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| **Please note:** This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she passes the programme.More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in the module guides. The accuracy of the information contained in this specification is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.The development of this Foundation Degree (Fd) has arisen from an evaluation of industry requirements under the HEFCE funded Working Higher initiative. A consortium of five HEI partners are working together to create a Foundation Degree Framework covering the bioscience, chemical, nuclear, polymer and refining & petrochemical industries. Kent is responsible for leading the Fd development for the biosciences sector.The Applied Bioscience Technology Fd has thus been developed in close consultation with employers and utilising the engagement of a 0.5 FTE Industry Champion over two years. This will be a three year part-time programme with a heavy emphasis on work-based learning with the vast majority of knowledge based materials being delivered through an e-learning platform. |

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| **Applied Bioscience Technology Foundation Degree** |

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| 1. **Awarding Institution/Body**
 | University of Kent |
| 1. **Teaching Institution**
 | The Medway School of Pharmacy |
| 1. **Teaching Site**
 | Medway |
| 1. **Programme accredited by**
 | N/A |
| 1. **Final Award**
 | Foundation Degree |
| 1. **Programme**
 | Applied Bioscience Technology |
| 1. **UCAS Code (or other code)**
 | C191 |
| 1. **Relevant QAA subject benchmarking group(s)**
 | Biosciences (2007) - [QAA 205 12/07]. Foundation Degree Qualification (2010) -[QAA 345 05/10]. |
| 1. **Date of production/revision**
 | October 2011 |
| 1. **Applicable cohort(s)**
 | From academic session 2011-12 {Jan/Feb 2012 start} |

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| 1. **Educational Aims of the Programme** These are related to the subject benchmarking statement for Biosciences as well as the generic aims highlighted by the Foundation Degree benchmark.

