



London Design & Engineering UTC

Curriculum Policy

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Curriculum Policy

Introduction

The Curriculum Policy of the London Design and Engineering (LDE) relates directly to the UTC's Mission, Vision and Ethos Statements and objectives.

The LDE UTC is committed to the implementation of the National Curriculum but at the same time recognises the need to innovate and pursue its own curriculum initiatives.

The UTC is committed to partnerships with industry to ensure the curriculum and wider provision is relevant to developing the needs of the individuals so that they are equipped with the skills needed for the next stage in their careers.

Curriculum model summary

LDE UTC's curriculum model seeks to take advantage of the following:

- a) It reflects the UTC 'brand' with at least 40% in KS4 and 60% in KS5 spent on Technical studies
- b) Curriculum is fully integrated and delivered as far as possible through pioneering 'real life' technical projects. The firm intention is that at GCSE 20% of the core curriculum will be delivered as project based learning
- c) There are 6 learning sessions each day with enrichment in the form of societies and enterprise team sessions each week.
- d) Whilst learning groups are generally organised along age lines, age will not be a barrier to progression. There will be scope for students to be learning at a level relative to their ability and aptitudes. The enrichment programme will include the opportunity to learn in specifically targeted groups.
- e) The LDE UTC VLE will also provide the opportunity for autonomous learning support for individual progression
- f) Learning will take place in a rich variety of contexts including independent, group, cross age enterprise teams and teacher/instructor led modules relative to student need and involving a variety of group sizes
- g) Learning that takes place off site will be an integral part LDE UTC students' experience
- h) Students will be given responsibility for their learning. In the first two weeks of the academic year there will be an induction programme for each new cohort of students where time will be spent on introducing students to the way of learning in LDE UTC that will be radically different from their previous experience. They will begin to adopt a wide range of learning techniques centring on learning to learn. They will also begin to develop attitudes to their own learning, progress and expectations that will underpin their future success.

LDE UTC's Mission

- Its students will leave the UTC as work ready, independent, enterprising learners with a desire to succeed, take pride in their achievements, and have high self-esteem and confidence in their own identities. They will be technologically skilled and have a clear vision with achievable plans for their future.
- Become an outstanding centre of excellence, specialising in design and engineering, creating and sharing educational materials for both teacher delivery and teacher training. Develop professional and motivated staff and learners who will proactively engage with the vision, mission, core values and ethos of the UTC
- Serve industry by, listening and understanding their skills needs to create a relevant, sustainable and creative curriculum offer; by preparing their future workforces to have the transferable skills needed to cope in the demanding 21st century workplace environment.

The Vision

The LDE UTC sees design and engineering as an all-pervasive presence in modern society, creating useful, appealing and safe structures and products. Providing a solution to a technological problem requires design and ingenuity- whether applied to simple maintenance /repair of an existing system or to complex multi-disciplinary challenges leading to the development of new technologies

At the heart of the LDE UTC's vision is the need to develop the next generation of tech savvy young learners, who will grasp the application of pure subjects and how they relate to solving some of the world's greatest challenges in sustainable living. The UTC's leading edge technology learning spaces coupled with a pioneering and inspirational curriculum, integrating technical and academic subjects, will enable the UTC to unlock the talents and skills of its students training them today for the jobs of tomorrow. Built around real work related employer driven projects every aspect of the curriculum is linked to the students' future. LDE UTC's students will be well known for having the skills, behaviours, attitudes, experience and knowledge looked for by leading employers. Being well connected with sponsors, they will get unparalleled access to great opportunities for employment and future support.

Positive Learning Ethos

The ethos will be the key to fostering high expectations amongst everyone at LDE UTC through the creation of an environment where all are successful. At the heart of all the UTC's policies and practice will be the focus on maintaining the highest standards, which are expected within the business/work environment. Some of the UTC's students may not have experienced success before. All staff will work tirelessly to ensure that LDE UTC is a place where everyone can achieve and taste the confidence of success in some form or other and recognise and celebrate that success, however it may be revealed. LDE UTC's objective is clear: to ensure that all students, regardless of background, benefit from a first class education that enables them to reach their full potential. With this goal in mind, the UTC aims to prove that all children can be destined for academic success and a happy, fulfilled life as they grow into adulthood and beyond.

Thames Water and LDE UTC's Shared Values

Passionate about everything we do. The LDE UTC will commit itself wholeheartedly to everything it does. It will approach its work with enthusiasm, energy and positivity. The UTC will do what it does because it loves it and this passion shines through.

