Programme Specification

Cert HE Biological Sciences

(Level 3 Apprenticeship)

School:	Science, Technology and Health
Subject area:	Biomedical Science
Entry from academic year:	2022-23
in the month(s) of:	September
Awarding institution:	York St John University
Teaching institution:	York St John University
Delivery location:	York St John University
Programme/s accredited by:	N/A
Exit awards:	Certificate of Higher Education Biological Sciences
UCAS code / GTTR / other:	
Joint Honours combinations:	Not applicable
QAA subject benchmark statement(s):	Biosciences (2015) and the Level 3 apprenticeship in Laboratory Technician standard
Mode/s of study:	Non-standard period of study as follows: • full-time normally for 2 years
Language of study:	English
Paired with foundation year	No
Study abroad opportunities:	No
Placement year opportunity:	No

Introduction and special features

The Level 3 apprenticeship in Biological Sciences provides a multidisciplinary approach to the study of human biology. The main focus is on normal human tissue/cellular structure/function, as a pre-cursor to studying diseased states of the human body. It also provides an understanding of the scientific basis for the laboratory investigation, diagnosis, monitoring and treatment of disease. Students completing this award gain an understanding of working in biological sciences to develop new procedures as well as future scientific strategies, in the context of their own laboratory discipline.

As a graduate from this apprenticeship in Biological Sciences, you will have a broad-based scientific education coupled with relevant and current technical skills necessary for laboratory work. This broad-based education provides the foundation for a wide-range of scientific careers, including laboratory-based or non-laboratory-based scientist in the Pharmaceutical or Biotechnology Industry and other related industries or academic research. Your apprenticeship provides a qualification to enhance your professional career, however, you will need to continue to develop skills throughout your working life. This programme couples a scientific education with the development of the skills necessary for lifelong learning.

Special features
The Level 3 apprenticeship in Biological Sciences programme has been mapped to both the QAA benchmark statement for Biosciences and the Level 3 Laboratory Technician apprenticeship standard. This ensures the quality and appropriate content of the programme of study. Whilst enrolled as an apprentice at York St John University, you will study the Cert HE Biological sciences programme part-time, alongside completion of some KSB's at your workplace based on 20% 'off the job' model, to be agreed with your employer and work-based supervisor / manager.

Whilst at YSJ, you will undertake theory and practical sessions in bespoke laboratory facilities have been designed to support experiential learning in small student groups. Your laboratory competency will be developed with practical classes, university-based supported open learning activities and the laboratory experience you will gain whilst at work, in the workplace. You will also have online learning activities both within modules and also as part of extra-curricular self-development, which you will record in an electronic portfolio that can be presented to your employers and used to demonstrate completion of the relevant KSB's. In addition, embedded professional development and reflective practice, and relevant work-related laboratory experience plus completion of your vocational competence evaluation log will enhance your employability.

You will have collaborative learning experiences from academic tutorials, workshops and case studies. You will have interaction with Biomedical Science practitioners and other professionals from a range of careers. The Level 3 apprenticeship in Biological Sciences has also been designed to develop you within the following three themes: Academic development and critical thinking (through learner autonomy, critical thinking, information literacy, research and enquiry); Employability and professionalism (though self-awareness and management, communication, collaboration, life-long learning, professional values, digital literacy); and Inclusivity (through social responsibility, global citizenship and ethics). These themes are developed throughout the programme and will be further enhanced by the work-based learning and logbook completion that you will also undertake during your studies.

You will complete a gateway assessment as part of your apprenticeship, facilitated in the workplace laboratory. Once you have completed all modules (120 credits), you will also undertake a work-based end point assessment (EPA) which will take place during the last 4 months of the apprenticeship and will comprise of a knowledge test, observation and testing, and a structured interview underpinned by a portfolio of evidence.

Admissions criteria

You must meet the University's general entry criteria for undergraduate study. In addition, you must have:

- Typically, candidates will have 5 GCSE's at grade C or above, including English and maths. In addition, 104 UCAS points are required from relevant level 3 qualifications (e.g. A-levels, BTEC or Access courses). Candidates offering A-levels are expected to hold A-level Biology and ideally one other science subject, plus any third non-science A-level. Offers based on BTEC and Access routes will depend on the exact number and nature of units studied.
- Other relevant or prior experience may also be considered as an alternative.

If your first language is not English, you need to take an IELTS test or an equivalent qualification accepted by the University (see https://www.yorksj.ac.uk/international/how-to-apply/english-language-requirements/).

