



UTC
WARRINGTON



KS4 OPTIONS BOOKLET

2024 - 2025

OPTIONS 24- 25

Dear Student,

This booklet gives you information the Key Stage 4 curriculum, which you will start in September.

It is important that the subjects you choose are the right ones for you – the subjects you will be happy and successful doing. This booklet gives details about these subjects and advice how to make the right choices.

My advice to you is simple; focus on the areas that you have already been told you are doing well in. Don't make choices just because you want to be with your friends and think about your future plans.

Finally, when students ask me what the key to success is, my first answer is attendance. If you are here, we can work with you to maximise your achievements – so if you are regularly absent or late you will not achieve the best you are capable of.

Good luck with your decisions and remember – we are all here to help.

Mr P Rigby
Vice Principal

Dear Parents/Carers,

The options process is an exceptionally important phase in our students' transition. Students, for the first time, will have an opportunity to influence their own destiny and choose subjects that will lead to outstanding destinations.

We recognise that making these decisions, whilst thinking about further education and future career choices, can be difficult. However, students and their parents/carers should rest assured, knowing that we are keen to provide lots of further guidance and advice. Our options choices have been carefully considered with our employer partners to ensure they provide the relevant knowledge and skills required to successfully progress onto our Sixth Form T-level qualifications offer.

Please read through this booklet and talk to the members of staff that are on hand to help you this evening should you have any questions about any of the options.

I wish all students success, whichever set of exciting challenges they choose for themselves.

Chris Hatherall
Principal



Making Your Choices

This Options Booklet provides details of each of the subjects studied in the Core Curriculum offer as well the Option Choices available to our new students.

All students are required to select one study option from each of the option blocks. Further information about each of the subjects and which option block they fall into can be found in this booklet.

If there is not enough 'take-up' of a subject we will be unable to run it.



Advice and Guidance

The following should be considered when making your choices:

Best reasons for selecting a subject:

- You think you'll enjoy the course
- You're good at the subject
- You're interested in the knowledge and skills it develops
- It fits your career ideas and plans
- It goes well with your other choices
- It will give you plenty of choice in the future

Poor reasons for selecting a subject:

- Someone said it's easy
- Your friends are doing it
- You like the teacher you have now
- You think it's a good course for a boy or for a girl
- You didn't have time to research your options properly

Choosing your GCSE Subjects

All students are advised to choose their options carefully.

All choices should be informed by the following factors:

- Your plans for higher education or future career
- Interest and enthusiasm with the subject
- Aptitude and/or ability for chosen subjects
- Assessment and skills requirements
- Choices must not be dependent on friends



Attendance

All teachers and support staff work hard at UTC Warrington (UTCW) to provide the highest quality learning environment for our students.

To succeed, students need to attend school. If you have a 93% attendance at school, over 5 years you will have lost an entire year at school.

UTCW has set itself a minimum attendance target of 96%. So, in reality, this means students are expected to be on site for 96% of the 195 days they are timetabled to be on site – a minimum of 187 school days. Meaning only 1.5 days can be missed in any half term on average.

UTCW understands unplanned events come up that cause students to be absent from school. Unfortunate events such as deaths in the immediate family or social groups and serious accidents resulting in hospitalisation can arise during the school year. We want to work with you to support the students' welfare during these difficult times. UTCW staff can provide work students to complete at home to ensure as little learning time as possible is lost.

We also recognise that occasionally doctors and dental appointments take place during term time. We ask parents to ensure where possible such appointments are made outside of school hours, at weekends, or in the school holidays. When an appointment is made during the school week, please ensure that only half a day of learning is lost. We are committed to your son/daughter reaching and exceeding their potential, and this can only happen with parent/carer support.

UTCW has a pastoral team dedicated to helping our students to cope with any issues that may arise – so you are better off coming into school and receiving this support every day.

Please ensure students arrive to school every day, on time, correctly dressed and with the correct equipment to engage with their teachers.

UTCW does not authorise ANY students to take extended holidays during school time.

Key Contacts

Pastoral Manager

Mr Rane (brane@UTCW.co.uk)

Attendance Mentors

Mrs Crean (PCrean@utcw.co.uk)

Mrs Grady (sgrady@utcw.co.uk)

SENDCo

Mrs S Lee (slee@utcw.co.uk)

Designated Safeguarding Lead

Mr P Rigby (prigby@utcw.co.uk)



GCSE Grades and Vocational Equivalents

Level Equivalent	New Grade	Previous Grade
Level 2 equivalent	9	A*
	8	A
	7	
	6	B
	5	C
	4 <small>Strong Pass</small> <small>Standard Pass</small>	
Level 1 equivalent	3	D
	2	E
	1	F G
	U	U

The Core Curriculum

All students will study a core offering in the following subjects:

- Mathematics
- English Language
- English Literature
- Combined Science*

(minimum of two GCSEs covering Biology, Chemistry and Physics.)

These core subjects will lead to students achieving up to **6 GCSE** qualifications.

*Students can gain three Science GCSEs by selecting Triple Science.

Technical Pathways

Our pathway choices have been carefully selected to align with the Post 16, T Level options available to our Year 12 students and establish four-year technical pathways from KS4 to Sixth Form.

Students can study a T-level in one of the following at Sixth Form:

- Design, Surveying and Planning with Civil Engineering
- Laboratory Sciences
- Healthcare Sciences
- Digital Support Services & Digital Infrastructure
- Design and Development for Engineering and Manufacturing
- (Mechanical/Electrical & Electronic Engineering)
- Engineering, Manufacturing and Processing Control

At Key Stage 4, students can choose one of the following technical pathways:

ENGINEERING

**BUILT
ENVIRONMENT**

DIGITAL

SCIENCE



ENGINEERING

This pathway is for students looking to progress onto further study, an apprenticeship or a career in Engineering. Building on the core curriculum subjects, the combination of qualifications in this technical pathway provides a balance of practical, hands on, experience and in depth, subject knowledge needed to be a successful Engineer in industry.

LEVEL 2 ENGINEERING

Level 2 Engineering includes practical in the Engineering workshop and theoretical aspects of Engineering.

For further information, see page 10.

GCSE DESIGN & TECHNOLOGY

Design & Technology includes knowledge and understanding of how products are designed, developed and made.

For further information, see page 11.

GCSE TRIPLE SCIENCE

Studying Triple Science will support future Engineers to understand scientific principles which are essential to all aspects of the industry.

For further information, see page 17.

OR

LEVEL 2 COMPUTER AIDED DESIGN

Computer Aided Design (CAD) skills are very desirable and give Engineers the ability to communicate very complex designs and information.

For further information, see page 12.



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THE BUILT ENVIRONMENT

This pathway is for students looking to progress onto further study, an apprenticeship or a career in the Built Environment. The combination of subjects in this technical pathway provides a balance of technical skills, such as computer based building design, and underpinning knowledge, essential for progression into the Construction sector.

LEVEL 2 CONSTRUCTION

Level 2 Construction introduces students to technical aspects of building design, whilst supporting them to develop computer skills to realise their ideas.

For further information, see page 14.

GCSE ARCHITECTURE

By studying Architecture for GCSE, students will explore the history of buildings in many cultures and develop an artistic appreciation of how places are designed and used.

For further information, see page 15.

GCSE GEOGRAPHY

Geographers will understand the environment and how it impacts on people and populations, which is essential knowledge when beginning the building design process.

For further information, see page 19.

OR

LEVEL 2 COMPUTER AIDED DESIGN

Computer Aided Design (CAD) skills are very desirable and give Engineers the ability to communicate very complex designs and information.

For further information, see page 12.

DIGITAL

This pathway is for students looking to progress onto further study, an apprenticeship or a career in Digital, Information Technology or Cyber. The combination of subjects in this technical pathway provide opportunities for learners to develop technical skills in programming and digital applications alongside underpinning theoretical knowledge.

CAMBRIDGE NATIONALS IN INFORMATION TECHNOLOGY

Cambridge Nationals in IT introduces students to a wide range of digital applications and their uses.

For further information, see page 17.

GCSE COMPUTER SCIENCE

Computer Science gives all Digital students the underpinning knowledge and understanding of programming methodologies, essential to successful careers in the sector.

For further information, see page 18.

GCSE TRIPLE SCIENCE

Studying Triple Science will support future Engineers to understand scientific principles which are essential to all aspects of the industry.

For further information, see page 17.



SCIENCE

This pathway is for students looking to progress onto further study, an apprenticeship or a career in Laboratory Science or the Health Science sector. The combination of subjects in this technical pathway provide opportunities for learners to develop technical skills alongside underpinning theoretical knowledge., which build on Core Science learning.

GCSE TRIPLE SCIENCE

Students will enhance their Core Science learning by delving deeper into scientific principles and completing laboratory practical activities to test their understanding. For further information, see page 17.

CAMBRIDGE NATIONALS IN INFORMATION TECHNOLOGY

Used to support all scientific learning in the pathway, students will develop an understanding of how digital applications and technology are used across the sector. For further information, see page 17..

GCSE GEOGRAPHY

Science pathway learners will benefit from understanding more about the world we live in and underpinning science behind all aspects of our geographical environment. For further information, see page 19..



The Core Curriculum

All students will follow these courses throughout KS4.

GCSE Mathematics

Faculty Lead - Mrs S Rice

Students will study either the Foundation or Higher level Programme. Across both programmes, students will be required develop confidence in using and applying the skills necessary to work mathematically, building on the content covered in KS3. Students will need to show they can think through more complex problems and break them into smaller tasks.

Topics on this course include:

- Number
- Algebra
- Ratio, Proportion and Rates of Change
- Geometry and Measure
- Statistics
- Probability

Assessments:

Paper 1 – Non Calculator (80 marks)

Paper 2 – Calculator (80 marks)

Paper 3 – Calculator (80 marks)

Employer Links:

HSBC

Sellafield Ltd

Careers linked to this subject:

Engineer

Cyber security officer

Systems developer

Software Engineer

*Further Maths

Further Maths will be an optional subject for our most-able Mathematicians. This will be offered across all pathways and will be subject to invitation.



The Core Curriculum

All students will follow these courses throughout KS4.

GCSE English Language and English Literature

Faculty Lead - Mrs L Brown

Students will study GCSE English Language and GCSE English Literature and receive two separate GCSE grades for these subjects. Studying English is the best way to improve your written and spoken communication, as well as your ability to read for meaning and understanding.

As part of your GCSE English Language course you will study a range of fiction and non-fiction text from the 19th Century to modern day. You will also learn how to write creatively and how to form a written argument and viewpoint.

In GCSE English literature, you will study a range of fiction texts including: Shakespeare's Macbeth, A Christmas Carol by Charles Dickens, An Inspector Calls by JB Priestley and a range of poetry on the themes of power and conflict.

Assessments:

- English Language

Paper 1 – Explorations in Creative Reading and Writing

Paper 2 – Writer's viewpoints and perspectives

- English Literature

Paper 1 – Shakespeare and 19th Century Fiction

Paper 2 – Modern text; Poetry anthology; Unseen poetry

Careers linked to this subject:

Journalism

Advertising and marketing

Teaching

Public relations

Solicitor

Technical report writer



The Core Curriculum

All students will follow these courses throughout KS4.

GCSE Science

Faculty Lead - Mr D Twist

GCSE Science counts for two GCSEs. Students will study content from Biology, Chemistry and Physics across their two years of GCSE. Alongside this content, students will complete a variety of mandatory practical investigations that they will be assessed on as part of their final exam.

Students will study topics such as:

Biology

Cell Biology
Infection & Response
Bioenergetics

Chemistry

Atomic Structure & The Periodic Table
Organic Chemistry
Chemical Analysis

Physics

Forces
Particle Model of Matter
Energy

Assessments:

- Paper 1 – Biology, Chemistry & Physics (50%)
- Paper 2 – Biology, Chemistry & Physics (50%)

Employer Links:

Manchester Metropolitan University
Vixtrex
NHS
Jacobs

Careers linked to this subject:

Biomedical Scientist
Marine Scientist
Forensic Analyst
Pathologist
Pharmaceutical Scientist
Meteorologist
Biomedical engineering
Laboratory Scientist



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

EAL Level 2 First Certificate in Engineering Technology

TECHNICAL PATHWAY:
ENGINEERING

Faculty Lead - Mrs J Hall

In Key Stage 4 Engineering, we aim to give you a broad introduction to the practices and processes in the Engineering industry. You will be introduced to knowledge, understanding and skills that are relevant to a wide variety of careers in Engineering. This course takes a hands-on approach to engineering training and is designed to develop practical skills and professional behaviours for progression onto an apprenticeship, employment or further study in Engineering.

You will study mandatory units which will provide you with knowledge of the Engineering Environment, Engineering Principles and Engineering Techniques. Each unit includes theoretical knowledge and an assessment in; manual handling, materials selection and Engineering drawing.

You will also complete a unit in Engineering Practice; learning to use tools and equipment in the Engineering Workshop safely and accurately to manufacture Engineered products. Students will learn about and adhere to Health and Safety laws in the workshop, alongside developing an appreciation of how products are made.

Assessments:

- Examination
- Combination of knowledge and practical assessments

Employer Links:

Sellafield Ltd
Jacobs
Neutronic Technologies
Cavendish Nuclear
Teckentrup
Siemens

Careers linked to this subject:

Mechanical/Electrical Engineer
Design Engineer
Mechatronics Development
Pneumatics/Hydraulics Engineer
Project Management



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

GCSE Design & Technology: Product Design

**TECHNICAL PATHWAY:
ENGINEERING**

Faculty Lead - Mrs J Hall

GCSE Design and Technology enables students to use creativity and imagination to design and make prototypes that solve real and relevant problems, considering their own and others' needs, wants and values. This GCSE course will help you to understand and apply iterative design processes through which you will explore, create and evaluate a range of products. You will develop an awareness of practices and skills from the creative, engineering and manufacturing industries, which are highly desirable for securing apprenticeships or further study in these fields.

You will study a core curriculum of design, materials and manufacturing skills, which is underpinned by maths and science. You will learn about and apply the following core concepts throughout the course:

- Impact of new and emerging technologies
- Evaluation of new and emerging technologies
- Energy
- Modern and smart materials
- Ecological and social footprint
- Investigating and analysing the work of others

You will complete an extended portfolio of coursework; a sustained design and make task based on a contextual challenge set by the exam board. In doing this, you will demonstrate your ability to identify, investigate, analyse and outline design possibilities design and make prototypes and evaluate their fitness for purpose.

Assessments:

- Formal end of year examination
- Coursework portfolio

Employer Links:

Dyson
Alessi

Careers linked to this subject:

Mechanical/Electrical Engineer
Design Engineer
Pneumatics/Hydraulics Engineer
Project Management.



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

Level 2 Certificate in Computer Aided Design (CAD)

Faculty Lead - Mrs J Hall

**TECHNICAL PATHWAY:
ENGINEERING**

**TECHNICAL PATHWAY:
CONSTRUCTION & THE
BUILT ENVIRONMENT**

Computer Aided Design is one of the fundamental digital skills essential to the whole Engineering industry. Students who demonstrate proficiency in Computer Aided Design are highly sought after and their skills are transferrable across a wide range of industries and job roles. You will develop awareness of the range of information used and shared in Engineering and how Computer Aided Design supports and enhances these processes.

You will study principles of 2D and 3D design through exploration of a range of software packages and drawing environments. You will use a range of hardware and software to create 2D and 3D drawings and assemblies. The skills that you develop will allow you to create complex assemblies, Engineering drawings and simulations. You will also learn the fundamentals of using computers, the impact of physical surroundings and health and safety aspects of Computer Aided Design.

As well as written assessments, students will build an extended coursework portfolio demonstrating their proficiency in all aspects of Computer Aided Design.

Assessments:

- Knowledge examinations
- Coursework portfolio evidencing practical skills

Employer Links:

Sellafield
Jacobs
Tenet Consultants
Dyson

Careers linked to this subject:

Engineering
Process Control
Systems Design
Manufacturing
Robotics/Automation
Medical Services



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

Level 2 Construction and The Built Environment

Faculty Lead - Miss N Graham

**TECHNICAL PATHWAY:
CONSTRUCTION & THE
BUILT ENVIRONMENT**

This qualification enables you to develop a theoretical and practical knowledge of the built environment alongside some practical skills. It enables you to engage with the mathematical and scientific principles that underpin the construction industry, and to explore the impact of design through research and the application of your own ideas in response to a design brief. You will explore a range of professional and trade roles as well as some of the different structures and buildings of the built environment. It also allows you to progress to further study at level 3 of academic and/or vocational qualifications in construction and the built environment, engineering or design, and to apprenticeships.

Topics on this course include:

- Construction Technology
- Construction & Design
- Scientific & Mathematical Applications for Construction
- Construction Drawing Techniques

Assessments:

- Unit 1 Exam (1h 30) – 40%
- Project Work Assessment – 60%

Employer Links:

AECOM
Mott MacDonald
Carefoot
Sisk
Costain
Sellafield Ltd
Murphy

Careers linked to this subject:

Civil/Site Engineer
Project Manager
Structural Engineer
Quantity Surveyor
Land Surveyor
Architectural Technician



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

GCSE Architecture

Faculty Lead - Miss N Graham

**TECHNICAL PATHWAY:
CONSTRUCTION & THE
BUILT ENVIRONMENT**

GCSE Art and Design (3D) (Architecture) will provide you with the knowledge, experience and portfolio of evidence in order to access further study that can lead to a career in Architecture or related area. It will develop your technical skills and give you opportunity to create practical work. It will provide you with a foundation knowledge of Architecture and help you decide if this is a career pathway you wish to pursue at a later date. This course develops your visual skills in drawing, recording, 3D making, critical thinking, organisation and problem solving. It requires independence and self motivation as well as the ability to commit the time to be successful. You will explore contemporary architecture and designers and develop your own architectural solutions to the project themes.

Assessments:

- Component 1 Portfolio - 60% of your overall marks.
- Component 2 Externally set assignment - 40% of your overall marks.

Employer Links:

AECOM
Mott MacDonald
Carefoot
Sisk
Costain
Sellafield Ltd
Murphy

Careers linked to this subject:

Civil Engineer
Site Engineer
Project Manager
Structural Engineer
Quantity Surveyor
Land Surveyor
Architectural Technician



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

Cambridge Nationals in Information Technology

Faculty Lead - Mrs T McAiney

Digital weaves its way through every element of your life, and the skills young people need to be successful in the future grow and grow. This course will give you the opportunity to develop knowledge and technical skills needed for success in a wide range of IT fields, in a practical learning environment.

Topics on this course include:

- User Interface and User Experience (UI/UX) and design tools
- Data and Testing
- Cyber Security
- Digital Communication Tools
- The Internet of Everything (IoE)
- Spreadsheets and data handling
- System Design
- Prototyping and Testing
- Augmented Reality

Assessments:

- R060 – Data manipulation using spreadsheets assignment
- R070 – Using Augmented Reality to present information assignment

Employer Links:

Amazon

Sudlows

BCN

Evotix

Warrington Borough Council

Careers linked to this subject:

Cybersecurity

Systems Engineer

Solutions Architect

Mixed Reality Developer

UX Designer

Software Developer

Support Technician

Project Manager

TECHNICAL PATHWAY:
DIGITAL

TECHNICAL PATHWAY:
SCIENCE



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

TECHNICAL PATHWAY:
DIGITAL

GCSE Computer Science

Faculty Lead - Mrs T McAiney

If you love to learn about mathematics and technology, the impact it has, and how you can use computers to solve the problems of today and tomorrow, this is the course for you. The qualification is split into two parts:

Computer Systems; including systems architecture, networking, cyber security, systems, and the ethical, legal, cultural and environmental impacts of digital technology.

Computational Thinking, Algorithms and Programming; which includes designing, creating and refining programs, Python programming fundamentals and techniques, types of programming languages, producing robust programs and logic.

Assessments:

- Paper 1 – Computer Systems (50%)
- Paper 2 – Computational Thinking, Algorithms and Programming (50%)

Employer Links:

Sudlows

Careers linked to this subject:

Robotics

ICT Technician

Systems Engineer



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

Triple Science

Faculty Lead - Mr D Twist

Triple Science counts for three GCSEs, giving students the option to study the three scientific disciplines separately. The courses will allow students to develop their knowledge of Biology, Chemistry and Physics further than the GCSE Science option and will push them to further their understanding of key topic areas from within each field.

Alongside this content, students will complete a variety of mandatory practical investigations that they will be assessed on as part of their final exam.

Topics studied on each of the courses include:

Biology

- Bioenergetics
- Homeostasis & response
- Inheritance, variation and evolution
- Ecology

Chemistry

- Quantitative chemistry
- Chemical changes
- Energy changes
- The rate and extent of chemical change
- Organic chemistry
- Chemical analysis
- Chemistry of the atmosphere

Physics

- Atomic structure
- Forces
- Waves
- Magnetism and electromagnetism

Assessments:

- There are six papers: two biology, two chemistry and two physics. Each of the papers will assess knowledge and understanding from distinct topic areas.

Employer Links:

Manchester Metropolitan University
Jacobs
Victrex
NHS

Careers linked to this subject:

Biomedical Scientist
Marine Scientist
Forensic Analyst
Pathologist
Pharmaceutical Scientist
Meteorologist

TECHNICAL PATHWAY:
ENGINEERING

TECHNICAL PATHWAY:
SCIENCE

TECHNICAL PATHWAY:
DIGITAL



Technical Pathway Subjects:

Optional subjects to be taken alongside core GCSE's.

GCSE Geography

Faculty Lead - Mrs J Rigby

Geography is one of the most exciting, adventurous and valuable subjects to study today. So many of the world's current problems boil down to geography and need the geographers of the future to help us understand them. Global warming, sustainable food production, natural disasters such as earthquakes and tsunamis, the spread of disease, the reasons for migration and the future of energy resources are just some of the great challenges facing the next generation of geographers. At UTCW, we apply our geographical knowledge and skills to real life scenarios at every opportunity.

**TECHNICAL PATHWAY:
CONSTRUCTION & THE
BUILT ENVIRONMENT**

**TECHNICAL PATHWAY:
SCIENCE**

Topics on this course include:

- Tectonic and Climactic Hazards
- Ecosystems – Rainforests and Deserts
- Rivers and Coasts
- Urban Challenges
- Closing the Development Gap
- The Changing UK Economy

Assessments:

- Paper 1 – The Physical Environment (35%)
- Paper 2 – The Human Environment (35%)
- Paper 3 – Geographical Applications (30%)

Employer Links:

Mott Macdonald
The Environment Agency
United Utilities

Careers linked to this subject:

Flood Risk Management
Urban Planner
Environmental Impact Assessor
GIS Specialist
Water Resource Manager
Sustainability Consultant
Climate Change Adviser
Rural Planner



Key Stage 4 Options Form Guidance 2024 - 2025



We are looking forward to welcoming you in September. Options selection is an exciting part of the transition process that helps you to begin your technical education journey.

Which GCSE subjects are compulsory?

All students will study English Language, English Literature, Mathematics and Science (either GCSE Science counting for two GCSE's or the separate science which counts for three.)

How many subjects can I choose?

All students will be able to select a total of three additional subjects. We ask that you note your choices in order of preference and we will do our best to ensure that you study these subjects.

How do I choose my GCSE subjects?

All students are advised to choose their options carefully. Choices should be informed by the following factors:

- Plans for future career or higher education
- Interest and enthusiasm for the subject
- Aptitude and/or ability for the subject
- Assessment and skills requirements

Choices must not be dependent on friends

Can I change my option choices later?

It may be possible to change your option choices later. However, we cannot guarantee there will be space on another course and once the class allocation is full we cannot add numbers.

There will be a limited window for change once term starts in September.





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