

Programme Specification

HND Applied Sciences (Chemistry)

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| 1 | Key Dates | Date of Production: | Latest Revision Date: |
| | | April 2022 | N/A |
| 2 | School | Science | |
| | Department | Health Sciences, Meditech and Technology | |
| 3 | Awarding Organisation | Pearson | |
| 4 | Teaching Institution | Bradford College | |
| 5 | Precise title of the final award | Pearson BTEC Level 5 Higher National Diploma in Applied Sciences (Chemistry) | |
| 6 | Programme title | Higher National Diploma in Applied Sciences (Chemistry) | |
| 7 | Details of Accreditation | Pearson/BTEC Regulated Qualifications Framework (RQF) Applied Sciences Specification - September 2019 | |
| 8 | FHEQ Level <i>(does not apply to HNC)</i> | Level 5 | |
| 9 | UCAS Code | | |
| 10 | Mode of Attendance and normal duration of the award <i>[full-time or part-time] 1 year/2 years</i> | Full-time: 2 Years Part-time: 4 Years | |
| 11 | Relevant QAA Subject Benchmark Statements | <p>Subject benchmark statements (although not specifically applicable to Higher Nationals provision) provide a means for the academic community to describe the nature and characteristics of programmes in a specific subject or subject area. They also represent general expectations about standards for the award of qualifications at a given level in terms of the attributes and capabilities that those possessing qualifications should have demonstrated.</p> <p>Pearson BTEC Higher National qualifications are designated higher education qualifications in the UK. They are aligned to the Framework for Higher Education Qualifications (FHEQ) in England, Wales and Northern Ireland, and Quality Assurance Agency (QAA) Subject Benchmark Statements.</p> | |

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| | | The programme learning outcomes mentioned below have been informed by the QAA subject benchmark statement for Chemistry. |
| 12 | Criteria for Admission to the Programme | <p>For the HND programme, the entry requirements are:</p> <ul style="list-style-type: none"> ▪ BTEC Level 3 qualification in Applied Science (or a related subject) and/or a minimum of 64 UCAS points. ▪ GCE Advanced Level profile that demonstrates strong performance in a relevant subject or adequate performance in more than one GCE subject; GCSE Mathematics and English at Grades A - C /(9 to 4) or equivalent. ▪ Other related Level 3 qualifications; ▪ An Access to Higher Education Diploma awarded by an approved Further Education institution; ▪ The School of Science welcomes applications from candidates who do not meet the above criteria. Where this is the case applicants will be invited for interview at which they will be expected to provide a portfolio (either physical or digital) that demonstrates professional industry experience in a Science discipline and/or can demonstrate a strong interest in Science through extra-curricular activity, research or work experience. As part of the interview process, candidates will undertake a Science aptitude assessment along with a numeracy and literacy skills assessment. ▪ Claims for Recognition of Prior Learning (RPL) and Recognition of Prior Experiential Learning (RPEL) are welcomed by the Programme team. ▪ An international equivalent of the above. |
| 13 | Educational Aims of the Programme | <p>Pearson BTEC Higher Nationals are designed to help students secure the knowledge, skills and behaviours needed to succeed in the workplace. They represent the latest in professional standards and provide opportunities for students to develop behaviours for work, for example by undertaking an Applied Science research project, or practical laboratory work.</p> <p>The Pearson BTEC Level 5 Higher National Diploma in Applied Sciences (Chemistry) offers students a broad introduction to the subject area via a mandatory core of learning, while allowing for the acquisition of skills and experience through a range of units at Level 5 that develop subject specialisation. Students will gain a wide range of sector knowledge tied to practical skills gained in research, self-study, directed study and workplace scenarios.</p> |

Students successfully completing the Higher National Diploma in Applied Sciences (Chemistry) will be able to demonstrate a sound knowledge of the foundational concepts of Chemistry developed through hands-on practical experience. Students will have developed a range of transferable skills to ensure effective team working, to take independent initiative, organisational competence and problem-solving strategies. They will be adaptable and flexible in their approach to science, show resilience under pressure, and meet challenging targets within a given resource.