If you do not have traditional qualifications, you may be eligible for entry on the basis of Accredited Prior (Experiential) Learning (APL/APEL). We also consider applications for entry with advanced standing.

Programme aim(s)

The programme is intended to:

- Provide a stimulating and well-informed programme of study in Biological Sciences for students from diverse cultural and educational backgrounds, with embedded small group activities and vocational skills.
- Enhance learning by providing you with supported open learning and technology enhanced learning opportunities to suit your interests and/or career aspirations.
- Develop subject knowledge, core discipline specific skills and research skills and understanding in Biological Sciences as defined in the curriculum to reflect the Subject Benchmark Statement for Biosciences.
- Develop personal transferable skills which enhance your employability and / or aptitude for further education.
- Provide an apprenticeship route that enables you to gain a degree level qualification, following successful completion of all modules, gateway assessments and end point assessment. *
- Provide a supportive and structured environment in which you are encouraged to develop the independent study skills required for lifelong learning.

* *The gateway assessments are coordinated between the University and the workplace during the apprenticeship. The end point assessment with an external assessor will take place normally within 3 months of your completion of the programme modules.*

Programme learning outcomes

Upon successful completion, apprentices will be able to:

Level 4

4.1 Describe the underlying concepts and principles of core aspects of Biomedical Science including Cell Biology, Genetics, Biochemistry, Molecular Biology, Human Anatomy and Physiology, Immunology, Microbiology

4.2 Present, evaluate and interpret qualitative and quantitative data, in order to develop research skills, lines of argument and make sound judgements in accordance with basic theories and concepts of biomedical science

4.3 Write scientific reports and communicate the results of their study/work accurately and reliably, and with structured and coherent arguments

4.4 Demonstrate a range of personal transferable skills including communication, information technology (including the use of databases, statistics and other sources of information and means of communication), team working, negotiating and decision-making skills that are required in a working environment and prepare you for lifelong learning

4.5 Demonstrate transferable skills necessary for employment, including personal responsibility; awareness of ethics; health and safety assessments; good laboratory practice and problem solving, quality control and assurance