Reach higher, be better. The LDE UTC will always be learning and challenging each other and itself, to be the very best it can be. The UTC has the courage to improve the way it works and exceed expectations.

Be respectful and value everyone. The LDE UTC will take time to listen to each other and treat people in the way they want to be treated. It will be supportive, inclusive and recognise everyone has their own skills and experience to offer. All its family has a voice.

Take care. The LDE UTC will look after its colleagues, community and itself. It will have a zero compromise approach to health, safety and well-being.

Take ownership. The LDE UTC will take responsibility and never walk on by. It will be proactive – focusing only on solutions instead of problems.

Be proud, be seen. The LDE UTC will celebrate its past, be proud of what it does today and be excited about its future.

Goals

To achieve its goals the LDE UTC's curriculum will incorporate the following key features:

- Emphasis on Design and Engineering with a water focus.
- Strong links with the sponsors with key roles in: Curriculum Design, Curriculum delivery, Mentoring of students, Provision of work experience.
- Holistic integrated curriculum with all subjects incorporating our specialisms.
- Delivery through 'real life' learning pioneering a technological theme/project based curriculum
- Broad, balanced, coherent curriculum relevant to our lives today.
- All learning spaces to reflect a modern professional technology environment equipped with highest quality industry standard resources.
- All learning spaces will be digitally equipped.
- Employability skills and competency based attested by the Duke of York Award competence framework.
- Work experience an integral part of all our qualifications.
- Cross age enterprise teams /companies as the vehicle for delivering the pastoral function, enterprise and entrepreneurial programmes of study.
- Cross age Individual Development (ID) days with students, staff and employers to embed key employability skills.
- Flexible to ensure all future career pathways are left open.

- Induction programme on entry to each phase to ensure readiness to progress.
- Comprehensive careers programme integrated into curriculum.
- Innovative and pervasive use of ICT to promote learning and assessment of progress.
- Provision of cutting edge technical resources to enhance learning.
- Individualised learning plans allowing each student to match individual talents, skills interests and abilities to include challenging attainment goals.
- 1-2-1 monthly coaching of individual learning plans with their tutor who will stay with them throughout their college career.
- 1-2-1 monthly business success mentor, who will be a current employee of one of the UTC's sponsors.
- Small group sizes of 20 will support individual progress.
- Individual and small group intervention programmes will ensure no student is 'left behind.'
- ICT systems which support anytime anywhere learning and accessible to parents so they know how their son or daughter is progressing.
- Accessible to all students and promotes high expectations.
- Differentiated teaching and learning providing appropriate challenge for all.
- Age will be no barrier to progression.
- Delivered using the very best teaching & learning strategies and delivery mechanisms.
- Is positively managed and promotes monitoring, recognition and celebration of achievement and success.
- Is dynamic and responsive to student needs and taking account of latest technical innovation and industrial practice.
- Reflects, enriches and contributes to the community the UTC serves.
- Enrichment programme that capitalises on employer sponsor support and accesses community off site opportunities particularly sports provision.
- Assures progression to employment, apprenticeships, higher education.
- Contributes to the regional economy, meeting the demand for science and engineering technicians.
- Models the work place ethos reflected in timings of school day, term and year, business dress code, attendance, attitudes to work and professional conduct.
- Showcase students work at an annual festival of design and engineering.
- Support higher learning through the development of a primary school education programme

The LDE UTC will be relentless and work tirelessly on behalf of its students to deliver the above aspirational goals in the firm belief that once fully established these goals are achievable.

Marking and Assessment

Marking and assessment will form an important part of establishing LDE UTC's expectations and helping students to reach the level that we expect.

Students should be able to expect the following teacher assessment on a regular basis:

A baseline assessment, which should:

- Establish what level or grade the student should be aiming for.
- Make clear what level of support they can expect.

At least one formative, mid-module mark of their workbook or folder, which should:

- Establish what level the student is likely to achieve based on the work carried out so far.
- Make clear what the strengths of the student's work are.
- Explain how the work can be developed in order to reach a higher level.

One summative, end-of-module mark of the key module outcomes, which should:

- Establish what level the student has achieved overall.
- Make clear what the strengths of the student's work are.
- Explain what the student needs to do next in order to reach their target level.

Monitoring and Evaluation

The Board of Directors and the Principal will monitor the operation and effectiveness of UTC's Curriculum policy and procedures.

The Curriculum

LDE UTC will provide a four-pronged integrated curriculum. This curriculum model is one in which the intention is for the four curriculum areas to mix and integrate the curriculum, with all subjects delivered as far as possible, through a 'real life' pioneering technological project based curriculum co-designed with the UTC's sponsors.

The technical curriculum

Driven by the UTC's sponsors, giving all students the skills & knowledge required to work towards design, engineering & associated technical jobs. Crucially, the curriculum content will be up to date & offer a topical perspective to motivate students.

The core curriculum

Providing everything that is statute, parents & young people themselves expect from a 14- 19 education institution.

The options curriculum

Allowing students breadth of study & personal choice of their favoured subjects.

The wider curriculum

Offering further options of study, both accredited and non-accredited, in timetabled and non timetabled time, focused on innovation & collaboration ensuring students are given the personal skills and aptitudes required to succeed in their careers and wider lives.



The pictogram above uses a snail pump as a metaphor for the student's journey whilst studying at LDE UTC. Thames Water uses snail pumps to take untreated water through a series of processes/filters creating fresh clean high quality water.

Technical curriculum

The majority of LDE UTC's sponsors are part of Thames Water's supply chain and include large civil engineering companies such as Costain, Skanska, MWH, Balfour Beatty, Adkins and service providers IBM and the new Thames Tideway Tunnelling to name but a few. Having consulted with the sponsors the common skills that are in demand are at a technical level rather than at a craft level due to the many craft skills providers already available. The sponsors have identified the technical areas in demand of which include electrical engineering, mechanical engineering, design engineering, which includes building information modelling, architecture, materials, technologies and project management.

LDE UTC's sponsors are fully engaged and are looking to recruit a proportion of their future work forces from the UTC's school leavers in the form of higher apprentices at level 4 and above. The sponsors are involved with the design and delivery of the curriculum, enabling and empowering students with industry standard skills, creating their future workforces. This is realised through employer led projects, which offer students a new kind of personalised learning based on a challenging curriculum with clear progression into employment, higher education or apprenticeships. It is the intention that all subject delivery as far as possible will be through pioneering technical projects incorporating the water focus and that they are co-designed with our sponsors. All efforts will be made to keep students' options open during both Key Stages. The majority of students will leave with a Tech Level in engineering design, engineering mechatronics, IT programming. For the Construction qualification, students will

opt for the engineering design an innovative qualification, which provides credit for learners in the core activities of architects, engineers and construction specialists together with the relevant IT skills needed to support the 21st Century modern professional will underpin the project-based curriculum. These technical qualifications have been chosen by the employer sponsors to ensure all students have the technical skills to pursue the career pathway of their choice on offer by them.

KS4 Technical options

- BTEC Level 2 Engineering
- BTEC Level 2 Built Environment
- BTEC Level 2 Art & Design

Post 16 Technical options

LDE UTC has reviewed the curriculum offer and has decided to offer A levels and BTEC Levels. BTEC level qualifications are rigorous advanced (level 3) technical qualifications, on a par with A levels and recognised by employers. They equip students with specialist knowledge and skills, enabling entry to an apprenticeship, other skilled employment or a technical degree. Backed by employers, they equip young people with the specialist knowledge they need for careers in technical occupations; engineering, the built environment, design, architectural technology, computing.

In Key Stage 5 students will opt for either the BTEC level 3 extended diploma in Engineering or the BTEC Level 3 Extended Diploma in Construction and the Built Environment depending on the BTEC level 3 Extended Diploma in Art and Design on which career pathway students wish to pursue. This will enable all students to leave with the TBacc performance measure. All students will also leave with an A Level in Mathematics. At Key stage 5 students will chose up to a further 4 options from the Science or Technical A Levels, these include: Technical A Levels; Mathematics, physics, Computing and Product Design, or from the Science A levels, Mathematics, Physics, Biology and Chemistry.

Students will not have to specialise until year 13. By this time each student will have experienced a range of projects, visits and curriculum to help them decide what they are the most interested in.

Core curriculum

In keeping with the tenets of the Baker Dearing Trust, the core programme should be no more than 60% of curriculum time in KS4 and 40% in KS5. All students will take all core curriculum subjects. In KS4 the examined core programme comprises of English language, English literature, mathematics and due to our focus on water, single science subjects of chemistry and Physics. Students will also take a GCSE in preparing for the work place, titled Work Skills, which is a daily 30-minute slot with a one hour coaching session once a week. Its aims are to recognise the importance of preparing for the workplace and includes industry literacy skills, communication skills, careers/progression support, entry into the work place and work place behaviours. The non-examined core curriculum in KS4 includes social, moral and cultural studies (SMCS) and physical education of which for some can be a further GCSE if desired.

In KS5 the core curriculum comprises mathematics as part of the requisite to attain the TBacc together with a preparation for work skills programme to ensure that students are prepared for their next move. This will build upon what they have learnt during KS4 works skills and include CV preparation, UCAS application, living on a budget and interview preparation.

Options curriculum

The KS4 options curriculum will aim to secure a balanced range of GCSE study for all students. The options programme will offer Modern Foreign Languages (MFL) and Humanities for those students who aspire to achieve the EBacc. The list of options includes:

- Art
- Product design
- Computer science
- Biology
- Geography
- History
- Religious education.

The LDE UTC intends for the KS5 curriculum to be as flexible as possible to meet individual student needs allowing students to take a blend of A/L and Technical subjects that fits their career aspirations.

The list of options for KS5 include:

- BTEC Levels in:
 - Engineering Design
 - Engineering Mechatronics
 - IT Programming

- A Levels in:
 - Mathematics
 - Further Maths
 - Product Design
 - Biology
 - Physics
 - Chemistry
 - Psychology
 - Art single, double or triple

Wider curriculum

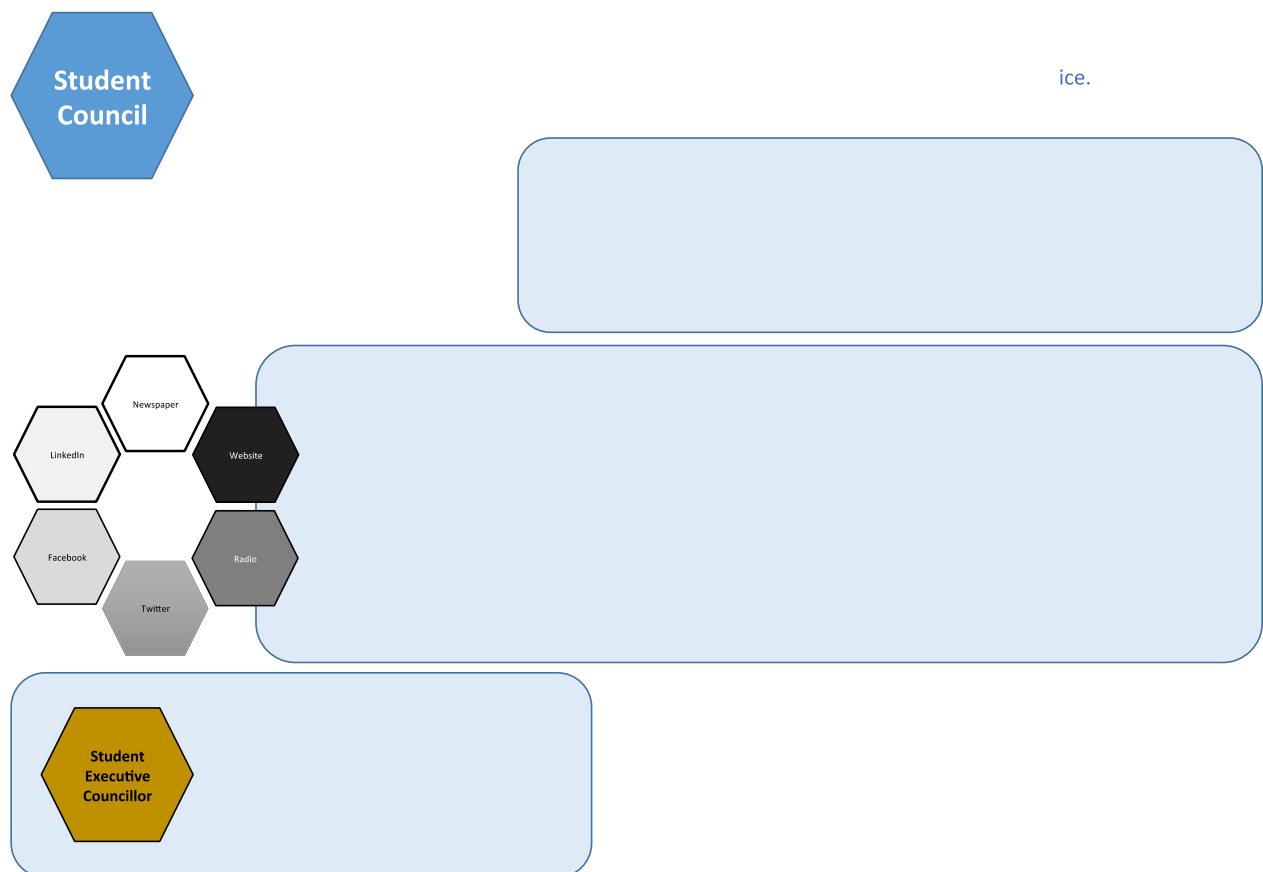
Beyond the classroom LDE UTC will offer the opportunity for all students to experience the excitement and engagement of being involved in activities that stimulate and extend their current thinking. Whilst we would never underestimate the importance of teaching and subject lessons there is a lot more to a rounded education. What goes on beyond the classroom is, we believe, of vital importance, contributing positively to our students' enjoyment at LDE UTC but also supporting them to develop into well rounded mature young adults with strong moral beliefs and a sense of purpose when they leave the college. To that end LDE UTC is committed to providing as wide a range of learning opportunities outside of the UTC day as possible. Each subject will offer regular clubs, extension activities and educational visits reflecting our vision as being at the heart of an enterprising business community and our commitment to developing students' employability skills. These will include clubs in each year in Science, Technology, Engineering and Mathematics (STEM). Online learning where students can practice their STEM skills and get immediate feedback will also be a feature of our enrichment programme. During their time at LDE UTC, as part of their wider development, every student will take part in at least one overseas trip and at least one visit with a residential