**The programme aims to:** |
| 1. Instil in students a sense of enthusiasm for learning which may lead to continuing professional development or pathways for lifelong learning.
2. Produce graduates equipped with the skills to play an enhanced role in the Biosciences Industry, nationally.
3. Educate students in the theoretical (subject specific knowledge) and practical (laboratory based) aspects of the biological sciences which relate to current and future employment needs.
4. Provide students with the skills to adapt and respond positively to new developments in the workplace.
5. Develop the critical, analytical, problem based learning skills required by the students in the workplace.
6. Develop student’s competences in a broad range of areas relevant to their current and future employment.
7. Enhance and develop the student’s interpersonal skills.
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| **Programme Outcomes**The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the subject benchmarking statement for Biosciences *(****SB****).*The programme outcomes also relate to the Foundation Degree benchmark (**FdB**). For more information on the skills provided by individual modules and on the specific learning outcomes see the module mapping. |
| **Knowledge and Understanding****A. Knowledge and Understanding of:** | **Teaching/learning and assessment methods and strategies used to enable outcomes to be achieved and demonstrated** |
| 1. A broad based core covering the major elements; processes & mechanisms of life, from molecular to cellular, and from organism to community. Together with specialised in-depth study (often career related) of some aspects of the subject areas. (SB 3.2)
2. Understanding of information and data, their setting within a theoretical framework, accompanied by critical analysis and assessment to enable understanding of the subject area. (SB 3.2 & 3.3)
3. Familiarity with terminology, nomenclature and classification systems. (SB 3.2)
4. Methods of acquiring, interpreting and critically analysing biological information through the use of texts, original papers, reports and data sets. (SB 3.2, 3.3 & 3.7)
5. Knowledge of a range of communication techniques and methodologies relevant to the particular discipline and the workplace. (SB 3.2 & 3.8)
6. Engagement with some of the current developments in the biosciences and their applications, and the philosophical and ethical issues involved. (SB 3.2 & 3.5)
7. The capacity to give a clear and accurate account of a subject, marshal arguments in a mature way and engage in debate & dialogue both with specialists and non-specialists, using appropriate scientific language. (SB 3.3 & 3.8)
8. The ability to think independently, set tasks and solve problems. (SB 3.3)
9. Understanding the applicability of the biosciences to the careers of the learners. (SB 3.2)
10. Successful application in the workplace of the range of knowledge and skills learnt through the programme. (FdB Item 42)
11. The ability to apply underlying concepts and principles outside the context in which they were first studied, and the application of those principles in a work context. (FdB Item 42)
12. An ability to evaluate critically the appropriateness of different approaches to solving problems in their field of study and apply these in a work context. (FdB Item 42)
 | **Teaching and learning**Acquisition of outcomes 1-12 will be achieved primarily through extensive use of e-learning materials including: Theoretical content in the form of storyboards; video; links to related reading; and activities with feedback provided. Students will be required to produce a Reflective Portfolio on-line which will act as a record of all learning. The emphasis of the programme is to link the knowledge and learning to work-based learning and employment wherever possible. Problem solving scenarios will allow students to develop skills in applying knowledge from different parts of the programme and the work place to complex situations. Students will be expected to gain experience of working as a part of a team in the workplace and to effectively utilise their skills and knowledge in this setting. The Company Based Project provides an extended period of time to investigate an aspect of science or technology in detail using the knowledge and skills acquired during the degree programme.**Assessment**Formative assessment will include: progress tests; reports; portfolio entries; short essays; analysis of case studies; and presentations. Progress and attainment of learning outcomes will be determined by a variety of summative assessments including: unseen written examinations, some as Multiple Choice Questions (MCQ’s); reports including the Company Based Project; essays; portfolio entries; case studies; and presentations. |
| **Skills and Other Attributes**B. Intellectual Skills:1. The ability to recognise and apply subject-specific theories, paradigms, concepts or principles. (SB 3.5)
2. The ability to synthesize, analyze and summarise information critically, including published research or reports. (SB 3.3, 3.5, 3.7 & 3.8)
3. The ability to obtain and integrate several lines of subject-specific evidence to formulate and test hypotheses. (SB 3.5)
4. The application of subject knowledge and understanding to address both familiar and unfamiliar problems. (SB 3.5)
5. The ability to recognise moral & ethical issues together with the appreciation of professional codes of conduct. (SB 3.2 & 3.5)
6. An ability to develop and utilise effective project management skills. (SB 3.9 & 3.10)
7. The ability to initiate & undertake critical analysis of information, and to propose solutions to problems arising from that analysis in their field of study and in a work context. (FdB Item 42)
 | **Teaching and learning**Whilst most material will be in the form of directed self-learning it is essential that the student has regular contact on-line and by telephone with the tutors. There will be ongoing feedback provided for the developing Reflective Portfolio. In addition it is critical that the supervisor in the workplace is able to provide regular contact and support for the student. This allows the opportunity for students to apply their knowledge and understanding in a work-based setting. It also allows for the development of information transfer and effective communication skills.The programme allows students to develop enhanced problem solving skills as they progress to later years. Feedback sessions provide the opportunity for discussion around the approaches to problem solving in specific areas. **Assessment**Formative assessment will include: analysis of case studies; reports; portfolio entries; short essays; literature reviews; progress tests; and presentations. Progress and attainment of learning outcomes will be determined by a variety of summative assessments including: reports, especially the Company Based Project; essays; portfolio entries; case studies; presentations; and unseen written examinations, some as Multiple Choice Questions (MCQ’s). |
| **C. Practical Skills**1. Undertake sufficient practical work to ensure competence in the basic experimental skills appropriate to the discipline under study. (SB 3.6)
2. The ability to design, plan, conduct and report on investigations, which may involve primary or secondary data, arising from individual or group projects. (SB 3.6, 3.7 & 3.8)
3. The ability to obtain, record, collate and analyze data using appropriate techniques in their work discipline. (SB 3.6-3.10)
4. Undertake an extensive work based project in a responsible, safe and ethical manner. Paying due attention to relevant health & safety guidelines/procedures. (SB 3.6-3.10)
5. Undertake training, develop existing skills, and acquire new competences that will enable them to assume responsibility within their organisation. (FdB Item 42)
 | **Teaching and learning**This includes "hands-on" practical skills but also broader skills including: numeracy; IT and communication. Practical experience in the work place will be essential to develop and enhance these skills. A summer school in both the first and second year of the programme will be used to provide more "hands-on" techniques/skills that are not available at work or locally.**Assessment**A number of methods will be used for both formative and summative assessment of these more practical skills including: practical tests or assessment at the University or in the work place; reports or other documents such as Standard Operating Procedures (SOP's); oral plus written presentations; project plans; and the Company Based Project Report. |
| D. Transferable Skills 1. The ability to use the internet and other electronic sources critically as a means of communication and a source of information. (SB 3.4 & 3.8)
2. A working knowledge of how to cite and reference work in an appropriate manner, including the avoidance of plagiarism. (SB 3.4 & 3.8)
3. An ability to effectively communicate information, arguments and analysis, in a variety of forms, to specialist and non-specialist audiences. (FdB 3.4 & 3.8)
4. Develop numeracy skills and have a working appreciation of the terms: validity; accuracy; calibration; precision; replicability. (SB 3.4 & 3.7)
5. Extensive experience of solving problems by a variety of methods, including the use of computers. (SB 3.7)
6. An ability to recognise and respect the views and opinions of other team members and develop good negotiating skills. (SB 3.9)
7. The ability to evaluate ones performance as an individual & team member as well as being able to assess the performance of others. (SB 3.9)
8. Develop an adaptable, flexible and effective approach to study and work. (SB 3.10)
9. Develop the qualities and skills necessary for employment and progression requiring the exercise of personal responsibility and decision making. (FdB Item 42)
 | **Teaching and learning**Transferable skills will be incorporated within modules, commencing in year 1 of the programme and a becoming enhanced in the later years. Students will learn by doing with an emphasis on work-based learning. There will be many opportunities for problem solving and presentations and reports will provide the opportunity to enhance communication skills.**Assessment**Again a number of methods will be used for formative and summative assessment including: presentations; case studies; portfolio entries; project plans; and the Company Based Project Report. |
| **For more information on which modules provide which skills, see the module mapping** |

