



**Berkeley
Green
UTC**

Key Stage 5 Curriculum

2021-2023

Welcome to our key stage 5 curriculum booklet which contains lots of information about the subject that you can study with us. We are passionate about our specialisms of Digital Technologies and Engineering and can provide you with access to world class resources to help you learn. We also offer a range of STEM based A Level subjects and other technical qualifications that complement our specialisms well.

It would be very helpful if you could familiarise yourself with the different options available to you and discuss them with your parents. During your one to one consultation with a member of senior staff at Berkeley Green we will discuss the different options of interest.

At the end of your two years at the UTC Sixth Form you will achieve at least 3 A Levels or A Level equivalent qualifications. This could increase if your GCSE results suggest you may be capable of 4 qualifications, or if you chose to take part in Core Maths or EPQ. All qualifications that you complete with us will provide you with UCAS points if your ambition is to attend University.

| Pathway A Full Time Technical | Pathway B Full Time A Level | Pathway C A Level and Technical Hybrid | Extended Curriculum |
|---|--|---|---|
| Engineering 3 Cyber Security and Digital Technologies 3 | Chemistry Computer Science Further Maths Maths Physics | Cyber Security 1&2 Engineering 1&2 Digital Technologies 1 Applied Science eSports Graphics | Employer Projects Enrichment PSHE EPQ Work Experience Core Maths |

Please note that some of these subjects may not run if there is insufficient interest or due to staffing constraints beyond our control.

Students selecting pathway C can select any option listed in this column alongside any option listed in pathway B.

Contents

| | |
|------------------------------|----|
| Engineering 3 | 3 |
| Cyber and Digital 3 | 4 |
| Chemistry | 5 |
| Computer Science | 6 |
| Further Maths..... | 7 |
| Maths | 8 |
| Physics | 9 |
| Digital Technologies 1 | 10 |
| Engineering 1 | 11 |
| Engineering 2..... | 12 |
| Cyber Security 1 | 13 |
| Cyber Security 2 | 14 |
| Applied Science | 15 |
| eSports | 16 |
| Graphic Communication | 17 |
| Extended Curriculum..... | 18 |
| UCAS Points..... | 19 |

Engineering 3

| | |
|---------------------------------------|---|
| Pathway: | A |
| Qualification title: | BTEC Level 3 Extended Diploma in Engineering |
| Number of equivalent A Levels: | 3 |
| Grade set: | D*D*D* - PPP |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths |
| Examined through: | Once written exam at the end of year 12, one practical exam in year 12, one practical exam in year 13, six coursework units in year 12 and six coursework units in year 13. |
| Course content: | The BTEC Level 3 Extended Diploma in Engineering covers a variety of areas of Engineering. The course consists of 15 units, made up of 7 mandatory units and 8 optional units that build upon the skills and talents of our teaching staff. The course covers a wide variety of Engineering disciplines from Mechanical Principles to understanding how to create Engineering drawings using Solid works and Microcontroller systems. |
| Progression routes: | Students who complete this course have the option of applying for Apprenticeships in all areas of Engineering, including Higher apprenticeships. Alternatively they can apply to study at degree level, as the full course is equivalent to 3 'A' levels qualifies for UCAS points. |
| Find out more: | engineering@berkeleygreenutc.org.uk |
| Student opinion: | 'Before I came to Berkeley I knew nothing about engineering, but I have now applied to study for a Degree in Engineering. Berkeley has given me the confidence to know that this is the career I want. I've enjoyed all the units in the course and even though there has been challenges, I have had great support from the tutors.' Year 13 student |

Cyber and Digital 3

| | |
|---------------------------------------|--|
| Pathway: | A |
| Qualification title: | OCR Level 3 Cambridge Technical Introductory Diploma in IT BTEC Level 3 National Diploma in Computing |
| Number of equivalent A Levels: | 3 |
| Grade set: | OCR: D*-P BTEC: D*D*-PP |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths |
| Examined through: | Cambridge: 2 exams and 3 coursework units BTEC: 3 exams and 5 coursework units |
| Course content: | <p>Cambridge Technicals:</p> <ul style="list-style-type: none">• Fundamentals of IT• Global Information• Virtual and augmented reality• Internet of Everything• Product development <hr/> <p>BTEC:</p> <ul style="list-style-type: none">• Principles of Computer Science• Fundamentals of Computer Systems• Business Applications of Social Media• IT Systems Security and Encryption• Virtualisation• Systems Analysis and Design• Planning and Management of Computing Projects |
| Progression routes: | Apprenticeships in Cyber Security or University courses in a variety of digital disciplines. |
| Find out more: | digital@berkeleygreenutc.org.uk |
| Student opinion: | "The wide range of units offered provides a richer experience for me in the world of IT" Year 12 student |