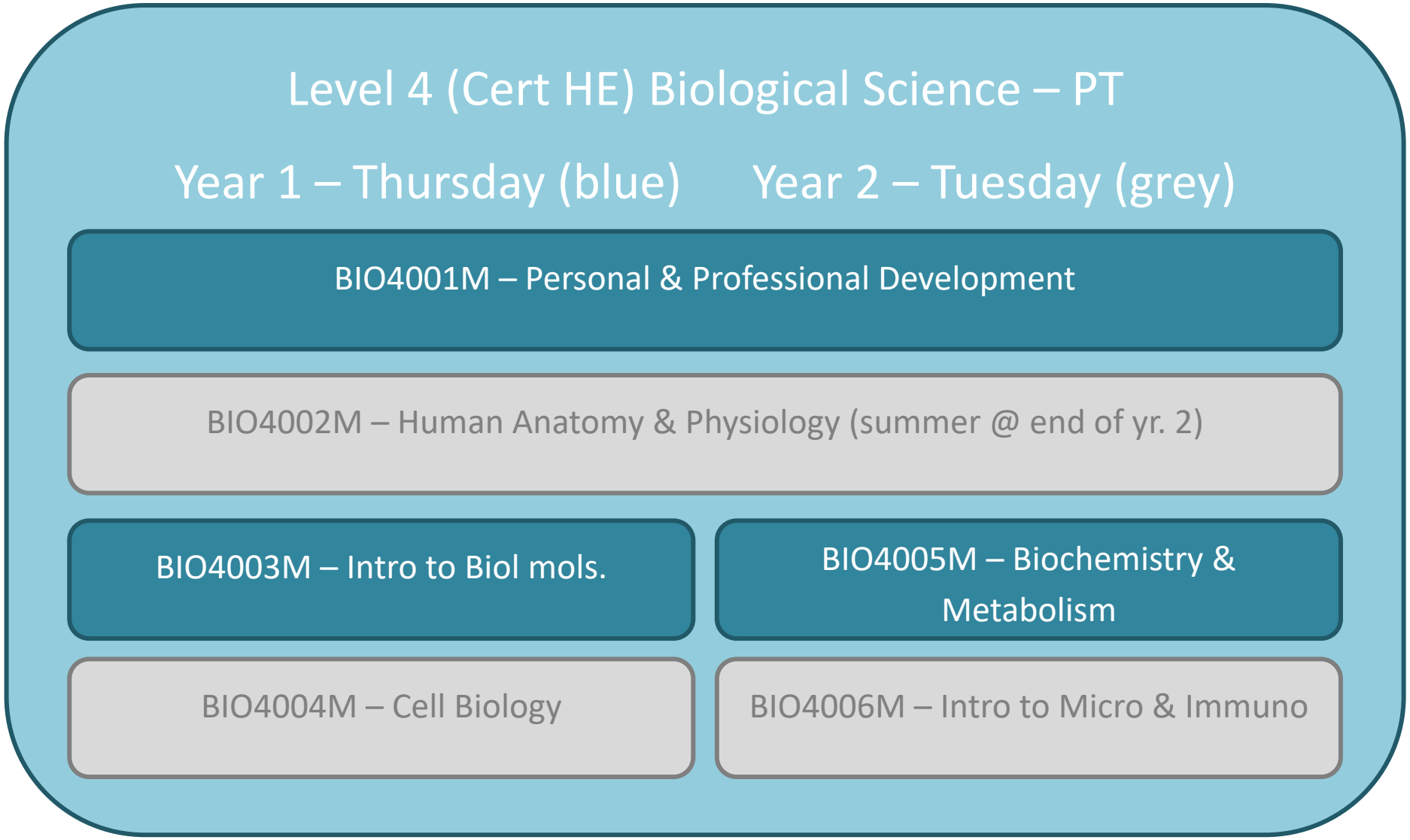
Programme structure

You will study six modules over a two-year period, studying three modules each year.

The curriculum is designed to enable you to develop the necessary level of knowledge of Biological Sciences suitable for a career as a scientist. In Level 4, you will study normal human biology plus some microbiology and immunology at the level of the molecule, gene, cell, organ and organism. Laboratory

sessions, run in conjunction with the theoretical components, will give you the opportunity to enhance your understanding of particular topics. You will be introduced to basic laboratory skills, alongside qualitative and quantitative data handling / interpretation. You will also develop your key skills during Level 4 and you will start to develop a progress file. You will be encouraged to develop a reflective attitude to your learning and develop numerical, written and oral communication, IT and group working skills.

Ethics / COSHH, health and safety training and Good Laboratory Practice are addressed throughout the programme in the BIO4001M *Personal and Professional Development* module. You will also continue to reflect upon ways to improve your own learning and performance and to develop autonomous learning skills. Laboratory sessions will allow you to improve your data handling and critical interpretation skills and increase the autonomy with which you can apply them. You will be expected to take increasing responsibility for your own learning, organisation and planning of academic and laboratory work, as well as group and individual outcomes. Throughout the curriculum you will have the opportunity to develop the skills associated with biomedical laboratory practice, professional standards and the importance of quality control and quality assurance.


Level 4 (Cert HE) Biological Science – PT
Year 1 – Thursday (blue)
Year 2 – Tuesday (grey)
BIO4001M – Personal & Professional Development
BIO4002M – Human Anatomy & Physiology (summer @ end of yr. 2)
BIO4003M – Intro to Biol mols.
BIO4005M – Biochemistry & Metabolism
BIO4004M – Cell Biology
BIO4006M – Intro to Micro & Immuno

Modules for the Programme

All modules are compulsory. (BIO4001M and BIO4002M are taught via bespoke learning or tutorials on campus days).

Year 1 – 60 credits

Code	Level	Semester	Day	Title	Credits	Module status	
						compulsory or optional to take **C or O**	non-compensatable or compensatable **NC or X**
BIO4001M	4	1&2	Sem 1 + 2 Thurs	Personal and Professional Development	20	C	NC
BIO4003M	4	1	Thursday	Biological Molecules and Reactions	20	C	NC
BIO4005M	4	2	Thursday	Biochemistry and Metabolism	20	C	NC

Year 2 – 60 credits

Code	Level	Semester	Day	Title	Credits	Module status	
						compulsory or optional to take **C or O**	non-compensatable or compensatable **NC or X**
BIO4004M	4	1	Thursday	Cell Biology	20	C	NC
BIO4006M	4	2	Thursday	Introduction to Microbiology and Immunology	20	C	NC
BIO4002M	4	Summer	Tuesday	Human Anatomy and Physiology	20	C	NC

All Level 4 modules completed after 2 years

Complete all modules by June and go through exam board – the EPA needs completing within six months of the Cert HE qualification end-date.