The objectives of the Pearson BTEC Higher Nationals in Applied Sciences are as follows:

- to equip students with the Applied Sciences skills, knowledge and the understanding necessary to achieve high performance in the global Applied Sciences environment.
- to provide education and training for a range of careers in Applied Sciences, including Laboratory Technician, Research Technician, Technical Support Chemist /Biologist, Quality Support Technician, Manufacturing Technician, Science Technician, Technologist, Instrumentation Technician and Product Development Technician.
- to provide insight and understanding into the diversity of roles within the Applied Sciences sector, recognising the importance of collaboration at all levels.
- to equip students with knowledge and understanding of culturally diverse organisations, cross-cultural issues, diversity and values.
- to provide opportunities for students to enter or progress in employment in the Applied Sciences, or progress to higher education qualifications such as an Honours degree in Biology, Chemistry, Environmental Sciences, Polymers or a related area.
- to provide opportunities for students to develop the skills, techniques and personal attributes essential for successful working lives.
- to support students to understand the local, regional and global context of the Applied Sciences sector and, for those students with a global outlook, to aspire to international career pathways.
- to provide students with opportunities to address contemporary Applied Science issues facing the sector, and society at large, with particular emphasis on environmental sustainability, food and nutrition and polymer recyclability.
- to provide opportunities for students to achieve a nationally-recognised professional qualification within their chosen area of specialisation.
- to offer students the chance of career progression in their chosen field, with particular emphasis on achieving management-level positions, professional recognition and beyond.
- to allow flexibility of study and to meet local or specialist needs.
- to offer a balance between employability skills and the knowledge essential for students with entrepreneurial, employment or academic aspirations.

| | <ul style="list-style-type: none"> to provide students with opportunities to engage in an industry-recognised higher apprenticeship scheme that aligns with their employer's needs and their own career aspirations. to provide students with the context in which to consider professional ethics and their relation to personal, professional and statutory responsibilities within the industry. <p>We aim to meet these objectives by:</p> <ul style="list-style-type: none"> providing a thorough grounding in Applied Sciences principles and a degree of specialism at Level 5 relating to individual professions within the Applied Sciences sector. equipping individuals with sector-relevant acumen, understanding and Applied Sciences skills for success in a range of supervisory or lower management roles in Applied Sciences. enabling progression to a university degree by supporting the development of appropriate academic study skills. | | | | | | | | | | | | | | | | | | | | |
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| 14 | <p>Programme Learning Outcomes</p> <p>On successful completion of the programme, the student will be able to demonstrate the following:</p> <table border="1"> <tr> <th colspan="2">Knowledge and Understanding</th></tr> <tr> <td>KU1</td><td>Knowledge and understanding of relevant legislation, e.g. health and safety legislation, environmental legislation, specialist/niche legislation.</td></tr> <tr> <td>KU2</td><td>Good working knowledge and understanding of health and safety practices in the sector.</td></tr> <tr> <td>KU3</td><td>Knowledge and understanding of aspects of how organisations operate within the relevant sector, in terms of their functions, working practices and how they are internally and externally regulated and managed.</td></tr> <tr> <td>KU4</td><td>Knowledge and understanding of appropriate theories, concepts and facts relevant to the chemistry sector.</td></tr> <tr> <td>KU5</td><td>Knowledge and understanding of the principles underpinning experimental and investigative techniques within the relevant sector.</td></tr> <tr> <td>KU6</td><td>Knowledge and understanding of emerging topics of importance in the relevant sector.</td></tr> <tr> <td>KU7</td><td>Knowledge and understanding of mathematical, statistical and other data analysis methods.</td></tr> <tr> <td>KU8</td><td>A good working knowledge of the information that may be gathered from use of relevant practical techniques and its limitations.</td></tr> <tr> <th colspan="2">Cognitive Skills</th></tr> </table> | Knowledge and Understanding | | KU1 | Knowledge and understanding of relevant legislation, e.g. health and safety legislation, environmental legislation, specialist/niche legislation. | KU2 | Good working knowledge and understanding of health and safety practices in the sector. | KU3 | Knowledge and understanding of aspects of how organisations operate within the relevant sector, in terms of their functions, working practices and how they are internally and externally regulated and managed. | KU4 | Knowledge and understanding of appropriate theories, concepts and facts relevant to the chemistry sector. | KU5 | Knowledge and understanding of the principles underpinning experimental and investigative techniques within the relevant sector. | KU6 | Knowledge and understanding of emerging topics of importance in the relevant sector. | KU7 | Knowledge and understanding of mathematical, statistical and other data analysis methods. | KU8 | A good working knowledge of the information that may be gathered from use of relevant practical techniques and its limitations. | Cognitive Skills | |
| Knowledge and Understanding | | | | | | | | | | | | | | | | | | | | | |
| KU1 | Knowledge and understanding of relevant legislation, e.g. health and safety legislation, environmental legislation, specialist/niche legislation. | | | | | | | | | | | | | | | | | | | | |
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| KU4 | Knowledge and understanding of appropriate theories, concepts and facts relevant to the chemistry sector. | | | | | | | | | | | | | | | | | | | | |
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| KU8 | A good working knowledge of the information that may be gathered from use of relevant practical techniques and its limitations. | | | | | | | | | | | | | | | | | | | | |
| Cognitive Skills | | | | | | | | | | | | | | | | | | | | | |

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| CS1 | Interpretation and recognition of patterns and trends in data collected from (or typical of) practical activities associated with the sector. |
| CS2 | Formulating lines of argument or solving problems by combining knowledge and understanding from different topics. |
| CS3 | Design of appropriate spreadsheets and/or production graphical representations, to support data analysis, relevant to the sector. |
| CS4 | Identifying and carrying out the appropriate calculations, relevant to sector concepts. |
| CS5 | Use of appropriate means and styles of communication in relation to the sector specific issues being addressed. |
| CS6 | Ability to select and use material from sector case studies and visits and speakers appropriately. |
| CS7 | Critical evaluation of different approaches to investigation or to problem solving. |
| CS8 | Select and use appropriate mathematical or statistical techniques in analysis of data and information relevant to the sector. |
| CS9 | Use appropriate aspects of different theories when analysing information, carrying out investigations and solving specific problems in the context of the sector. |
| CS10 | Communicate effectively in the context of the sector, using text, formatted to address task requirements. |
| CS11 | Use a form of communication other than formatted text, such as a scientific report, scientific poster, scientific essay, scientific article, leaflet, slide presentation, professional discussion, effectively and appropriately in relation to the context. |
| Applied Skills | |
| AS1 | Ability to apply concepts and principles to activities carried out within organisations in the relevant sector or to simulation of those activities. |
| AS2 | Ability to apply concepts and principles from one topic in the context of another. |
| AS3 | Ability to carry out practical work appropriate to the relevant sector independently. |
| AS4 | Ability to use appropriate mathematical, statistical and data handling techniques in the specific sector context. |
| AS5 | Ability to use procedures based on sector specific quality systems and practices. |
| AS6 | The ability to identify, source and effectively use the information that may be gained from contact (visit, speaker, fieldwork, use of specialised equipment etc.) with an organisation operating within the relevant sector. |
| Transferable Skills | |
| TS1 | Effective use of digital and library resources to investigate issues and carry out tasks related to the sector. |

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| TS2 | Use of inter-personal skills (e.g. discussions, team work, questioning techniques etc.) to maximise the depth of knowledge and understanding that may be gained when investigating a topic. |
| TS3 | Use of a consistent system of in-text citation and organisation of reference material. |
| TS4 | The ability to reflect accurately on the extent of their own knowledge. |
| TS5 | The ability to identify and critically analyse the benefits of suitable additional sources of support and information. |
| TS6 | The ability to use an evidence-based approach to justify fully investigative approaches, conclusions and outcomes of analysis. |
| TS7 | Demonstrate development of skills that will facilitate gaining placements, employment or further responsibility in an organisation within the relevant sector. |
| TS8 | Identify opportunities for further skills development, related to personal and professional goals, that may facilitate gaining significant responsibility within an employing organisation. |
| TS9 | The ability to organise significant activities appropriately into discrete tasks and to set and prioritise goals. |
| TS10 | The ability to organise time effectively to plan and undertake tasks efficiently in the context of the sector. |
| TS11 | The ability to take decisions, based on critical analysis of information from a range of appropriate sources. |

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| 15 | <p>Key Learning & Teaching Strategy Methods</p> <p>The learning and teaching strategy for the HND Applied Sciences (Chemistry) is explicitly designed to contribute to the achievement of the intended learning outcomes which are clearly expressed at programme and unit level.</p> <table border="1"> <tr> <td data-bbox="201 501 517 757">Lectures and Seminars</td><td data-bbox="517 501 1508 757">Along with workshops, these are the most common techniques used by lecturers in the Science team. They offer an opportunity to engage with the full cohort of students, where the focus is on sharing knowledge through the use of presentations. Unit tutors have extensive subject specialist knowledge and experience which is embedded into lectures and seminars to ensure that the students have up-to-date and industry specific knowledge.</td></tr> <tr> <td data-bbox="201 757 517 1200">Workshops and Labs</td><td data-bbox="517 757 1508 1200">These are used to build on knowledge shared via tutors, practical laboratory work and seminars. They allow students to experience first-hand the range of Laboratory work, tools, techniques and equipment used in industry. Teaching can be more in-depth where knowledge is applied, for example, to case studies or real-life examples. Workshops could be student-led, where students present, for example, findings from laboratory experiments or independent study. Workshops are timetabled for each unit to ensure that students are able to stretch their learning and seek additional support from teaching staff. 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This will include re-visiting and developing academic skills including academic writing, research and referencing, alongside developing key soft skills.</td></tr> <tr> <td data-bbox="201 1608 517 2042">Virtual Learning Environments (VLEs)</td><td data-bbox="517 1608 1508 2042">These are invaluable to students studying on a face-to-face programme. Used effectively, VLEs not only provide a repository for taught material such as presentation slides or handouts, but could be used to set formative tasks such as quizzes. Further reading is located on the VLE, along with a copy of the programme documents, such as the handbook and assessment timetable. The subject specialist librarian regularly accesses and updates VLE pages to ensure that the most relevant and up to date journals and e-books are linked and students have access to them. 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| Work Based Learning | <p>The Applied Science teaching team works closely with a number of industry partners to ensure that academic content is closely linked to the world of work. This adds realism and provides students with an opportunity to link theory to practice.</p> <p>Each student will carry out practical laboratory experiments, investigations and research as part of the programme. Where possible, this will be aligned with practical work within the industry. An industry partner may provide site visits, support and advice during the practical stage.</p> <p>Although work placements are not mandatory on the programme, students will be encouraged to undertake industry work placements throughout their programme to enrich the skills and knowledge gained and develop contacts in a range of industries.</p> |
| Guest Speakers | <p>A programme of events has been developed where experts from industry or visiting academics in the subject area will present to students. The Applied Sciences team runs a series of 'Sci Talks' where industry specialists have visited the College to speak with students, local employers and College stakeholders.</p> <p>The School of Science will hold an annual Student Conference. This features talks from alumni who would be working successfully in industry.</p> <p>The objective is to make the most effective use of an expert's knowledge and skill by adding value to the teaching and learning experience.</p> |
| Field Trips | <p>Effectively planned field trips, which have a direct relevance to the syllabus, add value to the learning experience. The Applied Science team plans a range of visits to conferences, seminars and events during the academic year.</p> |
| <p>The learning and teaching strategy is designed to supplement the students' existing knowledge and to encourage their acquisition of new subject knowledge, while supporting them in the move towards a greater degree of independence and self-direction.</p> <p>All students have access to College library/learning centre resources including Maths and English Language workshops.</p> <p>Through lectures, students are encouraged to develop the understanding of the concepts, theories and principles prior to application. Students will develop skills in listening and selective note taking and appreciate how information is structured and presented.</p> | |

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| 16 | <p>Key Assessment Strategy/Methods</p> <p>The programme assessment strategy was developed with reference to the College's HE Learning, Teaching and Assessment Strategy. The assessment process for the HND Applied Sciences (Chemistry) programme reflects both the aims and learning objectives of the programme and establishes clear links with the underlying philosophy of the learning and teaching strategy. This requires the use of a wide range of assessment methods involving an appropriate balance between formative and summative methods.</p> <p>Formative assessment is primarily developmental in nature and designed to give feedback to students on their performance and progress. Assessment designed formatively should develop and consolidate knowledge, understanding, skills and competencies. It is a key part of the learning process and can enhance learning and contribute to raising standards. Through formative assessment, tutors can identify students' differing learning needs early on in the programme and so make timely corrective interventions. Tutors can also reflect on the results of formative assessment to measure how effective the planned teaching and learning is at delivering the syllabus. Each student should receive one set of written formative feedback. This type of formative assessment encourages reflective practice, develops academic and personal skills and builds student confidence. Formative assessment is in evidence in all units throughout the programme.</p> <p>Summative assessment is where students are provided with the assignment grades contributing towards the overall unit grade. For summative assessment to be effective it should also give students additional formative feedback to support ongoing development and improvement in subsequent assignments. All formative assessment feeds directly into the summative assessment for each unit and lays the foundations from which students develop the necessary knowledge and skills required for the summative assessment.</p> <p>Each unit has a set of assessment criteria which the student must demonstrate to achieve a pass grade. Students will undertake one or more pieces of assessment for each unit and will need to show the assessment criteria for the unit have been met. Some of the assessments have elements of negotiation where the student can make decisions and agree with the tutor what will be undertaken for assessment. This ensures that the work has personal and professional relevance.</p> <p>Underpinning assessment are the following principles:</p> <ul style="list-style-type: none"> ▪ Assessment is valid - in that it tests an appropriate skill or ability. ▪ Assessment is reliable - in that the same result would be achieved, if repeated. ▪ Assessment is relevant - in that it is set in the context of the practices and needs of industry. ▪ Assessment forms part of a student's learning - in that assessment is not seen as simply a measurement tool but as a key part of the learning process and, through formative feedback, a means of supporting progression. <p>For each year of study, the programme team will monitor summative assessment requirements across units in order to, where possible, smooth student workload.</p> |
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Each unit in the programme has a set of assessment criteria which the student must demonstrate to pass the unit. Students will undertake one or more pieces of assessment for each unit and will need to show the assessment criteria for the unit have been met. Some of the assessments have elements of negotiation where the student can make decisions and agree with the tutor what will be undertaken for assessment. This ensures that the work has personal and professional relevance.

Assessments may include elements of:

- practical assessments;
- portfolios of evidence;
- 'in class' tests;
- lab work;
- case studies;
- examinations, both open and closed book;
- reflective activities where you look back over your experiences, analyse them with the assistance of relevant theory and reflective tools, and learn from the experience;
- online discussions that you have had with your peers, tutors and invited contributors to the programme;
- oral and written reports;
- journals, blogs and log books;
- plans (e.g., action plans, plans for your group activities);
- presentations; and
- time-constrained tasks.

All written work related to assessments will be submitted via Turnitin to ensure authentication of students' work.

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| 17 | Programme Units | | | | | |
| | Stage 1 (total 120 credits) | | | | | |
| | Unit number | Pearson code | Title | Credits | Level | Mandatory Core or Centre Selected Specialist Unit |
| | 1 | A/617/5358 | Fundamentals of Laboratory Techniques | 15 | 4 | Mandatory Core |
| | 2 | F/617/5359 | Scientific Data Handling Approaches and Techniques | 15 | 4 | Mandatory Core |
| | 3 | T/617/5360 | Regulation and Quality in the Applied Sciences (Pearson-set) | 15 | 4 | Mandatory Core |
| | 7 | L/617/5364 | Inorganic Chemistry | 15 | 4 | Mandatory Specialist |
| | 8 | R/617/5365 | Organic Chemistry | 15 | 4 | Mandatory Specialist |
| | 9 | Y/617/5366 | Physical Chemistry | 15 | 4 | Mandatory Specialist |
| | 17 | T/617/5374 | Fundamentals of Biochemistry | 15 | 4 | Centre Selected Specialist Unit |
| 26 | Y/617/5383 | Managing Scientific Projects | 15 | 4 | Centre Selected Specialist Unit | |

| Stage 2 (total 120 credits) | | | | | |
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| 27 | D/617/5384 | Analysis of Scientific Data and Information | 15 | 5 | Mandatory Core |
| 28 | H/617/5385 | Applied Sciences Research Project (Pearson-set) | 30 | 5 | Mandatory Core |
| 36 | L/617/5395 | Aromatic and Carbonyl Compounds | 15 | 5 | Mandatory Specialist |
| 37 | R/617/5396 | Solid State and Transition Metal Chemistry | 15 | 5 | Mandatory Specialist |
| 51 | L/617/5431 | Specialist Scientific Techniques and Experimentation | 15 | 5 | Centre Selected Specialist Unit |
| 61 | R/617/5446 | Science Laboratory Management | 15 | 5 | Centre Selected Specialist Unit |
| 65 | F/618/0058 | Further Analytical Chemistry | 15 | 5 | Mandatory Specialist |

18 Programme Structure

The units on the HND Applied Sciences (Chemistry) are sequenced to provide students with a coherent learning experience which will satisfy the programme aims and outcomes and enhance student retention. The structure will also ensure a practicable, even spread of student assessments throughout the academic year.

The units on this programme have been designed from a learning time perspective. A 15-credit point unit is equivalent to approximately 150 learning hours, of which 60 hours will be guided learning hours (i.e. when your tutor is present in a lecture or workshop).

The HND programme has a total value of 240 credits and is equivalent to approximately 2400 hours total learning time (TLT). Within this learning time - which is time taken by students to complete the learning outcomes of each unit determined by the assessment criteria - there are Guided Learning Hours (GLHs). These are defined as time when your tutor is present and giving specific guidance (e.g.: lectures, tutorials, workshops). On this programme, there are approximately 960 GLHs.

HND Applied Sciences (Chemistry) - Full-Time

| Full-Time - Year 1 | |
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| Semester 1 | Semester 2 |
| Unit 1 Fundamentals of Laboratory Techniques | Unit 3: Regulation and Quality in the Applied Sciences (Pearson-set) |
| Unit 2: Scientific Data Handling Approaches and Techniques | Unit 26: Managing Scientific Projects |
| Unit 7: Inorganic Chemistry | Unit 9: Physical Chemistry |
| Unit 8: Organic Chemistry | Unit 17: Fundamentals of Biochemistry |
| Full-Time - Year 2 | |
| Semester 1 | Semester 2 |
| Unit 27: Analysis of Scientific Data and Information | Unit 61: Science Laboratory Management |
| Unit 36: Aromatic and Carbonyl Compounds | Unit 51: Specialist Scientific Techniques and Experimentation |
| Unit 65: Further Analytical Chemistry | Unit 37: Solid State and Transition Metal Chemistry |
| Unit 28: Applied Sciences Research Project (Pearson-set) | |

HND Applied Sciences (Chemistry) - Part-Time

| Part-Time - Year 1 | |
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| Semester 1 | Semester 2 |
| Unit 1: Fundamentals of Laboratory Techniques | Unit 3: Regulation and Quality in the Applied Sciences (Pearson-set) |
| Unit 2: Scientific Data Handling Approaches and Techniques | Unit 26: Managing Scientific Projects |

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| | Part-Time - Year 2 | |
| | Semester 1 | Semester 2 |
| | Unit 7: Inorganic Chemistry | Unit 9: Physical Chemistry |
| | Unit 8: Organic Chemistry | Unit 17: Fundamentals of Biochemistry |
| | Part-Time - Year 3 | |
| | Semester 1 | Semester 2 |
| | Unit 27: Analysis of Scientific Data and Information | Unit 61: Science Laboratory Management |
| | Unit 65: Further Analytical Chemistry | Unit 51: Specialist Scientific Techniques and Experimentation |
| | Part-Time - Year 4 | |
| | Semester 1 | Semester 2 |
| | Unit 36: Aromatic and Carbonyl Compounds | Unit 37: Solid State and Transition Metal Chemistry |
| | Unit 28: Applied Sciences Research Project (Pearson-set) | |
| 19 | Support for Students and Their Learning | |
| <p>Student progression on the programme is supported by subject tutors and central College services.</p> <p>College</p> <p>The College employs dedicated staff to offer specialist advice and assistance for all students:</p> <p>Bradford Student Health Service is a dedicated NHS GP service specialising in Student Health. The Student Health Service provides a confidential and comprehensive service of health care with access to specialist services. Students who live in the practice area can register with one of the doctors and make full use of the service.</p> <p>Additional Learning Support (Disabilities and Difficulties) look after learning support needs of all students with disabilities or difficulties in College, irrespective of their programme of study. They provide support and guidance for students whilst developing close links with programme tutors to ensure that the support put in place is appropriate to the students' individual needs and the requirements of the programme.</p> <p>Library resources are available on the second floor of the David Hockney Building with library staff available to give assistance, if required.</p> <p>Technology and Media Services are also located on the second floor of the David Hockney Building. Various pieces of IT equipment can be accessed to enhance the learning experience.</p> | | |

There are also other areas of personal interest to students, for example, the gym in the Trinity Green Building.

Programme

The programme is managed by a Programme Leader who will aim to ensure that the student meets the programme learning outcomes alongside the awarding body expectations for quality. Teaching is delivered by an experienced team of lecturers, each of whom has expertise in a range of specialist subjects.

Induction week comprises of a full programme of events designed to welcome to students to the College, and make them familiar with their new surroundings. The process of establishing effective relationships between students and the teaching team begins at this point and activities are geared towards establishing and promoting a cohort identity. All students are provided with a student and programme handbook and supported in gaining access to on-line resources.

Extensive use is made of a VLE. This has comprehensive support material at programme and unit level, as well as additional learning resources and links to off-site study support. Independent learning is encouraged through the use of student forums, blogs and message boards. These are also used to provide students with regular and timely formative feedback.

At the start of each academic year, all students undertake a numeracy and literacy skills test. The results of these are analysed and allow for student specific additional support to be offered where required. Throughout the academic year all students have timetabled academic support sessions. These sessions support students with the transition to Level 4 and then Level 5 study, and prepare them for progression to Level 6, enabling them to align their skills with the academic rigour associated with Higher Education.

The Science team's laboratories are equipped with all the technical tools, equipment and materials needed to reflect the standards required by industry. All the practical and laboratory equipment is reviewed annually.

A tutorial system is in place that provides academic and pastoral support to all students. Staff are available on both a walk-in and by-appointment basis. Staff are also contactable via e-mail, the VLE and through MS Teams. A Personal Tutor is assigned to each student to provide pastoral care and an opportunity to discuss any issues that may arise throughout the academic year.

The College has extensive library facilities including a wide range of on-line resources. Library resources are reviewed by the School on an annual basis. Group study areas are available within the library.

The Teaching Team operates a series of additional workshops throughout the academic year. A specialist tutor is available at each of these to offer support and guidance to students.

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| 20 | <p>Distinctive Features</p> <p>The HND Applied Sciences (Chemistry) is a work-related qualification for students taking their first steps into employment, or for those already in employment and seeking career development opportunities. The programme will support progression into the workplace either directly or via enabling further study at Level 6 and is designed to meet employer's needs. Pearson BTEC Higher National qualifications are widely recognised by industry as the principal vocational qualification at Levels 4 and 5. When developing the programme, Pearson collaborated with a wide range of students, employers, higher education providers, colleges and subject experts to ensure that the new qualification meets their needs and expectations. There is a great emphasis on employer engagement and work readiness.</p> <p>The HND Applied Sciences (Chemistry) will enable possible employment as:</p> <p>Technician Scientist, Technician Scientist, Laboratory Technician, Research Technician, Quality Support Technician, Technologist, Development Technician, Manufacturing Technician, Science Technician.</p> |
| 21 | <p>Regulation of Assessment</p> <p>Assessment regulations are as published by the College and are in accordance with guidance provided by Pearson/BTEC. Regulations relevant to this programme of study are published in the programme handbook.</p> |
| 22 | <p>Indicators of Quality and Standards</p> <p>Annual review and monitoring will be conducted in line with College processes and Pearson requirements. Measures are in place to ensure robust internal and external quality assurance. These quality-related processes are outlined below:</p> <p>Programme committee meetings and annual monitoring events which are attended by student representatives.</p> <p>Unit reviews which are completed by students.</p> <p>Moodle and MS Teams will host chatrooms and forums so that students can liaise regularly with one another as well as tutors.</p> <p>The delivery of the HND Applied Sciences (Chemistry) will be reviewed annually via production of an Annual Monitoring Report and, on a much more regular basis, through meetings of the programme delivery team.</p> <p>The programme will also be subject to external quality assurance processes such as external examiner review.</p> |

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| z | <p>The Role of the Awarding Body</p> <p>As the awarding body, Pearson provides a programme of BTEC Higher Nationals offering specialist vocational study at Levels 4 and 5 which reflects the requirement of professional organisations and meets the National Occupational Standards for each sector or industry.</p> <p>BTEC Higher Nationals are directly available from Pearson as RQF qualifications. To offer BTEC Higher Nationals, colleges must have both Centre and Qualification Approval.</p> <p>Pearson operates a quality assurance system for all BTEC Higher National programmes which ensures that centres have effective quality assurance processes to review programme delivery and that the outcomes of assessment are to national standards.</p> |
| 24 | <p>External Examination</p> <p>Pearson/BTEC assures itself of the standard of provision offered at the College through a series of quality assurance activities, including external examining.</p> <p>An independent academic, appointed by Pearson/BTEC, visits the College and assures themselves and Pearson/BTEC (via an annual report) of the quality of facilities, academic delivery and student achievement against described standards.</p> |

Map of Outcomes to Units

| | Knowledge and Understanding | | | | | | | | Cognitive Skills | | | | | | | | | | | Applied Skills | | | | | | Transferable Skills | | | | | | | | | | |
|--|-----------------------------|---|---|---|---|---|---|---|------------------|---|---|---|---|---|---|---|---|----|----|----------------|---|---|---|---|---|---------------------|---|---|---|---|---|---|---|---|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Unit 1: Fundamentals of Laboratory Techniques | | x | x | | x | | x | | x | | x | x | x | | | x | | | x | | | x | x | x | | x | | x | x | | | x | x | | | |
| Unit 2: Scientific Data Handling Approaches and Techniques | | | | | | | x | | x | | x | x | | | | x | | | | | x | | | | | | | | x | | | | | | | |
| Unit 3: Regulation and Quality in the Applied Sciences (Pearson-set) | x | x | x | | | | | | | | | x | | x | | | | | x | | | | | x | x | x | x | | | x | x | | x | x | x | |
| Unit 7: Inorganic Chemistry | | x | | x | | | | | | | | | | | | | | x | x | | | x | | | | | | x | | | | | | | | |
| Unit 8: Organic Chemistry | | x | | x | x | | | | | | | | | | | | | x | x | | | x | | | | x | | x | | | | | | | | |
| Unit 9: Physical Chemistry | | x | | x | x | | x | | | | x | x | | | | x | | x | x | | x | x | | | | | | x | | | | | | | | |
| Unit 17: Fundamentals of Biochemistry | | | | x | x | | x | | x | | | | x | | | | | x | | | x | x | x | | | x | | x | | | | | | | | |
| Unit 26: Managing Scientific Projects | | | | x | x | | | | x | x | | | x | | x | x | | | x | x | x | x | | | x | x | x | | x | x | x | | x | x | x | |
| Unit 27: Analysis of Scientific Data and Information | | | | | | | x | | x | | x | x | x | | | x | | x | x | | | | x | | | x | | x | | | | | | | | |

| | Knowledge and Understanding | | | | | | | | Cognitive Skills | | | | | | | | | | | Applied Skills | | | | | | Transferable Skills | | | | | | | | | | |
|---|-----------------------------|---|---|---|---|---|---|---|------------------|---|---|---|---|---|---|---|---|----|----|----------------|---|---|---|---|---|---------------------|---|---|---|---|---|---|---|---|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Unit 28: Applied Sciences Research Project (Pearson-set) | | x | | x | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | x | x | x | x | x |
| Unit 36: Aromatic and Carbonyl Compounds | | x | | x | x | | | | | x | | | x | | | | x | x | x | | x | x | | | | x | | x | | | x | x | | x | x | x |
| Unit 37: Solid State and Transition Metal Chemistry | | x | | x | x | | x | | x | x | | x | x | | | | x | x | x | | | | | | | x | | x | | | x | x | | x | x | x |
| Unit 51: Specialist Scientific Techniques and Experimentation | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Unit 61: Science Laboratory Management | x | x | x | x | | | | | | x | | | x | x | | | x | x | | x | x | | | x | x | x | x | x | | | x | x | | x | x | x |
| Unit 65: Further Analytical Chemistry | | | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | x | x | x | | x | | | x | x | x | x | | x | x | x | x |