Chemistry

| | |
|---------------------------------------|--|
| Pathway: | B/C |
| Qualification title: | AQA A Level Chemistry |
| Number of equivalent A Levels: | 1 |
| Grade set: | A*-E |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 5 including English and Maths. Grade 6 or higher at GCSE Chemistry or combined science. |
| Examined through: | 3 exams of 2 hours of length |
| Course content: | Students will study, amongst many topics, aspects of chemistry that are often seen in the media or that affect their lives; including green chemistry, pharmaceuticals and climate change. It also aims to help the students to appreciate how society makes decisions about scientific issues and how science contributes to the success of the economy and society, developing a deeper understanding of 'How Science Works' and how areas of the subject relate to each of us and to the world around us. |
| Progression routes: | Success in A Level chemistry paves the way for many and varied possible progressions. It is also a very useful A Level for continuing on to a wide variety of different higher education courses. A few of the many careers that a chemistry A Level could lead to are pharmacology, research and development forensic science and engineering, as well as law, journalism and education. |
| Find out more: | science@berkeleygreenutc.org.uk |
| Student opinion: | "I really like being able to explore the theory behind the concepts we cover, but also the practical elements." Year 13 student |

Computer Science

| | |
|---------------------------------------|--|
| Pathway: | B/C |
| Qualification title: | OCR A Level Computer Science |
| Number of equivalent A Levels: | 1 |
| Grade set: | A*-E |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 5 including English and Maths. Grade 6 or higher at GCSE Computer Science or IT. |
| Examined through: | Two examinations and one independent programming project. |
| Course content: | Component 1 explores modern system architectures; data types, structures and algorithms; computer networking; and the legal, moral, cultural and ethical issues in computing. Component 2 focuses on developing computational thinking skills and applying them to solving problems algorithmically. Component 3 allows students to design and develop a computerised solution to a problem of their own choosing. |
| Progression routes: | This course provides a strong base for a computer science related University course. |
| Find out more: | digital@berkeleygreenutc.org.uk |
| Student opinion: | "I love learning about the science behind how computers work, and how this links to programming. There is a lot of challenging programming and the teachers can teach almost any language" Year 12 student. |

Further Maths

| | |
|---------------------------------------|--|
| Pathway: | B/C |
| Qualification title: | EdExcel A Level Further Maths |
| Number of equivalent A Levels: | 1 |
| Grade set: | A*-E |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 5 including English. Grade 7 or higher at GCSE Maths. |
| Examined through: | Two Pure Mathematics papers and two Applied Mathematics papers. Each Paper is 1 hour and 30 minutes long and weighted at 25% of the course. |
| Course content: | A level Further Mathematics is a separate A level that is usually taken in addition to taking A level Mathematics. Half of the content of this will be Further Pure covering topics such as complex numbers, matrices, polar coordinates, hyperbolic functions and differential equations. The remainder will be from options such as Mechanics, Statistics, Decision Mathematics or extra Further Pure. |
| Progression routes: | If you're planning to study mathematics at university, then Further Maths is strongly encouraged. Further Maths is also useful for any Engineering, computing or Science related course. |
| Find out more: | maths@berkeleygreenutc.org.uk |
| Student opinion: | 'I chose further maths because if you like maths then you're going to like more maths!' Year 13 student 'Further maths is beautifully ambiguous, there are so many ways to complete a problem which allows learning through discussion amongst peers!' Year 13 student |