End point assessments (EPA) to include:

1. Knowledge Test
2. Observation and Questioning
3. Structure Interview underpinned by a portfolio of evidence
   The EPA will cover all elements of the apprenticeship standard and will lead to the graded apprenticeship award and Registered Scientist status.

Learning, Teaching and Assessment

The teaching, learning and assessment strategy takes into consideration the learning outcomes for the programme, progression through levels of study, the nature of topic studied and the need for you to demonstrate greater autonomy in your learning as you progress through the programme. We believe that our broad portfolio of assessments is a driver for learning, ensures learning outcomes are met, rewards success and provides excellent student feedback.

In each of the modules you will be exposed to a range of learning, teaching and assessment approaches to actively engage you in the ways of thinking and practicing in the laboratory. Typically within modules, you will be guided through several themes over the course of a semester or year. For example, module BIO4003M *Biological Molecules and Reactions* will consider molecular structure, functional groups and reaction mechanisms over the semester. Your learning in relation to these themes will be facilitated by: lecture / workshop sessions that provide an overview of the theory in the area; give you the opportunity to discuss theory and application to practice and test out your understanding with peers and the tutor and practical sessions to teach you relevant skills and carry out experiments. These core sessions will be supplemented by formative activities in the laboratory to complete related practical tasks, the Virtual Learning Environment where you will complete a self-assessment quiz or piece of reading and revision sessions to discuss your academic development in the topic area.

In Level 4 this will be highly structured, with tasks to 'scaffold' learning and help you make the transition into university, however as your studies progress you will be expected to manage your own learning and undertake independent tasks. In particular, you will be encouraged to critically engage with research literature and discuss how evidence can be used to support and develop theory and practice.

Assessment on the programme has been designed to ensure that it supports your learning, in addition to monitoring your skills and understanding relevant to the workplace. This means that formative assessments are integral to all modules and are designed to engage you with meaningful feedback and develop an ability to self-evaluate, prior to submission of the summative work. As you progress through your Laboratory Technician apprenticeship, you will encounter a number of short tests to determine knowledge and practical reports to give you the opportunity to gain experience in report writing, data handling and interpretation and scientific writing that are directly transferable to your workplace tasks. All these assessments have been carefully scheduled to ensure they are progressive and well-spaced throughout the programme.

Academic engagement is supported via regular feedback from academic tutors and module leaders, in order to facilitate your development and improve your engagement with your studies. You can discuss suggestions for performance improvement with both academics and peers and the Study Development Team. The use of formal and informal feedback throughout the modules will develop your ability to evaluate your progress and build confidence. The programme design allows you to develop many skills that can be applied to new tasks and situations and helps you to engage with the curriculum.

You will undertake three modules per year with the undergraduate Biomedical Science students, delivered alongside normal semester dates. Some flipped learning may be involved however, all taught material is provided in advance on the VLE and followed by small group tutorials to go through the content.

The End Point Assessment

Apprentices will be eligible to attempt the EPA upon attainment or completion of:

- Level 2 functional skills in English and Mathematics
- A record or portfolio of evidence that documents the assessments and tasks completed to demonstrates that the skills, knowledge and behaviours set out in the Standard have been achieved
- Achievement of the Cert HE in Biological Sciences

The employer may wish to review reports from any trainers/training providers involved in supporting the apprentice throughout the programme to inform their judgment and ensure they are confident in their assessment of the apprentice's readiness to undertake the EPA.

Progression and graduation requirements

The University's general regulations for undergraduate awards apply to this programme.

Any modules that must be passed for progression or award are indicated in the Programme Structure section as non-compensatable.

This programme does not permit the option to study part time to redeem progression failure in level 4 due to a PSRB requirement

Internal and external reference points

This programme specification was formulated with reference to:

- University Mission Statement
- QAA benchmark statement 2015
- Framework for Higher Education Qualifications (updated 2014)
- https://www.instituteforapprenticeships.org/apprenticeship-standards/laboratory-technician-v1-2

The aims and outcome statements have been referenced to the University's Learning and Teaching and Assessment Strategy, the QAA Subject Benchmark statement, the Framework for Higher Education Qualifications (2013) and the Institute for Apprenticeships Laboratory Technician standards (2022).

Further information on the programme of study may be obtained from:

- Admissions entry profile (Admissions)
- Programme validation document (Registry – Academic Quality Support)
- Regulations (Registry – Academic Quality Support)
- Student programme handbook (School of Science Technology and Health)
- Module handbooks (School of Science Technology and Health)

Date written / revised: 03/05/2022
Programme originally approved: