak interest was in the relay system as I heard it was fibre optic. Thank you National Grid."
Luis Felix, **Head Boy 2015/16**

"Placing learning in the context of real work and business brings subjects to life for our students. This is why we develop engaging activities and work so closely with our industry partners to set and explore real world challenges that give meaning to class and technical room based studies."
Mr Bristow, **Vice Principal**

Our **Challenge Partners** include:

| | |
|---|---|
| Ford | Vehicle sub assembly design, development and testing |
| National Grid | Power delivery systems |
| Network Rail | Component Maintenance and failure prevention |
| UCL | Robotics and Engduino development |

Our **Enterprise Partners** include:

| | |
|---|---|
| Coborn Engineering | Diamond milling machine tooling, PEO |
| Leonardo | Electronic systems and control |
| Brentwood Karting | Maintenance systems & racing kart development |
| Arcola Energy | Hydrogen Fuel Cell technology |
| E2V | CCD Imaging, earth and space based |
| Wates Group | Construction services & development |

# Campus

Elutec is situated at the londoneast-uk business and technical park in Dagenham, east London near to Dagenham East station. This new campus, formerly the site of the Sanofi Science Park, is currently being developed to house a range of businesses, all of whom will provide vital links to industry for Elutec.

The londoneast-uk campus is a perfect location for Elutec as it sits in the heart of industry, where a range of small, medium and large organisations manufacture and supply locally, nationally and internationally. Students at Elutec gain a sense of the real world and develop a deep understanding of the workplace.


The school has been designed to meet the demands of 21st century learners and developed to support them through their time in education providing industry standard equipment for engineering, science and technology which include:

- Fully equipped classrooms
- Industry standard engineering workshops
- Rapid prototyping facilities
- A lecture theatre (CUBE)
- A learning resources centre
- A restaurant
- A sports hall
- Mechatronics and process control facilities
- A common room for sixth formers
- Study areas
- Recreational areas
- Fast IT networks with student WiFi access for their laptops
- Access to playing fields and sports facilities.

The campus has excellent public transport access via the tube, over ground trains, and the bus.

## Our campus is ideally located for all forms of transport:

### By Train
The C2C line links with the District line at Upminster and Barking stations.

### By Underground
Elutec is located a short walking distance (approx. 5min) from Dagenham East station on the District line.

### By Bus
The 174 operates every 8 minutes from Harold Hill via Romford and drops off at the rear of Elutec. The 364 runs from High Road (Ilford) and operates every 12 minutes via Dagenham East and stops at Dagenham East bus stop. The 103 bus operates every 9 minutes from Chase Cross Road (Romford) and stops at Dagenham East station via Rainham station.

We would recommend planning your journey using the TfL journey planner for bus, tube, London overground from the website: **www.tfl.gov.uk/plan-a-journey/**.

### By Bike
Ample cycle racks are provided on the campus for students travelling by bicycle.

### By Car
Elutec is accessed via the A112 (Rainham Road South) which connects to the A1306 and A13, which in turn provides access to central London with plenty of parking for drop off and at the rear of Elutec next to the May and Baker Sports and Social club. For satellite navigation **RM7 0QX** postcode should be used as this will direct you to our rear car park which is only a few minutes walking distance to our school.

# Apply now

Think it, dream it and go for it! You want to make a difference, right? A career in engineering, science, technology or design is a chance to explore, invent, and shape the world. These fields that are endlessly creative, innovating and pioneering.

## How do I apply?

Applicants applying for entry to year 10 or year 12 in September 2017 will need to **apply directly** to Elutec using the year 10 or year 12 application form.

## Applications for Year 10

Elutec students will come from a wide catchment area stretching from Tower Hamlets in the west to Thurrock in the east. If places are over-subscribed, a nodal points system will be used to allocate spaces. This means that pupils living closest to specified nodes will have priority. Priority is given to applicants in year 10 living in the boroughs of Barking and Dagenham, Havering, Newham, Redbridge, Thurrock and Tower Hamlets. Students from outside these areas will be allocated places providing we are not full. The nodes are Elutec (sited at Dagenham East) and the following train stations: Barking, West Ham, Limehouse, Rainham, Romford, Ilford, Purfleet, Grays and Tilbury.

"Elutec is a wonderful school, it has so many opportunities that my daughter has taken and has led to her superseding her expectations in her exam results. Sending my daughter to Elutec has done wonders for my child she has achieved CEO position in Dyson whilst being there her behaviour has changed for the better."
Mrs Jenny Copeland, **Year 11 parent**


If you are currently in year 9 and would like to apply for Elutec for September 2017, please complete our year 10 application form, which can be found on our website at **www.elutec.co.uk/admissions**. Completed application forms should be e-mailed to us at **admissions@elutec.co.uk** or returned by post.

All year 10 applicants who have applied by **15 January 2017** will be notified whether or not they have a place on **15 April 2017**.

Application forms received after **16 January 2017** will be considered as long as we still have places available.

Younger students who would be interested in applying for a place at Elutec in the future are welcome to attend our STEM club, for further details see our website.

## Applications for Year 12

If you are currently in year 11, you can join Elutec after your GCSE's. Elutec students will come from a wide catchment area stretching from east London to Essex.

Students should apply direct to Elutec on the sixth form application form. Forms can be found on our website. The closing date for applications into the sixth form is **Tuesday 31 January 2017**. Applications will be taken after the published closing date although priority will be given to those who applied before.

Students will be notified whether or not they have been allocated a place on **1 March 2017**.

Our team is here to support you to choose the courses which will be the best for you to pursue your future career.

Our admissions policy is available from our website: **www.elutec.co.uk**.

"I have always had a creative mind with an interest in how things work. Post 16 choices have been a challenge to look for and to find the academy with a specialist focus in engineering and career prospects made Elutec a fantastic choice. Starting Elutec gave me a whole new insight to the industry and since moving in to our brand new building gives me a greater opportunity to develop my skills which I am truly grateful for."
Joshua Brown, **Year 13 student**

Please contact the team at Elutec if you have any queries about the admission process. We understand that transferring from your current school can sometimes be a challenging and daunting task. Our dedicated team is here to make your transition as smooth as possible:

- We are always here to talk to you and your family.
- We encourage you to come down and discuss any questions you may have.
- We launched the STEM Club to give you a real feel and taste of what it will be like to study at Elutec.
- We organise open days where our teachers and students together with industry leaders will be there to meet you and discuss what skills in the 21st century employers want or how we can help you to achieve your ambitions in life.
- We organise induction days to involve students in a number of team building exercises and some assessments. It is a good opportunity to get to know each other.

**We are here to help you to make the right decision. Join us and let's start this journey together.**

"I enrolled at Elutec as engineering has always been my passion and the chance to change the world has fascinated me. Choosing Elutec was a big step for me as engineering is a male dominated field but I am not afraid to be joining this area. I am very happy to be able to use the brand new facilities at Elutec, they are really amazing."
Jennifer Turray, **Year 12 student**

# Events

Choosing the right school is one of the most important decisions of your life and coming to visit us will help you to make the best choice. Find out about Elutec before applying for a place

A series of general information sessions are organised to provide information on what you can expect as a student at Elutec. It is recommended that you visit Elutec to meet our team – teachers, students and partners, dig deep into our programme content and find a career pathway suited to you.

### Open Days

Saturday 12 November 2016 11am - 3pm
Saturday 25 March 2017 11am - 3pm


### STEM Club

School years: 7, 8, 9, 10 and 11
Wednesdays 4pm - 6pm on following dates
2016 - 2 November, 7 December
2017 - 11 January, 1 February, 1 March, 5 April, 3 May, 7 June and 5 July

### Masterclass

School years: 5 and 6
Fridays: 1pm - 4pm
21 October, 10 February and 7 April

Please visit our website for more information **www.elutec.co.uk**.

# Students choose Elutec because...

"Well you might be saying why should I visit or attend Elutec? What is it that attracted me in the first place? Well I am glad you asked, it is a school where… WE HAVE MACHINES THAT CAN BUILD THE FUTURE! *Cough* Sorry got a bit carried away. Engineers; without them we would be without anything. So it stands to reason that we build the future, with the newest technology and huge sponsors. Elutec helps us build our futures along with our friends."

Muhammed Soobrattee, **Dyson**, **Year 10 student**

"Elutec is extraordinary. The teachers are great and supportive, while fellow students are very friendly and accepting. The school is great for a person who enjoys engineering, as we get 8 hours of it a week, three of which are spent in the workshop! It's an amazing place, and I'm glad I came. I love this place..."

Fatima Hanachova, **Anderson**, **Year 10 student**


"We are given so many amazing opportunities that you would never get in an ordinary school. It helps you build your own future by teaching you everything you need to know. You can choose whatever you want to do. All the teachers are so welcoming and experienced. Everyone is so friendly. Everyone has similar interests to each other. "

Calum Mate, **Anderson**, **Year 10 student**

"I am pleased to be joining Elutec because this school offers me the opportunity to study subjects I am interested in and would like to study in the future. I love science, design and engineering and I feel the school will help me to succeed in the future. I felt welcomed here."

Noussaiba Belbouab, **Anderson**, **Year 10 student**


Sponsors and supporters

Challenge partners

Enterprise partners

# Think big • Start small • Grow fast

**www.elutec.co.uk**

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Rainham Road South,
Dagenham East, RM10 7FN
**020 3773 4670**

Elutec
Academy of Design and Engineering