Maths

| | |
|---------------------------------------|--|
| Pathway: | B/C |
| Qualification title: | EdExcel A Level Maths |
| Number of equivalent A Levels: | 1 |
| Grade set: | A*-E |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 5 including English. Grade 6 or higher at GCSE Maths. |
| Examined through: | Two Pure Mathematics papers and one Applied Mathematics papers in Statistics and Mechanics. Each Paper is 2 hours long and equally weighted. |
| Course content: | A-level maths is a two year course covering Pure Maths topics such as Proof, Algebra and functions, Coordinate geometry in the (x, y) plane, Sequences and series, Trigonometry, Exponentials and logarithms, Differentiation, Integration, Numerical methods and Vectors. It also covers Mechanics and Statistics covering topics such as Probability, Statistical distributions and hypothesis testing, Mechanics, Kinematics Newton's laws. |
| Progression routes: | Maths is an A-level that universities traditionally look more favourably upon. Many degree courses require maths at A level or AS level. Studying maths helps you develop skills in logical thinking, problem-solving and decision-making, which are also valued by employers across many job sectors. |
| Find out more: | maths@berkeleygreenutc.org.uk |
| Student opinion: | 'It links deeply into both the other specialisms and ties into the other subjects too' Year 12 student |

Physics

| | |
|---------------------------------------|---|
| Pathway: | B/C |
| Qualification title: | AQA A Level Physics |
| Number of equivalent A Levels: | 1 |
| Grade set: | A*-E |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 5 including English and Maths. Grade 6 or higher at GCSE Physics or combined science. |
| Examined through: | 3 two hour exams worth 32, 34 and 34% |
| Course content: | <p>The course includes the study of electricity, magnetism, forces, fields, motion and the frontiers of physics and other topics. Students are given the opportunity to develop their interest and enthusiasm as they progress through the course, where the emphasis is on understanding the concepts taught. Lesson time is divided between practical and theory work. To reinforce what is learnt in class it is expected that students will spend a considerable amount of time in independent study and regular assignments will be set.</p> |
| Progression routes: | This course would set you up well for a university course in Physics or Engineering, and would give you a great opportunity of higher level apprenticeships. |
| Find out more: | science@berkeleygreenutc.org.uk |
| Student opinion: | 'The world around us is an amazing place and physics allows us to understand it better. I love the overlap better maths and physics.' Year 13 student |

Digital Technologies 1

| | |
|---------------------------------------|---|
| Pathway: | C |
| Qualification title: | OCR Level 3 Cambridge Technical Introductory Diploma in IT |
| Number of equivalent A Levels: | 1 |
| Grade set: | Distinction*-Pass |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths. |
| Examined through: | Two external examination and three internally assessed pieces of coursework |
| Course content: | The two examined units explore the fundamentals of IT and global information. The three coursework units provides an opportunity to practically explore the skills, knowledge and understanding required to design and build applications and develop IoT concepts. |
| Progression routes: | This course provides a solid foundation to both apprenticeships and University-level courses in all aspects of IT. |
| Find out more: | digital@berkeleygreenutc.org.uk |
| Student opinion: | "I love the AR and VR unit. It allows me to present my knowledge of cyber security in a really unique way that I haven't before experienced." Year 12 student |

Engineering 1

| | |
|---------------------------------------|---|
| Pathway: | C |
| Qualification title: | BTEC Level 3 Extended Certificate in Engineering |
| Number of equivalent A Levels: | 1 |
| Grade set: | Distinction*-Pass |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths. |
| Examined through: | One written exam taken in year 12, one practical exam taken in year 12 and two coursework units. |
| Course content: | The BTEC Level 3 Extended Certificate consists of 4 units of work, 3 are mandatory and 1 from the optional block. Units 1 and 3 (Engineering Principles and Engineering Product Design and Manufacture) are externally assessed in the form of a final exam. Units 2 and 10 (Delivery of Engineering Processes Safely as a Team and Computer Aided Design in Engineering) are internally assessed assignments. Together they give a wide variety of different Engineering experiences for students to build upon. |
| Progression routes: | Students who complete this course have the option of applying for Apprenticeships in all areas of Engineering, including Higher apprenticeships. Alternatively they can combine it with other 'A' level or equivalent qualifications and apply to study at degree level, this course is equivalent to 1 'A' level and qualifies for UCAS points. |
| Find out more: | engineering@berkeleygreenutc.org.uk |
| Student opinion: | 'This hybrid course allows me to combine a technical qualification with my academic subjects, giving me a greater profile when looking to further my studies.' Year 12 student |

Engineering 2

| | |
|---------------------------------------|---|
| Pathway: | C |
| Qualification title: | BTEC Level 3 Diploma in Engineering |
| Number of equivalent A Levels: | 2 |
| Grade set: | D*D*-PP |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths. |
| Examined through: | One written exam taken in year 12, one practical exam taken in year 12 and eight coursework units. |
| Course content: | The BTEC Level 3 Diploma consists of 10 units of work, 5 are mandatory and 5 from the optional block. Units 1 and 3 (Engineering Principles and Engineering Product Design and Manufacture) are externally assessed in the form of a final exam. All other units are internally assessed assignments. The combination of units gives students a wide variety of different experiences from learning to use Solid Works to create engineering drawings to developing machining and CNC skills in the Engineering Barn. |
| Progression routes: | Students who complete this course have the option of applying for Apprenticeships in all areas of Engineering, including Higher apprenticeships. Alternatively they can combine it with other 'A' level or equivalent qualifications and apply to study at degree level, this course is equivalent to 2 'A' levels and qualifies for UCAS points. |
| Find out more: | engineering@berkeleygreenutc.org.uk |
| Student opinion: | 'The combined elements of doing both Engineering and A Level courses means that I have a broader range of subject knowledge that both universities and employers can look at and a better understanding of some of the harder elements of both.' Year 12 student |

Cyber Security 1

| | |
|---------------------------------------|--|
| Pathway: | C |
| Qualification title: | BTEC Level 3 National Extended Certificate in Computing |
| Number of equivalent A Levels: | 1 |
| Grade set: | Distinction*-Pass |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths. |
| Examined through: | One written exam taken in year 12, one written exam taken in year 13 and two coursework units. |
| Course content: | <ul style="list-style-type: none">• Principles of Computer Science• Fundamentals of Computer Systems• IT Systems Security and Encryption• Systems Analysis and Design |
| Progression routes: | This course will prepare students well for a variety of apprenticeship and University-level courses in cyber security. |
| Find out more: | digital@berkeleygreenutc.org.uk |
| Student opinion: | “Using industry standards tools that others schools cannot offer, is the reason I came to study at the UTC!” Year 13 students |

Cyber Security 2

| | |
|---------------------------------------|---|
| Pathway: | C |
| Qualification title: | BTEC Level 3 National Diploma in Computing |
| Number of equivalent A Levels: | 2 |
| Grade set: | D*D*-PP |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths. |
| Examined through: | Two written exams taken in year 12, one written exam taken in year 13 and five coursework units. |
| Course content: | <ul style="list-style-type: none">• Principles of Computer Science• Fundamentals of Computer Systems• Business Applications of Social Media• Virtualisation• IT Systems Security and Encryption• Systems Analysis and Design• Planning and Management of Computing Projects |
| Progression routes: | This course prepares students well for both apprenticeship and a broad range of University-level cyber or digital courses. |
| Find out more: | digital@berkeleygreenutc.org.uk |
| Student opinion: | "Being able to cover so many different aspects of the digital world have given me a clear focus for what I would like to do when I finish at the UTC" Year 13 student |

Applied Science

| | |
|---------------------------------------|--|
| Pathway: | C |
| Qualification title: | BTEC Level 3 National Extended Certificate in Applied Science |
| Number of equivalent A Levels: | 1 |
| Grade set: | Distinction*-Pass |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths. |
| Examined through: | One written exam taken in year 12, one written exam taken in year 13 and two coursework units. |
| Course content: | One written exam taken in year 12, one written exam taken in year 13 and two coursework units. |
| Progression routes: | Chemistry, Biology and Physics units, as well as human anatomy, astrophysics and biochemistry. Blending together a mix of theoretical and practical topics in a well-resourced environment, the course covers a wide range of science topics to allow you to experience the full breadth of the world of science, helping you to identify areas of interest and your future specialisms. |
| Find out more: | science@berkeleygreenutc.org.uk |
| Student opinion: | 'I really enjoy the fact that with this qualification I can study all three sciences and write up scientific reports.' Year 12 student |