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| 1. **Programme Structures and Requirements, Levels, Modules, Credits and Awards**

The programme will be studied over three years part time. It will comprise 120 credits at Level 4 (Certificate level) and 120 credits at Level 5 (Intermediate level). Each year consists of modules (see below) which all have specified learning outcomes and each module carries a specific number of credits. One credit corresponds to approximately 10 hours of “learning time” and one 15 credit module therefore represents approximately 150 hours of learning endeavour and assessment. These hours include all directed e-learning, appropriate work based learning and all private study time. It is anticipated that students will already have or will be able to attain some of the laboratory/industry skills in the work place and systems will ensure that this can be recognised as Accredited Prior (Experiential) Learning (AP(E)L). Where these skills can't be covered in the work place then it is the intention to provide these through a short residential summer school at Kent University. Students must achieve the specified learning outcomes associated with a module in order to gain the credits. The structure of the programme and the modules which make it up, including their levels and credits, as well as the year of delivery are shown below and also in a diagram in Appendix 1.To be eligible for the Foundation Degree award students must obtain 240 credits of which at least 90 credits are at level I. Where the mark for the programme is > 60% but < 70% the student will be awarded a Pass with Merit, where the mark for the programme is > 70% the student will be awarded a Pass with Distinction. Those students who obtain the Foundation Degree award will be eligible to continue onto the third and final year of study for a BSc with honours degree {The School commit to working with the School of Biosciences to identify this pathway in the next 12 months}.A Certificate will be awarded where students achieve a minimum of 120 credits at C level or above. |
| **Code** | **Title** | **Level** | **Credits** | **Year(s)** |
| **Level 4 - All *Core Modules*** |
| xxx | Cell Biology | C | 15 | 1 |
| xxx | Biochemistry | C | 15 | 1 |
| xxx | Microbiology | C | 15 | 1 |
| xxx | Applied Chemistry | C | 15 | 1 |
| xxx | Human Physiology & Disease | C | 15 | 2 |
| xxx | Basic Laboratory/Industry skills | C | 15 | 1 |
| xxx | Business Improvement | C | 15 | 1/2 |
| xxx  | Metabolism and Enzymology | C | 15 | 2 |
| **Level 5 - *Core and Optional Modules (Choose 3 science based options and one business based option) {Further options may be developed and validated as the programme evolves}*** |
| xxx - opt | Infection & Immunity (Science option) | I | 15 | 3 |
| xxx - opt | Applied Microbiology (Science option) | I | 15 | 3 |
| xxx - opt | Genetics (Science option) | I | 15 | 3 |
| xxx - opt | Advanced Cell Biology (Science option) | I | 15 | 3 |
| xxx - opt | Pharmacology (Science option) | I | 15 | 3 |
| xxx - core | Advanced Laboratory/Industry skills | I | 15 | 2 |
| xxx - opt | GxP (Business option) | I | 15 | 2 |
| xxx - opt | Technology Transfer (Business option) | I | 15 | 2 |
| xxx - core | Company based Project | I | 45 | 2/3 |

