

Science

Hello and welcome to the Area of Access, Health and Social Care and Science. As new students in this area you will be amongst the first cohort to use the new Centre for Health and Social Care Professions which has been eagerly anticipated.

A background in Science can lead to many important and exciting job opportunities. It enables students to become better placed in understanding some of the World's biggest and most important ongoing issues, especially those related to Human health. Students studying Science are the future in terms of solving such problems like mechanisms of disease, pharmacology and drug design, environmental monitoring and change, and medical instrumentation for diagnosis and cure. We are very proud of what our students then go on to do in HE and the workplace. Our Science team is enthusiastic and proud to pass the baton of its knowledge and experience to its students, that hopefully leads to the World being a safer and better place.

I look forward to this new academic year in the development of new technologies and innovations in teaching and learning that will be embraced.

Good luck and best wishes

Suzanne



Welcome & Induction 2020

Click image below to open video in YouTube



Better Careers Begin Here

Meet the team: Suzanne McKay

Hello, I am the Area Head for Access, Health and Social Care and Science and I am in the privileged position of leading the team. I have worked at the college for 10 years and my favourite aspect is seeing how student's progress and develop in academia but more importantly in confidence, professional skills and building resilience; which is so important to work successfully in this sector.

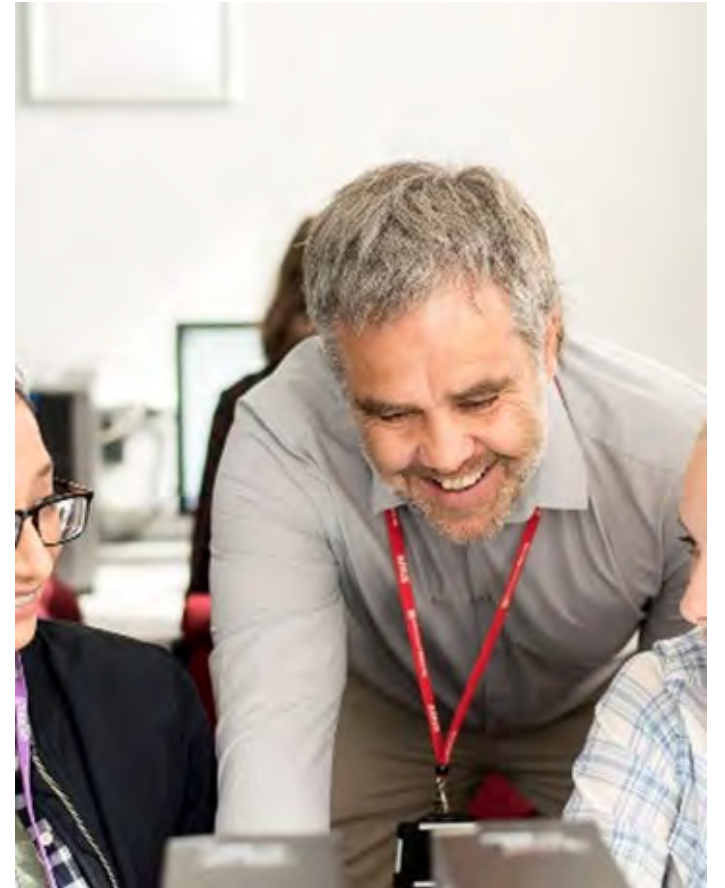
I started my career in health and social care through working with the elderly and then with adults with physical and learning difficulties, starting as a carer through to care management and training of staff. From this I moved into education, all this was possible from ongoing continuous professional development (CPD) of which you will all see is essential in this area. Recently I continued this, with achieving a Master's Degree in Education which I greatly enjoyed. When teaching I like sociology, anatomy and physiology and communication as subjects and in my spare time I love being an Akela for a local Cub Scout Group which I have done for many years.



Meet the team: Gary Silkstone

I am the Assistant Area Head for Access, Health and Social Care and Science. On graduating for my PhD in Biochemistry at the University of Essex in 2000, I continued working in scientific research for the next 17 years. I have worked on some interesting and noteworthy projects in that time, most of which engaged with trying to solve Biochemical problems linked to Human disease states and improving the outlook of these by primarily solving disease mechanisms, and on trying to bring therapeutics to the public domain.

Particularly noteworthy projects have been 'Producing a real substitute to donated blood', 'The effects of overhead pylons on Human health', and 'The roles of reactive oxygen species in aging and other disease processes'. In my time at U of E I was fortunate enough to publish a lot of this work, most of which is of International standard. Having started my life as a builder then coming to the education scene later in life, I have chosen now to teach and help kids and adults alike realise that their dreams and ambitions can be achieved through knowledge and hard work.



Meet the team: Tom Spence

Tom has been at Colchester Institute for over six years where he has been responsible for co-ordinating, delivering and assessing a number of learning programmes, including Psychology and Sociology on Access to HE; Pre-Access; Introduction to Psychology; and BTEC Science (Human Behaviour).

In addition, Tom has teaching experience in GCSE, A Level and ASDAN qualifications and fifteen years' experience of supporting children and adults in developing their social and communication skills within the health and social care sector. Tom has worked closely with people with ASD, ADHD, ODD, Down's, epilepsy, dementia, schizophrenia, dyslexia, dyspraxia and learning difficulties, with focus on reducing challenging behaviour and increasing independence. Hobbies include squash, windsurfing, camping, and live music.



Meet the team: Joanne Taylor

I have been teaching in college for over 20 years. Over these years I have taught:

Functional and Study Skills, English as a Foreign Language, Humanities, History, Sociology, Criminology & Forensics

..... And many of these have been taught online too!!!!

I have taught in a variety of locations, including the United States. I have a BA and an MA in History and Sociology. I am currently completing my PhD in American Studies at the University of Essex.

As you can see, from my variety of interests we will have loads of interesting fun, while learning, in class.

You have lots of valuable experience too which I would love you to share when we have classroom discussions about social phenomena.

Current events are always important, so keep an eye on the news – we can definitely include any new social developments into our classroom experience, analyse it and come to conclusions as a class.

Questions, challenges and openness to new concepts is all I ask of you when we meet!

HOWEVER, it is not all fun – I have high expectations of academic achievement, including conduct, so please also bring your professional head with you too!



Meet the team: Richard Farrar

I am the Course Leader of the Access to HE Diploma and teach Human Biology and study skills on this course. I have been teaching at Colchester Institute for 5 years and prior to this was lecturer and course leader of science degree programmes, including Human Biology and Nutrition and Health, at University Campus Suffolk. I was also the admissions tutor for these programmes. My main purpose at Colchester Institute is to help prepare mature students for a university degree course, ensuring that you have all of the necessary skills and knowledge to be successful in Higher Education. My focus is on widening participation and helping adult learners achieve what they were not able to in compulsory education, and I am really proud to have seen many of our students progress on to degree courses as diverse as Nursing, Physiotherapy, Psychology and English.

I look forward to meeting you on the programme and wish you all the best in your studies!



Meet the team: John Pullen-Appleby

Hello, I am John Pullen-Appleby and I am the course leader for Access Diplomas at the Braintree campus. I am the Social History tutor on Access courses, teaching this subject at the Colchester Campus. I also teach Core Studies on both Braintree and Colchester Access programmes and am a personal Tutor on both campuses.

I have over Twenty years' experience in working with mature students wishing to access university courses. I have, in the past, been active teaching on A Level and degree programmes and other Adult Education courses in the East Anglian region. I have a particular interest in Nautical History and have published in this field. I attended Colchester Institute as a mature student myself and have a deep commitment to helping adult students enter university after a break in their education and look forward to meeting students in the forthcoming year.



Meet the team: Sian Smith

I am a forensic anthropologist with nearly 10 years' experience across academia and forensic practice. I have worked with a number of major universities, such as University College London, teaching and conducting research in the forensic sciences. I previously worked as the visiting scientist for the New York Office for the Chief Medical Examiner, where I worked on numerous active and cold cases involving human remains.

I completed my BSc and PGCert at the University of Exeter, my MRes at University College London, and I am currently finishing up my PhD developing novel 3D imaging methods for skeletal trauma analysis for forensic investigations.

I love sharing my casework experience in my teaching sessions to help inspire students for their future careers. And, I am looking forward to introducing my specific background in 3D imaging and digital technology to your forensic studies.



Meet the team: Phil Summerton

Phil has wide and varied experience in science, having taught physics, chemistry and biology in several secondary schools, and leading a science department in a special educational needs school. Phil also has extensive industrial experience having worked as a therapeutic radiographer in several hospitals, and supporting colleagues as a clinical mentor and assessor.

Phil enjoys scuba diving, cycling and walking and keeps up to date in the fast moving world of science by reading and listening to podcasts.



Meet the team: Rachel Shedd

Hi, my name is Rachel Shedd and I am the Course Leader for BTEC Level 3 Forensic and Criminal Investigation. I started my love of Forensics when I studied BSc (Hons) Forensic Science at the University of Lincoln. Following this I decided to further specialise in Forensic Anthropology and Archaeology and undertook MSc (Hons) Forensic Archaeological Science at UCL.

I have had the pleasure of working with agencies such as JPAC, helping to repatriate skeletal remains from wars to their families across the world, as well as undertaking numerous excavations to help aid Police investigations and determining biological profiles (age, sex, race and height) from skeletal remains. I have been teaching at Colchester Institute now for five years, helping to pass on my knowledge of Forensics to help students go onto study Forensic Science and Forensic Investigation themselves.



Science – Where we learn

The Science programmes are delivered in S Block – a modern building equipped with purpose built laboratories maintained and run by two laboratory technicians.



Welcome & Induction 2020

Science – Where we learn – Modern equipment



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Science – Where we learn – Crime scene recreation



Science – What we learn – Essential Laboratory Skills



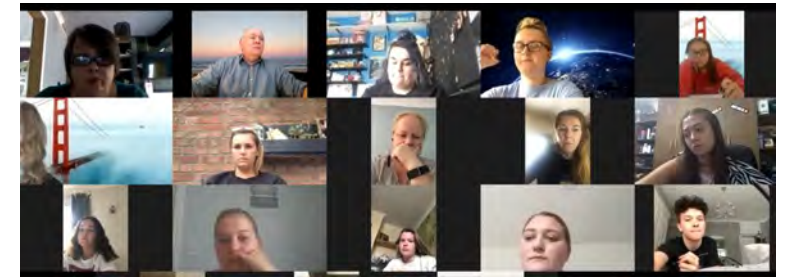
Science – Where we learn – Team Work and Analysis Skills



Science– Remote teaching and learning

Due to the current Covid-19 situation the Science team have maintained learner engagement and progress by a mixture of video lessons via Zoom, phone tutorials and use of the College Virtual Learning Environment, Moodle.

It is an expectation that learners will fully engage with all teaching and learning methods used, including video lesson, which have proved very effective in ensuring learners make progress.



zoom



moodle

What will you be learning?

We offer two levels of Science programme:

Pearson BTEC Level 1/Level 2 Extended Certificate in Applied Science

Pearson BTEC Level 3 National Extended Diploma in Applied Science

Pearson BTEC Level 3 National Extended Diploma in Forensic and Criminal Investigation

GAP – Graduate and Professional and Industry Placement

Graduate And Professional

All learners are required to collect 30 Graduate And Professional hours whilst on their programme. This can be by engaging with potential employers on an industrial visit, or organising some voluntary hours developing transferable work skills.

Industrial Placement

Learners are encouraged and supported to find up to 315 hours of industrial placement, this considerably enhances employment prospects and prepares learners for the next step. Essential employability skills can be developed such as communication, professional etiquette and specialist industry knowledge.

Pearson BTEC Level 1 / Level 2 First Extended Certificate in Applied Science

This is a full time, one year programme for learners with a minimum of **four GCSE's at Grade 3** or above including English Language.

The programme includes units Chemistry and our Earth, Energy and our Universe, Biology and our Environment, Application of Chemical Substances, Application of Physical Science, Health Applications of Life Science, Practical Scientific Project, The Living Body, Investigating a Crime Scene, Chemical Analysis and Detection, and Employability Skills

Assessment is mostly by coursework and one 60 minute examinations on Principles of Science and one 75 minute examination on Scientific Skills, which must be passed to complete the programme. Learners can have up to two attempts to pass the examinations.

Progression can be to employment or a suitable Level 3 programme..

Pearson BTEC Level 3 National Extended Diploma in Applied Science

This Pearson BTEC Level 3 Foundation / Extended Diploma is for learners who want to continue their education through applied learning and who aim to progress to higher education and ultimately to employment in the science industry sector.

This is a full time, two year programme equivalent to three GCE 'A' Levels, and is suitable for progression to University. Learners will have **5 GCSE's at Grade 4** or above including English Language, Maths and Science. A merit/distinction in a suitable Level 2 programme is also accepted.

Learners will be assessed by coursework, examinations and practical laboratory skills.

In Year one there two units that use examinations, a total of four exams are sat in January, with a resit opportunity in May/June. In Year 2, three short examinations are sat for one unit, and a two and a half examination for the another unit.

Learners achieve the National Foundation Diploma in Applied Science in Year 1

Learners must pass all units in year one to progress to year two of the programme.

Work placement

Progression can be to employment or Higher Education.

Welcome & Induction 2020

Pearson BTEC Level 3 National Extended Diploma in Applied Science



The course gave me a broad introduction to science which helped me understand what direction I want to take my career in, as I have been able to learn about so many areas. I have a much better understanding of the subject and where I would like to develop my skills further.
Level 3 Applied Science learner



Better Careers Begin Here

Pearson BTEC Level 3 National Extended Diploma in Applied Science

Year 1 Units:

Principles and Applications of Science I

(Three 40 minute examinations – Biology, Chemistry, Physics)

Science Investigation Skills

(Practical Investigation and 90 minute examination)

Practical Scientific Procedures and Techniques

Laboratory Techniques and their Application

Physiology of Human Body Systems

Microbiology and Microbiological Techniques

Year 2 Units:

Principles and Applications of Science II

(Three 50 minute examinations – Biology, Chemistry, Physics)

Contemporary Issues in Science

(six hour research period than a two and a half hour examination)

Medical Physics Applications

Genetics and Genetic Screening

Applications of Organic Chemistry

Investigative Project

Materials Science

Pearson BTEC Level 3 National Extended Diploma in Forensic and Criminal Investigation

The Pearson BTEC Level 3 National Extended Diploma in Forensic and Criminal Investigation is intended for post-16 learners who aim to progress to higher education to study forensic science, criminology or psychology and ultimately on to employment. The qualification is equivalent in size to 3 A Levels (Extended Diploma) studied over two years.

This is a full time, two year programme equivalent to three GCE 'A' Levels, and is suitable for progression to University. Learners will have **5 GCSE's at Grade 4** or above including English Language, Maths and Science. A merit/distinction in a suitable Level 2 programme is also accepted.

Learners will be assessed by coursework, examinations and practical laboratory skills.

There are four examinations, two in each year in January, with a resit opportunity in May/June.

Learners achieve the National Foundation Diploma in Forensic Investigation in Year 1

Learners must pass all units in year one to progress to year two of the programme.

Pearson BTEC Level 3 National Extended Diploma in Forensic and Criminal Investigation

Year 1 Units:

Principles and Applications of Science I

(Three 40 minute examinations – Biology, Chemistry, Physics)

Science Investigation Skills

(Practical Investigation and 90 minute examination)

Practical Scientific Procedures and Techniques

Laboratory Techniques and their Application

Physiology of Human Body Systems

Forensic Photography

Year 2 Units:

Applications of Criminology

(Three hour examination)

Applications of Criminal and Forensic Psychology

(Three hour examination)

Forensic Anthropology and Archaeology

Criminal Investigation Procedures in Practice

Microbiology and Microbiological Techniques

Forensic Genetics

Environmental Forensics

GCSE Maths and English Language and other additional qualifications

If you did not manage to achieve a GCSE Grade 4 in **English Language**, or **Mathematics**, resit sessions will form part of your study programme for your time at college.

You will attend these sessions until you achieve the Grade 4 required by the Government .

As part of your Science study programme you will also complete a **British Values** qualification, and a **Keeping Safe and Healthy** qualification, both excellent additions to your CV, and relevant to future progression.

Support for you on your study programme

You are well supported during your time at Colchester Institute!

You will be allocated an academic tutor who you can see on a regular basis to discuss coursework and preparation for examinations.

We also have Student Welfare who give advice on health, finance and can refer to counselling support.

We also offer support on progression, including preparing you for University applications and interviews, job interviews and developing your CV.

One learner said: "I just wanted to say a massive thank you! From the moment you became my teacher was amazing. I was struggling so much with Biology and lacking confidence in every aspect. With your help and support you guided me through. I had a teacher who believed in me and made me believe in myself. I am so grateful. I cannot say thank you enough, from the bottom of my heart for helping me reach my goals"

Preparing for the examinations

The Level 2 and 3 Applied Science programmes include examinations, which the learner must pass.

The Science and Health and Social Care team organise a comprehensive mock examination programme to support you, and have special Exam Preparation events and revision days to ensure you have the maximum opportunity to be successful.

The team also include workshop on managing exam anxiety and revision techniques.



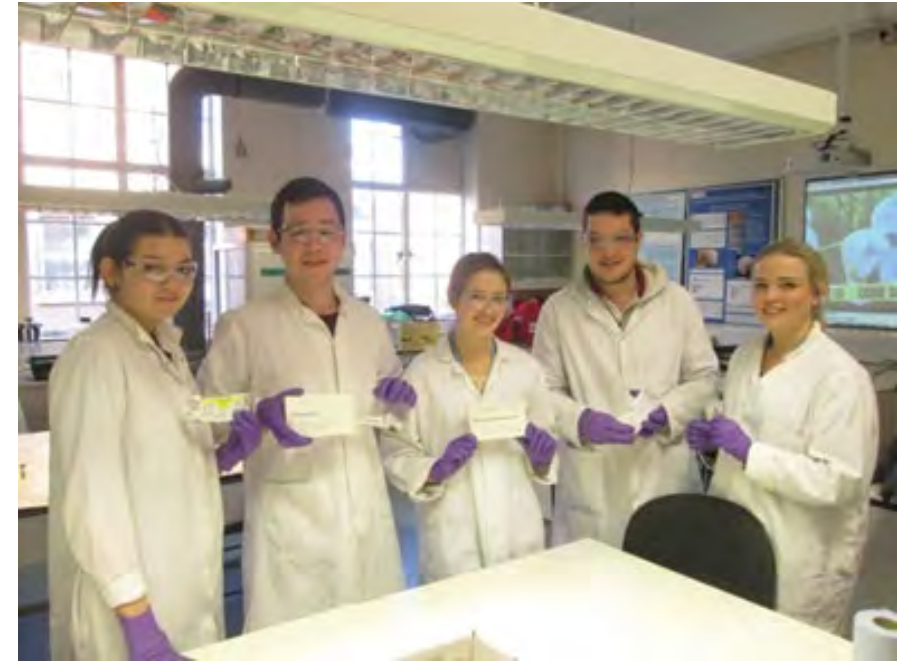
Enrichment

Alongside taught lessons learners are given the opportunity to explore local Universities and career opportunities.

University of Suffolk visit



Anglia Ruskin University visit – fingerprints analysis



Enrichment

University Campus Suffolk Science visit



Anglia Ruskin University Forensic Taster Day

Clothing analysis activity



Taking Science out of the classroom!

Minsmere Nature Reserve



Preparing for the next step!



Our annual **University and Employment Preparation Event** simulates the selection procedures used by Universities and employers.

You will be interviewed by representatives from Universities, take part in mini speed interviews, assessed discussions and complete Numeracy and Literacy assessments.

One learnersaid: *'I have received conditional offers from all of my university choices and am eager to start my next chapter. I cannot commend my tutors and the other helpful staff at Colchester institute enough for getting me to this stage in my life'* **Level 3 Year 2 learner**



Where do our Science learners go?

Learners predominantly progress to Higher Education

Employment

Police Service Emergency Call Handler

Police Constable Training

Phlebotomist

Higher Education

Biochemistry

Microbiology

Chemistry

Psychology

Higher Education

Occupational Therapy

Biomolecular Science

Politics and International Relations

Sport and Exercise Science

Computer Science

Biomedical Science

Paramedic Science

Forensic Science

Crime and Investigative Studies

Forensic Psychology

Physiotherapy

Marine Biology

What our learners say

“Just thought I’d let you know that I’ve started university and have now been doing two weeks of lectures. I’m enjoying it so much so far as we’re covering cell biology, integrative biochemistry, human anatomy and physiology, and professional practice: crime scene to court. I’m looking forward to being here for the next few years and I’m very glad you recommended Lincoln uni for Forensic Science!”

“I just wanted to say thank you to you directly. I have really enjoyed the course and am so grateful for all of the help you've given me. You have been massively inspirational, particularly for me wanting to go into anthropology in the future. It's really nice to see people, especially women who have succeeded in that kind of career. I just hope that I can do the same.”

My View...



**Cameron
Rushen**

“ What I like the most is learning about the forensic science side of science. It’s very enjoyable to learn and to meet new faces with the same passion for science as you. ”

Course:
Forensic and Criminal
Investigation Level 3
Progressed from:
Chelmer Valley High School



**Jessica
Tassier-Gotts**

This course made me fall in love with science. The tutors provide maximum support. Each piece of work we do is a challenge but completing them is so rewarding.

Course:
Applied Science Level 3
Progressed from:
The Gilbert School



What our learners say

“Thank you so much for the last two years; you have prepared us all so so well for uni with everything you taught us all & I appreciate it still to this day :) PS If you ever need an ex student to come in and rave about how much they loved the college & the science lessons, count me in!”

“I want to say a massive Thank you, I have enjoyed Forensics so much and it’s made me realise exactly what I want to do with my life.”

*“**** is absolutely loving the course (as I’m sure you know). Can I also take this opportunity to thank you for all your help and support with ****, she has so enjoyed Forensics and it’s been lovely to see her happily working hard. She will miss you all when she goes off to Uni.” Parent comment*

“I just wanted to say a BIG thank you for your help over the last two years with everything. I have really enjoyed this course and I am very grateful for all the knowledge you have provided me with which I will take away with me. Even though I’m going to be a paramedic I will still always have an interest in forensics (especially anthropology which was my favourite) thanks to your brilliant teaching.”

What do I need to have for studying?

Technology at home – it would be extremely useful to have access to a computer or tablet that is capable of accessing the college Moodle pages, and accessing video calls such as Zoom.

Work storage – We recommend storing your work digitally in several locations for security. Learners are allocated an area on the college network to store their work, but you should have another online storage option, for example Microsoft Onedrive, Google drive or Dropbox. All these cloud storage services have free options. It is important to note computer failure is not an accepted reason for non-submission of work.

Study Materials at College – At college a minimum is paper, file/folder, pens, pencils and for Level 3 a calculator. Preferred is a laptop or tablet to allow notes to be accessible and you can then manipulate for revision activities.

Forensic science crime scene examination suit– Forensic Science learners may be required to purchase an exclusion suit for crime scene exercises – approx cost £10.

What do I need to do next? Q&A Session:

On Monday 29th and Tuesday 30th June, we are holding virtual Q&A sessions via email. If you have any questions or concerns about your course, please send us an email between 1pm and 4pm on Monday or Tuesday and we will reply to your queries.

Please email us on:

suzanne.mckay@colchester.ac.uk and gary.silkstone@colchester.ac.uk

We look forward to hearing from you!