eSports

| | |
|---------------------------------------|---|
| Pathway: | C |
| Qualification title: | BTEC Level 3 Nationals in Esports |
| Number of equivalent A Levels: | 1 |
| Grade set: | Distinction*-Pass |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths. |
| Examined through: | Four coursework units, two of which will be completed in year 12 and two will be completed in year 13. |
| Course content: | <p>This qualification has been developed to meet this upcoming demand for skills in eSports. The qualification includes a breadth of transferable skills that enable learners to experience different areas of eSports to aid their progression to employment, either directly or via further study. ESports offers a unique opportunity to study a sector that crosses over multiple subject areas such as sport, marketing, enterprise, IT and the creatives.</p> <p>Students taking this qualification will study four mandatory units:</p> <ul style="list-style-type: none">• Unit 1: Introduction to eSports• Unit 2: eSports Skills, Strategies and Analysis• Unit 3: Enterprise and Entrepreneurship in the eSports Industry• Unit 4: Health, Wellbeing and Fitness for eSports Players. |
| Progression routes: | <p>This qualification is intended for students wanting to progress to employment in the eSports industry and other related industries. When studied alongside other Level 3 qualifications as part of the study programme, it also supports progression to a wide range of higher education courses</p> |
| Find out more: | digital@berkeleygreenutc.org.uk |

Graphics

| | |
|---------------------------------------|--|
| Pathway: | C |
| Qualification title: | To be confirmed |
| Number of equivalent A Levels: | 1 |
| Grade set: | TBC |
| UCAS points: | See end of booklet |
| Entry requirements: | 5 grades at GCSE between 9 and 4 including English and Maths. |
| Examined through: | A portfolio of work and final examination. |
| Course content: | <p>The qualification will give a coherent introduction to the study of design at level 3. Students will develop design projects and gain an understanding of the creative process. They will study;</p> <p>Visual recording and communication.</p> <p>Critical analysis.</p> <p>Creation of design outcomes.</p> |
| Progression routes: | The qualification is designed for post-16 students who want to progress into higher education and ultimately employment, in the design or creative industries. It would be taught alongside BTEC Nationals or A levels as part of the hybrid pathway. |
| Find out more: | engineering@berkeleygreenutc.org.uk |

Extended Curriculum

Employer Project

Employers make a big contribution to our curriculum at key stage 5, with regular visits to lessons and student interview preparations. We also give our students ongoing opportunities to work on projects that employers have set and present their finished solutions to the employers for feedback.

Enrichment

We offer an enrichment programme that allows students to explore learning away from their chosen subjects. This programme is designed to develop skills and understanding of concepts that would improve their employability skills moving forward. Examples of options in our enrichment programme are robot building, Royal Navy engineering project, community engagement and photography and Photoshop.

PSHE

All students at the UTC receive regular PSHE sessions, both through tutor time and in designated lessons. Students study a range of personal development topics including living responsibly, healthy relationships, living in the wider world and preparing for the next steps.

EPQ

Some students may choose to complete an Extended Project Qualification (EPQ). This course is worth an AS level and allows students to explore an area of their interest that is not necessarily related to their academic course. Students can either write an essay surrounding a topic of their choice, or create a physical/digital piece of work.

Work Experience

Work experience is a very important part of our post 16 curriculum. It allows our students to experience what life would be like working in their chosen specialism. We work closely with our partner companies to find opportunities for our students.

The learning that takes during this time is vital for giving students fantastic insight into the application of the learning that happens inside the classroom.

Core Maths

Maths is a subject that is at the heart of everything we do at the UTC, and we look for any opportunity to really challenge our students in this subject. All students are encouraged to complete a Core Maths qualification as it allows our students to explore the application of mathematics in their chosen subject. Employers and apprenticeship providers are enthusiastic about students joining them with this qualification. Core Maths is intended for students who have passed GCSE Mathematics at grade 4 or better, but who have not chosen to study AS or A level Mathematics. It can be studied in a single year and can be taken alongside A levels or other qualifications, including vocational courses.

UCAS Points

| UCAS Points | A Level | Technical | EPQ | Core Maths |
|-------------|---------|--------------|-----|------------|
| 56 | A* | Distinction* | | |
| 48 | A | Distinction | | |
| 40 | B | | | |
| 32 | C | Merit | | |
| 28 | | | A* | |
| 24 | D | | A | |
| 20 | | | B | A |
| 16 | E | Pass | C | B |
| 12 | | | D | C |
| 10 | | | | D |
| 8 | | | E | |
| 6 | | | | E |

For the qualifications that are worth multiple A Level equivalents you will need to multiply the grade by the value of the qualification. For example if you are studying the full time engineering course and achieve DDD then you will multiply the UCAS points for a single Distinction by 3, so 48 multiplied by 3 would give you 144 UCAS points. If you were to do the double engineering course and achieved DM then you would need to add the value of a distinction to a merit, so 48 plus 32 giving you 80 UCAS points.