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| 1. **Work-Based Learning**
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| * The character of this Foundation degree is based on the integration of employer involvement together with flexible delivery, having work-based learning at the core of the programme. Work based activities are embedded in the e-learning materials used to deliver the knowledge in the science based modules. There is a core business improvement modules together with an optional business module on a topic relevant to the business or work place. The programme also has a significant work-based project which will ideally provide business improvement(s) for the relevant company.
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| 1. **Support for Students and their Learning**
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| It is recognised that the students will need to have multiple networks of support including: Workplace Supervisor & Workplace Mentor; Programme Leader; Module Leaders. Each of these will have a specific defined role but equally allow the student to have alternative routes to access the support they require.* An induction programme will take place for all new students.
* An induction event will be carried out for all supervisors.
* A dedicated e-learning environment will be available through the University Virtual Learning Environment (VLE) - Moodle.
* Each student will have an online Reflective Portfolio including a Personal Development Plan (PDP) through myFolio which will hold all critical information. This will be evaluated at very regular intervals through module and programme learning.
* Orientation sessions at the start of each module on the programme.
* Library provision through the University of Kent at the Drill Hall Library and access to online resources.
* Laboratory and IT facilities for the summer school.
* General Regulations, Students’ Union Code of Practice, Students’ Charter (University Handbook).
* University central support services.
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| 1. **Entry Profile**

The minimum age to study a degree programme at the university is normally at least 17 years old by 20 September in the year the course begins. There is no upper age limit. |
| **Entry Route** |
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| * **Minimum requirements:**
 | * Five GCSE passes, including English Language or Use of English and mathematics at grade C or above, and at least two subjects at A2 level.
 |
| * **A levels and AS levels:**
 | * 200 points including DD at GCE A2 level for Biology and another science subject.
 |
| * **VCE A level (previously AGNVQ):**
 | * Vocational Science based A level (Double award 12 units) and a pass in an approved English Language qualification.
 |
| * **Access/Foundation Programmes:**
 | * A satisfactory pass in an approved Science Based Foundation or Access programme. Please check with the University beforehand that we will accept the Access/Foundation syllabus you took.
 |
| * **BTEC National Certificates/Diplomas:**
 | * BTEC National Certificate in Science (merit level) and a pass in an approved English language qualification
* BTEC National Diploma in Science (merit level) and a pass in an approved English language qualification.
 |
| * **International Baccalaureate**
 | * 26/30 points (12/14 at Higher). The course studied must contain a significant content of Science at the required level. Please check with the University beforehand that you have studied sufficient Science at the required level.
 |
| * **Irish Leaving Certificate:**
 | * Passes in five Higher level subjects (including two Science subjects) plus Ordinary level English grade C.
 |
| * **Scottish qualifications:**
 | * Five passes in approved subjects at Advanced Higher or Higher grade (including two Science subjects) and a pass at Intermediate 2 grade in English Language.
 |
| * **Mature applicants:**
 | * If you are a mature student without the traditional qualifications listed here, we ask you for proof of any recent study you have done or of your ability to complete a degree programme successfully.
 |
| * **Accreditation of Prior (Experiential) Learning (AP(E)L):**
 | * We will consider any evidence you have of previous study and work-based learning, and equate this to your ability to follow your proposed programme.
 |

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| **What does this programme have to offer?** |
| * This programme is unique and innovative in its structure. It has been developed with employer input in response to industry needs nationally.
* It will provide students with the opportunity to further develop their skills and knowledge that will enable them to assume responsibility within organisations.
* It will provide the student with the qualities and transferable skills to allow them to be highly effective in their work place.
* The programme will develop student skills to critically analyse complex information and propose solutions to problems in a work context.
 |
| **Personal Profile** |
| * You will be employed in a sector of the Applied Biosciences.
* You may either be a new employee with the need to develop scientific knowledge and sector skills; **or** you may be re-skilling in your workplace; **or** you may be enhancing your skills and knowledge with a view to career enhancement.
* You will have a suitable level of numeracy and communication skills and a willingness to develop these further on the programme.
* You should have a willingness to develop the skills to critically analyse work based problems and effectively propose and communicate solutions.
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| 1. **Methods for Evaluating and Enhancing the Quality and Standards of Teaching and Learning**
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| **Mechanisms for review and evaluation of teaching, learning, assessment, the curriculum and outcome standards** |
| * Student completed module and programme evaluation questionnaires.
* Annual monitoring reports (including review of progression and achievement statistics).
* Continuous monitoring of student progress and attendance.
* External examiners’ reports.
* Periodic programme reviews.
* Annual staff appraisals.
* Feedback from employer supervisors.
* Feedback from employers.
 |
| **Committees with responsibility for monitoring and evaluating quality and standards** |
| * Module team meetings.
* School of Pharmacy Learning and Teaching Board.
* Board of Examiners for School of Pharmacy.
* Faculty Learning and Teaching Committee.
* University Learning and Teaching Committee.
 |
| **Mechanisms for gaining student feedback on the quality of teaching and their learning experience** |
| * Student module/lecturer evaluations.
* Annual student surveys.
* Discussions and feedback from employer supervisors.
* Discussions and feedback from employers.
* Informal communication between students and teaching staff.
 |
| **Staff Development priorities include:** |
| * PCGHE requirements, professional body membership where appropriate.
* Mentor training for employer supervisors.
* Staff appraisal scheme.
* Attendance at employer/industry conferences.
* Staff development courses.
* Meetings of programme team.
* Study leave and sabbaticals.
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| 1. **Indicators of Quality and Standards**
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| * External examiner reports.
* Programme results and awards.
* Employer feedback.
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| The following reference points were used in creating these specifications: |
| * QAA subject benchmark for Biosciences (2007) - [QAA 205 12/07].

http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/Biosciences07.pdf* QAA Foundation Degree Qualification benchmark (2010) - [QAA 345 05/10].

http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/Foundation-degree-qualification-benchmark.pdf* QAA Higher education credit framework for England: guidance on academic credit arrangements in higher education in England (2008) - [QAA 263 08/08].

http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/creditframework.pdf* QAA Qualification Descriptors (2008) - [QAA 264 08/08].

http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf* The University Learning and Teaching Strategy.
 |

**Appendix 1**

**Applied Bioscience Technology Foundation Degree**

**Modular Framework (all modules 15 credit except Project at 60 credits)**

***Scientific knowledge Practical Skills Business Skills***

***Year 1***

Cell Biology (C)

Basic Laboratory/Industry Skills (C)

Biochemistry (C)

Microbiology (C)

Applied Chemistry(C)

Business Improvement (C)

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**Year 2**

Human Physiology & Disease (C)

Advanced Laboratory/Industry Skills (I)

Metabolism & Enzymology (C)

Optional Business Module (I)

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Company Based Project

Core (45 credits – Level I)

**Year 3**

Science Option 1 (I)

Science Option 2 (I)

Science Option 3 (I)

**Appendix 2**

**Roles and Responsibilities**

The contributions to be made in managing learning and especially work-based learning within the Foundation Degree programme will require that the roles and responsibilities of learner, programme leader, tutor, mentor and supervisor are clearly defined and that appropriate systems and schedules are in place. This section offers some introductory guidance and it is anticipated that meetings with all involved will take place when learners register on the programme. Training and support will be provided for supervisors and mentors.

**Learners**

Learners will engage in the learning and assessment as detailed in the programme and module specifications. Various delivery and assessment processes will be involved across the modules in the programme. The learner may be best served if a Learning Agreementis negotiated between the provider and employer with the active involvement of the learner. The learner will both collect evidence which demonstrates the tasks achieved andwill create reflective statements in a portfolio demonstrating what learning has been achieved as a result of the tasks.

**Programme Leaders**

Programme leaders will be responsible for a general oversight of the allocation of tutors, as well as working with supervisors and mentors for each learner. This will include ensuring that adequate staff development takes place and that in each case the scheduled activities are taking place on time and achievements are to the standards required.

**Tutors**

Tutors have a key role in the management and operation of the learning for each of the learners. Responsibilities will be many and varied, but will include:

* Accreditation of prior learning (whether through experience or formal education)
* Accreditation of an employer’s staff development provision
* Identification of the working opportunities which will facilitate achievement of Learning Outcomes(LOs)
* Identification of the evidence required to demonstrate the achievement of a LO
* Providing an opportunity for formative assessment within a module
* Setting and marking the formal assessment within a module
* Pastoral responsibility for the learner
* Negotiation with supervisors, mentors and learners as the circumstances of the work environment change

**Supervisor**

The supervisor in the work place must negotiate with the programme leader and tutor in order to identify work which will provide the opportunity needed for a learner to achieve and evidence the learning outcomes of the qualification. The supervisor also has the key responsibility to ensure that this identified work is allocated to a learner with an adequate time allocation. The supervisor must review the progress and attainments of each learner with the tutor concerned and undertake management actions in order to redress any problems or obstacles.

**Mentor**

The mentor in the work place is charged with a number of roles which are supportive in nature and not in any way judgemental. A mentor would typically be someone working at a more senior level than the learner with greater experience of most of the tasks of the job role. The mentor would provide a sounding board for the learner as the challenges of the job become more demanding. Providing informal guidance as the learner develops the improved capability needed to handle these greater challenges. The mentor would advise on the use of resources and give informal feedback on the standards being achieved. Smaller companies may be limited in their scope to resource this role. As an alternative, a learner’s mentor might be someone in another business with whom he or she is engaged in a project, rather than someone in her/his own company.