element. Enrichment will also offer the opportunity for students to study additional subjects not covered by the core and technical curriculum.

Enrichment activities are blocked into two; two hour weekly slots to allow off site activities particularly sport with only limited indoor sporting facilities on-site. The UTC will look to the local leisure Centre's in the community to offer our students the opportunity to use their facilities to enable student to undertake a minimum of two hours a week sporting activities as part of the UTC's commitment to their health and well-being.

All students will belong to an Enterprise Team of 60 students comprising 20 students from Year 13, 20 students from Year 12, 10 students from Year 11, and 10 students from Year 10. Students will remain in the same team throughout their time at the UTC. Enterprise Teams will be a core feature of LDE UTC providing students with a community in which they will be well known. These teams will not only be the vehicle for delivering the pastoral function of LDE UTC but are a key part of the LDE UTC programme of study with timetabled lessons in Enterprise and Entrepreneurship, Careers, PSHE and Critical Thinking to develop all students as independent inquirers. These lessons will take place during SMCS, working prep, work life and society time slots on the timetable. They also provide the organisation for some integrated project based learning including the delivery of Individual Development days. ID days will be part of the curriculum designed to provide learning opportunities to embed specific employability skills as detailed in the competence framework. Visits, international trips and the use of our business 'experts' will be a key feature of ID days, enhancing and enriching the technical learning experience for students. The Enterprise team study programme will be sponsored by the employer partners and linked to the LDE UTC rewards system 'Enterprise Team of the Year' will be the most prestigious award.

Societies



Apprenticeships

The Apprenticeship Centre will open in September 2017 offering LDE UTC students a unique route into sustainable employment, providing new, vibrant learning spaces equipped with the highest quality industry standard resources to provide apprenticeship training for Thames Water, their supply chain, Eight₂0 Alliance together with other local and national employers.

Thames Water is developing a comprehensive 14- 19 apprenticeship programme centred on EU skills and their Water apprenticeship programme. The pre-apprenticeship phase delivered to all students at LDE UTC will include core literacy and numeracy skills. The water focus projects will be designed to develop an understanding of the three key pillars underpinning the industry, water, waste and networks. Projects will also focus on the skills required by the construction industry and the built environment. A similar offer will be developed with our other industry partners such as Skanska developing a BIM centre.

Trainee apprentices will have the opportunity to achieve level 1 or 2 qualifications in sewerage and drainage operations, network construction operations and operating process plant. Students will have the opportunity to apply at 16 for the next stage of Intermediate apprenticeships at Level 3 includes Diplomas in Controlling Process Operations and Maintaining Water supply. High level Technical Apprenticeships will be a post 18 outcome with students undertaking Level 4 College based courses leading to BTEC-HNC qualifications. Thames Water anticipate offering UTC students up to 10 apprenticeships post 16 and the intention is that this water based programme is also made available to Anglian and Southern water boards who are geographically collocated.

In addition, Thames Water intends to encourage their supply chain to take advantage of this unique opportunity to train their apprentices. 1 in 25 of future employees of the Eight₂0 Alliance will be apprentices and the centre will also offer training in relevant engineering and construction skills for them together with those identified as meeting the needs of local employers.