

PROGRAMME SPECIFICATION

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Award titles

Programme Title(s)

BSc (Anrh) Gwyddoniaeth Biofeddygol

BSc (Hons) Biomedical Science

Internal Programme Title(s) (if different to the title on the certificate)

Programme to be included in Graduation Ceremonies

Yes

Delivery period

September 21-25

Intake points

September intake

Regulatory details

Regulatory details
Awarding body
Glyndŵr University
Programme delivered by
Glyndŵr University
Betsi Cadwaladr University Health Board (BCUHB), North Wales Clinical Research Centre (NWCRC)
Location of delivery
Plas Coch Campus, Wrexham
BCUHB North Wales Clinical Research Centre (based at Wrexham Maelor Hospital and is a registered UKVI site affiliated with WGU)
Faculty/Department
Faculty of Social and Life Sciences
Faculty of Arts, Science and Technology
Exit awards available
BSc (Ord) Biomedical Science
Diploma of Higher Education in Biomedical Sciences
Certificate of Higher Education in Biomedical Sciences
Professional, Statutory or Regulatory Body (PSRB) accreditation

Professionally accredited for registration purposes by the Institute of Biomedical Science (IBMS) (Provisional). Final confirmation from IBMS is expected in late Sept 2021.
This information is correct at the time of validation, please refer to the PSRB register for current accreditation status.
Please add details of any conditions that may affect accreditation (e.g. is it dependent on choices made by a student?) e.g. <i>completion of placement</i>.
Students must complete all of the modules (i.e. taught and research dissertation) to gain IBMS accreditation for the BSc in Biomedical Science.
HECoS codes
100265
UCAS code
B900
Relevant QAA subject benchmark statement/s
Biomedical Science (October, 2019): Link to QAA Subject Benchmark Statements – Biomedical Sciences
Mode of study
Full & part time
Normal length of study for each mode of study
<i>FULL TIME</i> 3 year Bachelor's Degree 4 year Bachelor's with foundation year
<i>PART TIME</i> Part time delivery is over 6 years and students take 60 credits per year. Chosen module delivery is offered jointly with full time delivery.
Language of study
English
Transitional arrangements for re-validated provision if applicable
N/A
The following University Award Regulations apply to this programme (<i>highlight the appropriate ones and delete the others</i>)
General Regulations and Definitions
Regulations for Bachelor Degrees, Diplomas, Certificates and Foundation Degrees

OFFICE USE ONLY	
Date of validation event:	24 June 2020
Date of approval by Academic Board:	21 April 2021
Approved Validation Period:	Five years from September 2021
Transitional arrangements approved (if revalidation)	<i>Enter details from section 3 following validation event confirming what arrangements are</i>
Date and type of revision:	02/09/2021 Admin change of semester for SCI442 and SCI450 part time delivery

1 Criteria for admission to the programme

Standard entry criteria

Entry requirements are in accordance with the University's admissions policy, please click on the following link for more information. [Admissions policies](#)

The University's entry requirements are set out on our Admissions webpages

Qualification	Entry requirements
Foundation Year	48 Tariff points and /or relevant experience
3 year Bachelors degree	112 Tariff points

These figures are intended as a general guide. Each application is considered individually.

International entry qualifications are outlined on the [National Academic Recognition and Information Centre \(NARIC\)](#) as equivalent to the relevant UK entry qualification.

In addition to the academic entry requirements, all applicants whose first language is not English or Welsh must demonstrate English language proficiency.

European students are able to provide this evidence in a number of ways (please see <http://www.glyndwr.ac.uk/en/Europeanstudents/entryrequirements/> for details), including IELTS.

International students are required to provide an English Language Certificate which meets the requirements of the University (please see <http://www.glyndwr.ac.uk/en/Internationalstudents/EntryandEnglishLanguageRequirements/> for details).

Non Standard entry criteria

N/A

2 Record of Prior (Experiential) learning

Applicants may enter the programme at various levels with Recognition of Prior Learning (RPL) or Recognition of Prior Experiential learning (RPEL) in accordance with the University General Regulations.

3 DBS Requirements

Details of regulated activity with children: None

Details of regulated activity with adults: None

Details of regulated activity with children and adults: None
Clinical assessments, learning to prescribe medications: None

Date of commencement of regulated activity: N/A

4 Suitability for Practice Procedure

Not applicable.

5 Aims of the programme

The overall aims of the Biomedical Science programme are to:

- Facilitate a widening of access to higher education within the local community and beyond through flexibility in admissions procedures and learning and teaching styles.
- Offer undergraduate awards promoting academic, vocational and personal development.
- Provide a coherent and challenging learning experience for students who have an interest in Biomedical Science.
- Offer attractive and flexible learning opportunities to full-time and part-time students.
- Encourage a critically and theoretically informed and reflective approach to academic study and professional practice.
- Foster a critical appreciation of the role and value of research and of a scientific approach to study.
- Optimise the use of learning resources by providing opportunities for shared learning for students undertaking related programmes.
- Increase self-awareness and insight into both professional and ethical issues relevant to the practice of Biomedical Science.
- Advances professional practice to benefit healthcare services and professions related to Biomedical Science.
- Develops specific knowledge and competence that underpins Biomedical Science.

Specifically, the programme will equip/provide students with:

- The study of Biomedical Sciences, which underpins professional development.
- A sound level of scientific knowledge of disease processes, which underpin diagnosis and health.
- Informed and critical appreciation of scientific development in relation to diagnostic laboratory pathology.
- In depth knowledge of the subject area through a research dissertation.
- Sound understanding of professional practice to benefit healthcare services and professions related to the practice of Biomedical Science.
- Scientific and research training appropriate for Level 6.

6 Distinctive features of the programme

The BSc(Hons) Biomedical Science course has been thoughtfully developed to provide a rich and dynamic student experience throughout the duration of the programme. Whilst it sits within the Faculty of Social and Life Sciences, a number of programme team members involved in module delivery are based in the Faculty of Arts, Science and Technology. This cross-faculty arrangement enables students to benefit from tutors with expertise ranging from the physical and natural sciences (chemistry and biology) through to healthcare sciences. Content has been carefully aligned with the requirements of the Institute of Biomedical Science, with whom the course is accredited.

Additionally, the programme is delivered in close collaboration with the local Betsi Cadwaldr University Health Board (BCUHB), and builds on the success of an existing collaboration co-delivering a range of Postgraduate (PG) programmes in the Biomedical, Clinical and Healthcare Sciences. For this undergraduate provision, the collaboration will ensure that students have an authentic and contemporary education within real biomedical settings, embedded throughout the programme.

Staff from the North Wales Clinical Research Centre (NWCRC) within BCUHB have collaborated closely with academics from Wrexham Glyndwr University in design of the programme.

The NWCRC is based at Wrexham, opposite the Wrexham Maelor Hospital. It comprises of research laboratories, housing state of the art equipment, such as flow cytometry, fluorescence microscopy and molecular analysers. It also includes clinical suites for undertaking non-laboratory based research, hot desk facilities offices, meeting and seminar rooms. There are a number of opportunities for students enrolled on the BSc (Hons) Biomedical Science programme to undertake work within the NWCRC laboratories, particularly in the second year of the programme where they will undertake a five week block of laboratory based work, engaging with researchers and biomedical scientists employed within BCUHB.

The BSc (Hons) Biomedical Science framework offers a flexible programme with named routes to cater for the learning and personal/professional development needs of students wishing to work within a biomedical, clinical and healthcare perspective. The programme is distinctive in that it provides a balance of generality and specificity of content to cater for a wide range of student educational needs. It seeks to encourage inter-professional practice by being open to students within an academic community. The programme is taught by a highly experienced team of biomedical scientists, clinicians, clinical scientists, academics, and other health professionals with a range of subject and research expertise, many of whom are engaged in national networks, external peer review and consultancy within the general fields of biomedical sciences, medicine and healthcare.

Core modules within the programme enable students to actively engage in the discourses surrounding the concepts of health and its representations (QAA, 2019), and to critically apply their understanding to their own field of biomedical, practice. This ensures all students successfully completing it will be thoroughly grounded in ethical and reflective practice, have a sound subject specific and research knowledge base. The programme will appeal strongly to individuals seeking to study and practice at graduate professional level within biomedical sciences.

Specifically, the BSc (Hons) Biomedical Science gives students the opportunity to develop their research skills, explore specialist areas, and complete an independent research project (40 credits). Core modules will develop the students' knowledge, while improving their analytical skills by undertaking laboratory based investigations employing biomedical methodology.

The entire course is integrated through a study of the biology of disease, including modern concepts and applications of biomedical science in research, diagnosis and treatment of clinical disorders. The programme will help develop the skills for practice at graduate level, gaining a broad knowledge of the subject along the way.

The programme creates wide-ranging opportunities for employment in fields such as hospital pathology laboratories (NHS and private sector), biomedical and pharmaceutical industries, or public health laboratories. It provides preparation for undertaking the Institute of Biomedical Science Certificate of Competence (a compulsory requirement for being a

registered Biomedical Scientist affiliated with the Health & Care Professions Council), and for those students wishing to undertake a career in research, teaching, medicine or to pursue studies towards a Masters or PhD. The skills developed and the use of authentic assessment will also ensure employment opportunities outside of immediate biomedical science areas as a further option.

7 Credit Accumulation and exit awards

Exit Awards

Successful completion of 120 credits at Level 4 entitles the student to the exit award of Certificate of Higher Education in Biomedical Science

Successful completion of 240 credits at Level 5 entitles the student to a Diploma of Higher Education in Biomedical Science

Successful completion of 300 credits at Level 6 entitles the student to a Bachelor's degree in Biomedical Science (Ordinary)

Successful completion of 360 credits at Levels 4, 5 and 6 entitles the student to a Bachelor's degree in Biomedical Science (Honours).

It is proposed that students will be able to claim IBMS accreditation on completion of level 6 (gaining 360 credits) .

8 Programme Structure Diagram, including delivery schedule

It is proposed that the new BSc (Hons) Biomedical Science programme will be delivered via face-to-face (contact) and with online material to supplement learning. Some existing modules from both faculties (shared with other programmes) will be used as they cover the content required by benchmark statements and IBMS accreditation, particularly at level 4. However, new modules comprise the majority of the programme. While care has been taken with the choice of module titles, it is important to note that all of the key areas within biomedical science are covered at each level in the content and assessment of modules.

Each module takes the form of a learning package consisting of face to face and directed learning teaching, supported and developed by text and online resources (accessed via the module space on Moodle), such as self-assessment questions, websites, emails, discussion boards, etc.

Typically, each module is designed to be studied over a semester (12 week) learning period, commencing with an introductory delivery at the university and/or the North Wales Clinical Research Centre. The first session(s) introduce the students to the module content (including support provision, learning materials and assessment details) and provides an opportunity for the delivery of some subject matter and, where appropriate, relevant practical work. On-line learning will consist of blogs, learning diaries, contribution to fora, quizzes and regular tutorials with teaching staff.

This approach is favourable with employers, and will enable timetabling to fit around current teaching modules. Ultimately, this will also be attractive to part-time students and those who may wish to gain release from employment to study. The BSc will be accredited by the IBMS.

To achieve an honours degree, all students must undertake 320 credits of core taught curriculum modules, followed by a research project/dissertation (40 credit), which are detailed below along with the proposed schedule of delivery.

IBMS conversion applicants

Graduates with a non-accredited degree in a relevant area can apply to gain accreditation by the IBMS. Once any gaps in skills and learning outcomes are identified, the relevant biomedical science specific modules will be offered as stand-alone modules, to address these gaps and map against IBMS requirements. Students will need to pass these modules in order to gain accreditation.

Full-time delivery

Level 4

Mod Code	SCI447	Mod title	Professional Practice for the Biomedical & Life Sciences	Credit value	20	Core	Semester 1
Mod Code	SCI450	Mod title	Cell Biology, Biochemistry & Genetics	Credit value	20	Core	Semester 1
Mod Code	SCI442	Mod title	Maths and statistics for science	Credit value	20	Core	Semester 1
Mod Code	SCI448	Mod title	Essential skills for the Life Sciences	Credit value	20	Core	Semester 2
Mod Code	HLT417	Mod title	Applied physiology in wellbeing	Credit value	20	Core	Semester 2
Mod Code	SCI446	Mod title	Introduction to Immunology & Microbiology	Credit value	20	Core	Semester 2

Level 5

Mod Code	SCI547	Mod title	Cell & Molecular Biology	Credit value	20	Core	Semester 1
Mod Code	SCI525	Mod title	Research Methods, Theory and Practice	Credit value	20	Core	Semester 1
Mod Code	SCI548	Mod title	Blood Sciences	Credit value	20	Core	Semester 1
Mod Code	SCI549	Mod title	Cellular & Histopathology	Credit value	20	Core	Semester 2
Mod Code	SCI550	Mod title	Medical Microbiology	Credit value	20	Core	Semester 2
Mod Code	SCI544	Mod title	Advanced laboratory skills for the Biomedical & Life Sciences	Credit value	20	Core	Semester 2

Level 6

Mod Code	SCI638	Mod title	Research project	Credit value	40	Core	Semester 1 & 2
Mod Code	SCI643	Mod title	Biology of Disease	Credit value	20	Core	Semester 1
Mod Code	SCI646	Mod title	Clinical Genetics & Cancer Biology	Credit value	20	Core	Semester 1

Mod Code	SCI644	Mod title	Infectious Disease, Immunity & Inflammation	Credit value	20	Core	Semester 2
Mod Code	SCI645	Mod title	Advances in Medicine: Diagnostics & Therapeutics	Credit value	20	Core	Semester 2

**Part-time delivery
Level 4 (year 1)**

Mod Code	SCI442	Mod title	Maths and statistics for science	Credit value	20	Core	Semester 1
Mod Code	SCI448	Mod title	Essential skills for the Life Sciences	Credit value	20	Core	Semester 2
Mod Code	HLT417	Mod title	Applied physiology in wellbeing	Credit value	20	Core	Semester 2

Level 4 (year 2)

Mod Code	SCI447	Mod title	Professional Practice for the Biomedical & Life Sciences	Credit value	20	Core	Semester 1
Mod Code	SCI450	Mod title	Cell Biology, Biochemistry and Genetics	Credit value	20	Core	Semester 1
Mod Code	SCI446	Mod title	Introduction to Immunology & Microbiology	Credit value	20	Core	Semester 2

Level 5 (year 3)

Mod Code	SCI548	Mod title	Blood Sciences	Credit value	20	Core	Semester 1
Mod Code	SCI549	Mod title	Cellular & Histopathology	Credit value	20	Core	Semester 2
Mod Code	SCI550	Mod title	Medical Microbiology	Credit value	20	Core	Semester 2

Level 5 (year 4)

Mod Code	SCI547	Mod title	Cell & Molecular Biology	Credit value	20	Core	Semester 1
Mod Code	SCI525	Mod title	Research Methods, Theory and Practice	Credit value	20	Core	Semester 1
Mod Code	SCI544	Mod title	Advanced laboratory skills for the Biomedical & Life Sciences	Credit value	20	Core	Semester 2

Level 6 (year 5)

Mod Code	SCI643	Mod title	Biology of Disease	Credit value	20	Core	Semester 1
Mod Code	SCI644	Mod title	Infectious Disease, Immunity & Inflammation	Credit value	20	Core	Semester 2
Mod Code	SCI645	Mod title	Advances in Medicine: Diagnostics & Therapeutics	Credit value	20	Core	Semester 2

Level 6 (year 6)

Mod Code	SCI638	Mod title	Research project	Credit value	40	Core	Semester 1& 2
Mod Code	SCI646	Mod title	Clinical Genetics & Cancer Biology	Credit value	20	Core	Semester 1

9 Intended learning outcomes of the programme

Knowledge and Understanding

	Level 4	Level 5	Level 6	Level 6 (Hons)
A1 Knowledge and theory	Demonstrate fundamental knowledge and analysis of relevant theoretical concepts	Demonstrate detailed knowledge and in-depth analysis of relevant theoretical concepts	Demonstrate extensive knowledge and critical analysis of relevant theoretical concepts	Demonstrate extensive knowledge and critical analysis of relevant theoretical concepts, practical applications and research
A2 Knowledge of practical issues	Demonstrate knowledge of a broad range of practical issues as applied to the field of biomedical sciences	Demonstrate knowledge and evaluation of a broad range of practical issues as applied to the field of biomedical sciences	Demonstrate critical evaluation of a broad range of practical issues as applied to the field of biomedical sciences	Demonstrate critical evaluation of a broad range of practical issues and research as applied to the field of biomedical sciences
A3 Integrating knowledge across biomedical disciplines	Recall and integrate knowledge and application from different areas of biomedical sciences	Explain and integrate knowledge and application from different areas of biomedical sciences	Synthesise and integrate knowledge and application from different areas of biomedical sciences	Synthesise and integrate knowledge and critical evaluation of different areas of biomedical science research
A4 Theoretical concepts and current biomedical science	Apply a theoretically informed perspective to relevant issues and current developments in biomedical sciences	Apply a theoretically informed perspective to explain and analyse relevant issues and current developments in biomedical sciences	Apply a critically and theoretically informed perspective to relevant issues and current developments in biomedical sciences	Apply a critical, theoretical and evidence-based informed perspective to relevant issues, current developments and contemporary research in biomedical sciences

Intellectual Skills

	Level 4	Level 5	Level 6	Level 6 (Hons)
B1 Academic skills	Demonstrate fundamental academic study skills	Demonstrate effective academic study skills and apply to all areas of study	Demonstrate advanced academic study skills and	Demonstrate advanced academic study skills and

	Level 4	Level 5	Level 6	Level 6 (Hons)
			evaluate their application to all areas of study	evaluate their application to all areas of study and research
B2 Scientific approach to study	Apply a scientific approach to academic study	Apply and explain scientific approaches to academic study	Apply and critically evaluate scientific approaches to academic study	Apply and critically evaluate scientific approaches to academic study and research
B3 Analysing data	Analyse and interpret data	Analyse, evaluate and interpret data	Critically analyse, evaluate and interpret data	Synthesise and integrate experimental data and relate to the current evidence base
B4 Formulating and testing hypotheses	Recall and describe the formulation and testing of hypotheses	Explain and analyse the formulation and testing of hypotheses	Critically analyse the formulation and testing of hypotheses	Critically analyse the testing of hypotheses through planning, conducting and critically evaluating specific research projects

Subject Skills

	Level 4	Level 5	Level 6	Level 6 (Hons)
C1 Health and safety	Show awareness of health and safety issues in biomedical science laboratories and perform risk assessments.	Show detailed knowledge and application of health and safety issues in biomedical science laboratories and perform risk assessments.	Show critical evaluation and application of health and safety issues in biomedical science laboratories and perform risk assessments.	Show critical evaluation and application of health and safety issues in biomedical science laboratories and perform risk assessments for routine tests and novel research projects.
C2 Ethics	Show awareness of ethical issues in contemporary biomedical science.	Show detailed awareness of ethical issues in contemporary biomedical science and explain the main concepts.	Show detailed knowledge and awareness of ethical issues in contemporary biomedical science. Critically evaluate the main concepts.	Show detailed knowledge and awareness of ethical issues in contemporary biomedical science. Critically evaluate the main concepts across all applications of biomedical science – clinical and research.

	Level 4	Level 5	Level 6	Level 6 (Hons)
C3 Biomedical laboratory processes	Observe, record accurately and describe biomedical science laboratory processes	Observe, record accurately and explain biomedical science laboratory processes	Observe, record accurately and critically evaluate biomedical science laboratory processes	Observe, record accurately and critically evaluate biomedical science laboratory processes and research
C4 IT skills and Statistical analysis	Demonstrate basic use of Microsoft office applications. Use relevant software to perform both descriptive and inferential statistics	Demonstrate comprehensive use of Microsoft office applications. Use relevant software to explain both descriptive and inferential statistics	Demonstrate more advanced use of Microsoft office applications. Use relevant software to critically analyse both descriptive and inferential statistics	Demonstrate more advanced use of Microsoft office applications. Conduct research projects, using relevant software and critically analysis of both descriptive and inferential statistics

Practical, Professional and Employability Skills

	Level 4	Level 5	Level 6	Level 6 (Hons)
D1 Laboratory reports	Prepare descriptive laboratory reports	Prepare descriptive and interpretive laboratory reports	Prepare descriptive, interpretive and critically analysed laboratory reports	Prepare descriptive, interpretive and critically analysed laboratory reports and research findings
D2 Laboratory practical skills	Demonstrate the practical skills involved in the preparation of practical reports	Demonstrate and explain the practical skills involved in the preparation of practical reports	Demonstrate and critically evaluate and analyse the practical skills involved in the preparation of practical reports	Demonstrate and critically evaluate and analyse the practical skills involved in the preparation of practical reports and conduct of research projects
D3 Academic communication	Demonstrate fundamental academic presentation skills (oral and written).	Demonstrate effective academic presentation skills (oral and writing).	Demonstrate a variety of effective academic presentation skills (oral and writing) and evaluate methods of presentation.	Demonstrate a variety of effective academic presentation skills (oral and writing) and evaluate methods of presentation. Analyse different types of scientific output.

	Level 4	Level 5	Level 6	Level 6 (Hons)
D4 Problem-solving	Apply basic theory and methods to a well-defined problem and appreciate the complexity of the issues in the subject.	Apply basic theory and methods to a well-defined problem and appreciate the complexity of the issues in the subject.	Apply basic theory and methods to a well-defined problem and appreciate the complexity of the issues in the subject.	Apply basic theory and methods to a well-defined problem and appreciate the complexity of the issues in the subject.

10 Learning and teaching strategy

The BSc (Hons) Biomedical Science programme is delivered on a modular basis and the mode of delivery will differ from module to module, depending upon the nature of the module content and its specific intended learning outcomes. Students should expect for all modules, however, to experience a range of learning and teaching strategies, which may include lectures, seminars, workshops, practical sessions and lab-based study, discussions, telephone and on-line tutorials, debates, group tutorials, case studies, problem-based learning, and visiting speakers, within a framework of inter-professional education wherever possible. In all these endeavours, tutors act as facilitators of learning rather than merely as a means of transmitting knowledge.

Moreover, for all programmes the University is moving towards a blended learning approach in line with the recently conceived Active Learning Framework, ALF. Whilst this was in part a response to the needs of remote delivery during the Covid19 pandemic it also meets the desire of the University to provide learning, teaching and assessment in a more flexible and accessible manner. Delivery will be truly of a 'blended' nature and will seek to find an optimum balance of face-to-face delivery and remote online delivery, being sensitive to the needs of the student body. Where online delivery is utilised adherence to ALF principles will ensure that content is interactive and fosters the development of an online community to which students will have a sense of belonging.

The learning and teaching approach will embrace the university active learning framework (ALF), which is driven by the goal to offer blended learning that is accessible, flexible and inclusive. A learner-centred approach will be adopted with the aim of promoting independent learning; as a consequence, direct face-to-face teaching or online contact hours will be supplemented by tutor-guided content with independent reading, and research which will emphasise the need to work in a critical way with theoretical and empirical research and scholarly sources. There will also be an emphasis on active learning and use of SCALE-UP methodology.

Additionally, the Moodle VLE will be used for developing interactive activities such as quizzes, wikis, and forums; it also allows staff and students to create discussion groups. Students will be encouraged to make significant use of on-line resources especially journals and e-books.

Academics of the Faculty of Social & Life Sciences, the Faculty of Arts, Science and Technology, and BCUHB staff, have many years of experience in offering distinctive programmes of study at diploma, undergraduate, postgraduate and post-doctoral experience levels. The university has considerable experience of supporting the learning needs of mature students and of students generally with 'non-standard entry' qualifications. Considerable experience has been achieved with students with limited entry qualifications both in terms of academic performance and personal development. Methods of teaching and learning are indicated clearly in each module descriptor and the list that follows describes the variety of approaches used by tutors.

The approach to learning and teaching is underpinned by the opportunities provided for academic staff for continual professional development (CPD). There are 94% of academic staff with a teaching qualification and/or professional recognition through Advance HE (HEA) fellowship, senior fellowship and principal fellowship. All programme leaders undergo an 'effective programme leadership' course and further opportunities are provided via the learning and teaching hub. The university also operates 'learning lunches' and 'bitesize' educational sessions.

The course is developed with the partnership with BCUHB in mind and responding to regional skills need.

Module delivery

Full time students study three modules within each semester. Each 20 credit module equates to 200 hours of study of which there is normally between 24 and 36 hours of contact time dependent on level, with the rest of the time being dedicated to directed study. Contact time decreases from 36 hours per 20 credit module at level 4 to 24 hours at level 6, in line with the expectation that students will progress steadily towards becoming independent learners as they progress through the programme.

Students will be expected to attend all timetabled sessions and a variety of engagement / attendance monitoring strategies will be employed to ensure adequate engagement and identify any attendance issues. At the start of each module, the module content (including support provision, learning materials and assessment details) will be described. Considerable guidance will be given on learning to learn, accessing and using resources and preparing assignments as well as an introduction to the modular content.

Students will be encouraged to form self-help groups (communicating through e-mail, Moodle discussion boards/cafés, chat rooms) and these will be explained and organised during the module delivery. The study hours for each module will include hours preparing for and completing assessments.

Learning Packages

(a) Student written communication will be in the form of Module Handbooks supported by a Programme Handbook. The Module Handbooks and Moodle support site will contain a range of text materials, articles, data handling exercises and so on to support student learning.

(b) On-line learning

On-line content may be variable in nature but typically will be based around the VLE (Moodle) and may comprise:

- A structured weekly guide to the module content
- Self-assessment questions
- Assessment details and guidance on presenting the assignment(s)
- Access to distant, appropriate websites
- Access to the Library on-line support (including e-books, open access journals, the Encyclopaedia of Life Sciences)
- Access to the module Discussion Board and fora.
- e-mail links to the module tutor(s)
- Text references.
- Access to the support infrastructure.
- Recorded lectures (panopto)

Practical work

At level 6, the amount of formal practical work is limited, but all students will undertake a 40 credit Research Project which will entail carrying out a practical investigation involving a relevant empirical study. This provides the opportunity for students to develop their data handling and analytical skills, to an advanced level, as well as their practical skills.

Employability Skills

Employability skills encompass the attributes that help graduates to secure employment, enable them to respond to the changing demands of the workplace and contribute positively to their employer's success and their own progress are essential as outcomes in programmes of study. Employability skills include; self-management, team working, business and customer awareness, problem-solving, communication and literacy, application

of numeracy, application of information technology. All programme modules have identifiable employability learning outcomes.

Visiting/sessional Lecturers

Visiting/sessional Lecturers will be used to support the delivery of the programme. This will provide expertise in pathology and will include contributions from a range of personnel involved in aspects of Biomedical, Clinical and Healthcare Sciences and related industries.

11 The Wrexham Glyndŵr Graduate

At Glyndŵr University we aim to help students develop and enhance key employability skills and capabilities during their study. There are three key areas with different attributes, attitudes and skillsets and the aim is to help students have the opportunity to enhance and develop skills such as resilience, adaptability, confidence, team working, emotional intelligence and communication, creativity and acting ethically and sustainably. Programmes are designed to enable students to develop and enhance these skills via module content, module learning outcomes and assessment opportunities. Each module will help provide different opportunities for developing and enhancing these capabilities.

The Careers team are available to provide information, advice and guidance and access to resources for potential students, current students and graduates. WGUCConnect provides students with access to an online directory of vacancies.

The Careers team can support students with employability and interview skills such as use of the STAR (Situation, Task, Action, Result) technique that many recruiters use to gather relevant information about a specific capability that the job requires.

12 Work based/placement learning statement

Taught modules will not include any work-based learning as part of the BSc (Hons) Biomedical Science programme framework. However, research projects/dissertations may be undertaken at the student's biomedical science area of work (for those undertaking the degree on a part time basis and in a professional placement of work).

The key biomedical lab-based learning element of the programme is the level 5 module, 'Advanced Laboratory Skills for the Biomedical & Life Sciences', which will be delivered in collaboration with BCUHB North Wales Clinical Research Centre. This module has been mapped against the IBMS Certificate of Competence and will involve students carrying out a range of specific laboratory-based and problem-solving exercises utilising the resources at the NWCRC.

Assessment will be based around written elements of the work including completion of laboratory reports and the keeping of a laboratory notebook but will also include assessment of practical and professional skills based on observation of practice.

The module will be delivered and assessed by staff at the NWCRC, who will be members of the academic programme team and will ensure the academic quality of the work. These team members have considerable prior experience of the delivery and assessment of laboratory-based teaching at both undergraduate and postgraduate level. Although a work-based module the content and learning outcomes will be clearly defined and will not have the issues that may be associated with a regular 'placement'.

Whilst the taught element of the module (level 5) will be 30 hours, the total time students are anticipated to spend on the module is 200 hours, much of which will be spent in the laboratory. This will be timetabled in a 'block' fashion such that students will in effect be

based solely within the NWCRC for a period of up to 4-6 weeks. This is a strong element of the programme, allowing students to be exposed to the workplace over an extended period.

Students undertaking their dissertation will be allocated a named dissertation supervisor who will meet with the student individually. Group sessions addressing general issues will also be provided and students will also be encouraged to attend research department seminars in areas that will benefit them. It is further anticipated that some students may elect to undertake their L6 Research Project at the NWCRC.

The university has a thriving Careers and Employability department that supports our students and graduates, giving careers guidance appointments on a one to one basis, a drop-in careers clinic, available on a weekly basis during term time. There is also a list of vacancies available on the Careers VLE, advertising a wide range of part-time, temporary and vacation work for students. These include graduate opportunities, on-campus work, work experience and voluntary work. The service offers a free vacancy advertising service to local, national and international employers and recruitment events so that students are able to access a wide range of potential employers.

The programme team, in partnership with the local health board, will set up hospital lab visits, to introduce students to the health board and to the role of the Biomedical Scientist in the NHS and beyond.

To further strengthen the work based learning aspect, modules delivered by BCUHB staff will incorporate lectures from medics and laboratory scientists. Exposure to experts in the field is invaluable in communicating experiences of the work place and building scenarios. In addition, modules offer multiple opportunities for students to work alongside practising biomedical scientists and researchers based at the NWCRC, including a mini project and the Advanced Laboratory Skills module at level five, and L6 Research project.

13 Welsh medium provision

The programmes will be delivered through the medium of English. Students are entitled to submit assessments in the medium of Welsh. Some members of the programme team are Welsh speakers and where these tutors are supervising research projects (for example *Research Methods, Theory and Practice* and *Research Project* then supervision may, if desired, occur through the medium of Welsh.

14 Assessment strategy

Students will be assessed on their academic achievement of the programme learning outcomes, which in turn, are achieved by meeting the learning outcomes of core modules. The assessment of the programme learning outcomes will therefore be achieved by assessment at the module level. Selection of the methods for assessment will be determined by the requirements of each individual module, and the rationale for selection of those methods will be considered in the module specifications.

Assessments are chosen to examine a student's ability to integrate theory and practice, and to think critically in relation to theory, empirical research and practice.

Subject specific, professional and transferable skills are developed within classroom-based and independent learning activities. Most modules assess a variety of skills, either directly or indirectly through the assessment work for the module.

The Research Project module enables students to study and research into a specific topic in great depth, and also develops further the capacities for self-managed learning and critical thinking.

Module code & title	Assessment type and weighting	Indicative submission date
LEVEL 4		
SCI447 Professional Practice for the Biomedical & Life Sciences	Learning Log / Journal 60% Presentation 40%	Wk 17, Sem 1 Wk 21, Sem 1
SCI450 Cell Biology, Biochemistry and Genetics	Exam 50% Report 50%	Wk 27, Sem 1 Wk 25, Sem 1
SCI442 Maths and statistics for science	Online multiple choice questions test (50%) Coursework (50%)	Wk 18, Sem 1 Wk 25, Sem 1
SCI448 Essential skills for the Life Sciences	Portfolio 100%	Wk 42, Sem 2
HLT417 Applied physiology in wellbeing	Exam 100%	Wk 43/44 Sem 2
SCI446 Introduction to Immunology & Microbiology	Coursework 30% Report 20% Poster presentation 50%	Wk 33, Sem 2 Wk 39, Sem 2 Wk 41, Sem 2
LEVEL 5		
SCI547 Cell & Molecular Biology	Exam 100%	Wk 27, Sem 1
SCI549 Cellular & Histopathology	Written Assignment 50% Exam 50%	Wk 41, Sem 2 Wk 43/44, Sem 2
SCI525 Research Methods: Theory and Practice	Portfolio 100% <ul style="list-style-type: none"> • Proposal element of portfolio • Report element of portfolio • Poster Presentation element of portfolio 	Wk 15, Sem 1 Wk 21, Sem 1 Wk 25, Sem 1
SCI550 Medical Microbiology	Exam 40% Group Project 60%	Wk 43/44, Sem 2 Wk 40, Sem 2
SCI548 Blood Sciences	Exam 50% Written Assignment 50%	Wk 27, Sem 1 Wk 25, Sem 1
SCI544 Advanced laboratory skills for the Biomedical & Life Sciences	Practical Report 60% Report 40%	Wk 35, Sem 2 Wk 41 Sem 2
LEVEL 6		
SCI638 Research Project	Dissertation 80% Presentation 20%	Wk 40, Sem 2 Wk 35, Sem 2
SCI643 Biology of Disease	Presentation 80% Written Assignment 20%	Wk 21, Sem 1 Wk 26, Sem 1
SCI646 Clinical Genetics & Cancer Biology	Coursework 40% Exam 60%	Wk 19, Sem 1 Wk 27, Sem 1

Module code & title	Assessment type and weighting	Indicative submission date
SCI644 Infectious Disease, Immunity & Inflammation	Written Assignment 40% Exam 60%	Wk 33, Sem 2 Wk 43/44, Sem 2
SCI645 Advances in Medicine: Diagnostics & Therapeutics	Coursework 50% Presentation 50%	Wk 35, Sem 2 Wk 42, Sem 2

15 Assessment and award regulations

Derogations

Students must complete all of the modules (i.e. taught and research dissertation) to gain IBMS accreditation for the BSc in Biomedical Science. Compensation for failed modules is not permitted for “core” biomedical science modules listed below.

SCI547 Cell & Molecular Biology

SCI549 Cellular & Histopathology

SCI550 Medical Microbiology

SCI548 Blood Sciences

SCI544 Advanced laboratory skills for the Biomedical & Life Sciences

SCI643 Biology of Disease

SCI646 Clinical Genetics & Cancer Biology

SCI644 Infectious Disease, Immunity & Inflammation

SCI645 Advances in Medicine: Diagnostics & Therapeutics

Non Credit Bearing assessment

N/A

Borderline Classifications (Undergraduate programmes)

In considering borderline cases the Assessment Board shall raise the classification to the next level if all of the following criteria are met:

- At least 50% of the credits at level 6 fall within the higher classification.
- All level 6 modules must have been passed at the first attempt.
- The mark achieved for the *dissertation or other substantial* module is within the higher classification.

Ordinary Degrees

N/A

Restrictions for trailing modules (Taught Masters)

N/A

Prerequisites for processing to MRes research component

N/A

16 Accreditation

Students must complete all of the modules (i.e. taught and research dissertation) to gain IBMS accreditation for the BSc in Biomedical Science

17 Quality Management

All provision is expected to comply with the University processes for quality assurance, the QAA Quality Code and any specific PSRB requirements to ensure the quality of the learning

and teaching on the programme. The University uses the following mechanisms to help evaluate, enhance and review programmes delivery;

Student Evaluation of Module forms
Student Voice Forum
Individual student feedback
Student representatives
Annual Monitoring reports
Periodic review and re-validation process
External Examiner reports
PSRB requirements and accreditation activities
National Student Survey (NSS)

18 Support for Students

The University has a range of departments that offer support for students such as:

- Library & IT Resources
- Inclusion Services
- Careers Service
- Chaplaincy
- Counselling & Wellbeing
- Student Funding and Welfare
- Student Administration

Please access the Glyndŵr website at www.glyndwr.ac.uk to find out more about the Departments

Glyndŵr Student Union offers support for students, please access their website at to find out more. <https://www.wrexhamglyndwrsu.org.uk/>

All students at Wrexham Glyndŵr University are allocated a Personal Tutor whose main responsibility is to act as the first point of contact for their personal students and to provide pastoral and academic support throughout their studies at the University.

19 Equality and Diversity

Glyndŵr University is committed to providing access to all students and promotes equal opportunities in compliance with the Equality Act 2010 legislation. This programme complies fully with the University's Equality and Diversity Policy, ensuring that everyone who has the potential to achieve in higher education is given the chance to do so. Please click on the following link for more information
<https://www.glyndwr.ac.uk/en/AboutGlyndwrUniversity/EqualityandDiversity/>

SUPPLEMENTARY INFORMATION FOR VALIDATION PANEL

Please note, the information provided in this section is to provide additional information for consideration by the validation panel and will not be published with the Programme Specification. Programme teams should add any information relevant to the validation panel which may inform decision making and provide background information not included in the programme specification.

Date of validation event

Programme title(s)

BSc (Hons) Biomedical Science
BSc Biomedical Science
Diploma of Higher Education in Biomedical Science
Certificate of Higher Education in Biomedical Science

Intended date of commencement

Level	Intake point
Level 3	09/21
Level 4	09/21
Level 5	09/22
Level 6	09/23

Rationale for programme design, learning, teaching and assessment strategies

This programme demonstrates the continued relationship between Betsi Cadwaladr University Health Board (BCUHB) and Wrexham Glyndŵr University. Having validated and successfully delivered an MSc Biomedical Science programme and two MRes Programmes (Applied Clinical Research and Applied Biomedical Science Research), and having attained accreditation with the Institute of Biomedical Science (IBMS) for the MSc, the team were keen to develop an undergraduate programme intended to also be accredited with the IBMS to meet the needs of BCUHB and the local population.

Please see section 20 above for further background to the teaching learning and assessment strategies.

Transitional arrangements for current students (if revalidation);

If the proposal under consideration is intended to replace current provision, the programme team must be explicit regarding the management of students enrolled on the current provision and any transitional arrangements as appropriate.

Refer to the Protocol for transferring existing students onto newly validated provision.

Level 3 Not Applicable
 Level 4 Not Applicable
 Level 5 Not Applicable

Welsh Medium

It is important that welsh speaking students are given the opportunity to conduct part of the studies in Welsh where the resources are available to do so, in the table below please outline which areas you feel you are able to accommodate. NOTE: Please ensure a welsh speaker is available where 'Yes' has been specified.

As part of SHAPE and Create you will have the opportunity to work with the University's Welsh language Champion.

Type of learning and/or support available in Welsh	Yes/No
Lectures	No
Tutorials	No
Assignments submitted in Welsh	Yes
Students giving presentations in Welsh	Yes

Employability

We have removed the matrix from the main body of the programme specification, but it would be useful for the validation panel to review the mapping as part of the validation event. Please complete the table below mapping the skills that would be met by each module:

<https://wgyou.glyndwr.ac.uk/wp-content/uploads/2020/02/Glyndwr-Graduate-attributes.pdf>

Module title	CORE ATTRIBUTES				KEY ATTITUDES					PRACTICAL SKILLSETS					
	Engaged	Creative	Enterprising	Ethical	Commitment	Curiosity	Resilient	Confidence	Adaptability	Digital fluency	Organisation	Leadership and team working	Critical thinking	Emotional intelligence	Communication
LEVEL 4															
Professional Practice for the Biomedical & Life Sciences	■	■	■	■	■	□	■	■	■	□	■	■	■	■	■
Cell Biology, Biochemistry and Genetics (SCI430)	■	■	□	■	■	■	■	□	□	■	□	■	■	□	□
Maths and statistics for science (SCI428)	■	■	□	□	■	■	■	■	■	■	■	■	■	■	■
Essential skills for the Life Sciences (SCI429)	■	■	■	■	■	■	■	■	■	■	■	■	■	□	■
Applied physiology in wellbeing (HLT417)	■	□	□	□	■	■	□	□	□	■	■	□	■	□	■
Introduction to Immunology & Microbiology	■	■	□	■	■	□	□	■	□	■	■	■	□	■	■
LEVEL 5															

	CORE ATTRIBUTES				KEY ATTITUDES					PRACTICAL SKILLSETS						
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cell & Molecular Biology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Blood Sciences	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cellular & Histopathology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Research Methods (SCI525)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Medical Microbiology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Advanced laboratory skills for the Biomedical & Life Sciences	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
LEVEL 6																
Research Project	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Biology of Disease	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Clinical Genetics & Cancer Biology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Infectious Disease, Immunity & Inflammation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Advances in Medicine: Diagnostics & Therapeutics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Programme learning outcomes

We have removed the curriculum matrix from the main body of the programme specification to make the published document more suitable for an applicant and student readership. It would however be useful for validation panel to review the curriculum matrix to ensure programme learning outcomes were mapped to modules and exit awards met the required learning outcomes. Please complete the following table

	<i>Module Title</i>	<i>Core or option?</i>	<i>A1</i>	<i>A2</i>	<i>A3</i>	<i>A4</i>	<i>B1</i>	<i>B2</i>	<i>B3</i>	<i>B4</i>	<i>C1</i>	<i>C2</i>	<i>C3</i>	<i>C4</i>	<i>D1</i>	<i>D2</i>	<i>D3</i>	<i>D4</i>	
Level 4	Professional Practice for the Biomedical & Life Sciences	Core	■	■	□	□	■	□	□	□	■	■	□	□	□	□	□	□	
	Cell Biology, Biochemistry and Genetics (SCI430)	Core	■	■	■	□	■	■	■	□	■	□	■	■	■	■	■	■	□
	Maths and Statistics for Science (SCI428)	Core	■	□	□	□	■	■	■	□	□	□	□	■	□	□	□	□	■
	Essential skills for the Life Sciences (SCI429)	Core	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■□	■	■
	Applied physiology in wellbeing (HLT417)	Core	□	□	■	□	■	■	□	□	□	□	□	□	□	□	□	■	■
	Introduction to Immunology & Microbiology	Core	■	■	□	□	■	■	■	□	■	■	■	□	■	■	■	■	■
Level 5	Cell & Molecular Biology	Core	■	■	■	□	■	■	■	□	□	□	□	□	□	□	□	□	■
	Blood Sciences	Core	■	■	■	■	■	■	■	□	□	■	□	□	□	□	□	■	■
	Cellular & Histopathology	Core	■	■	■	■	■	■	■	□	□	■	□	□	□	□	□	■	■
	Research Methods (SCI525)	Core	■	■	□	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Medical Microbiology	Core	■	■	■	■	■	■	■	□	■	■	□	■	□	□	■	■	■
	Advanced laboratory skills for the Biomedical & Life Sciences	Core	□	■	■	■	■	■	■	□	■	■	■	■	■	■	■	■	□
L	Research Project	Core	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

	<i>Module Title</i>	<i>Core or option?</i>	<i>A1</i>	<i>A2</i>	<i>A3</i>	<i>A4</i>	<i>B1</i>	<i>B2</i>	<i>B3</i>	<i>B4</i>	<i>C1</i>	<i>C2</i>	<i>C3</i>	<i>C4</i>	<i>D1</i>	<i>D2</i>	<i>D3</i>	<i>D4</i>
	Biology of Disease	Core	■	■	■	■	■	■	□	□	□	■	□	□	□	□	■	□
	Clinical Genetics & Cancer Biology	Core	■	■	□	■	□	■	■	□	□	■	□	□	□	□	■	□
	Infectious Disease, Immunity & Inflammation	Core	■	■	■	■	■	■	■	□	□	□	■	□	□	□	■	□
	Advances in Medicine: Diagnostics & Therapeutics	Core	■	■	■	■	■	■	□	□	□	□	□	■	□	□	■	□

Programme Management

Wrexham Glyndwr University (WGU)

Dr Ian Ratcliffe (Programme Leader) FAST, WGU
Dr Amiya Chaudhry (Module Leader) FAST, WGU
Dr Neil Pickles (Module Leader) FAST, WGU
Dr Joanne Pike (Module Leader) FSLs, WGU
Dr Jixin Yang (Module Leader) FAST, WGU
Ms Cathy Hewins (Module Leader) FSLs, WGU

Betsi Cadwaladr University Health Board (BCUHB)

Academic

Prof. Stephen Fôn Hughes (Module Leader), BCUHB
Dr Peter Ella-Tongwiis (Module Leader), BCUHB
Dr Stuart Savill (Module Leader), BCUHB

Technical Support

Mrs Heulwen Owens, Healthcare Scientist (Technical Support)

Clinical Support

Prof Iqbal Shergill, BCUHB Consultant Urological Surgeon & Clinical Director North Wales
Clinical Research Centre
Prof Arvind Arya, BCUHB Consultant ENT Surgeon
Mr David Williams, Public Health Wales, Training & Development Manager
Mr Gareth Davies, BCUHB Principal Clinical Scientist
Mr Tony Coates, BCUHB Pathology Site Manager
Ms Amanda Williams, Chief Biomedical Scientist (Histology), The Walton Centre NHS
Foundation Trust

Link to WGU & BCUHB Staff Profiles

- (1) <https://www.glyndwr.ac.uk/en/AcademicSchools/SocialandLifeSciences/Meetthestaff/NursingandCounsellingTherapeuticChildcare/>
- (2) <http://www.betsiresearch.wales.nhs.uk/who-we-are>

Research and Scholarly Activity

All those involved in the development of this programme hold qualifications in chemistry, the biomedical, clinical and healthcare areas, including Masters and /or Doctoral degrees, and are senior fellows, fellows or working towards fellowship of the Higher Education Academy.

All have a proven track record of externality, such as external examiners and external assessors, engagement in professional agencies such as the Institute of Biomedical Science, Health & Care Professions Council, Royal Society of Chemistry and the Science Council.

The team's research interests are broadly based in chemistry, biomedical, clinical and healthcare disciplines. Several members of the team have PhDs, have written or contributed

to text books, and publish in peer-reviewed clinical journals, and between them, the team have many years' experience in academia, professional practice, or have been programme leaders of various programmes.

RESEARCH

Biomedical Science is a Medical Sciences and evidence-based discipline. The research and scholarly activity undertaken by the North Wales Clinical Research Centre underpins our teaching and provides students with a clear understanding of the links between theory and practice within the discipline.

A strong group of Biomedical Scientists are carrying out work on cell and molecular biology and microbiology. These areas focus on a number of disease systems such as cancer (e.g. bladder), diabetes, kidney stone disease, and cardiovascular disease. Several of the projects currently being undertaken are in collaboration with clinical collaborators from local hospitals, national organisations and international partners. In addition, all members of academic staff are supported to engage in scholarly activity and research. Currently, some members of staff are engaged in the writing and co-writing of academic books, pedagogical research as well as submitting research grant applications for external funding.

The expanding profile of research projects carried out by staff and students at the North Wales Clinical Research Centre clearly meets the University's mission of serving the wider community and underpins teaching in a wide variety of ways. Teaching and laboratory classes are delivered by BCUHB staff, who are enthusiastic about the research that they are engaged in and this helps to enthuse, inspire and engage our students. These projects in particular help the students link their theoretical knowledge of the subject to professional experiences. Furthermore, the research dissertation is a fundamentally important element of the BSc programme. Through these projects, staff provides students with opportunities to link their projects with on-going research programmes within the North Wales Clinical Research Centre, or are encouraged to come up with their own project ideas.

Research and scholarly activity informs all of our teaching, the lectures and other teaching materials incorporating the latest research developments. In addition, our staff use social media such as Twitter to ensure that students are guided to latest developments and relevant articles in the scientific literature.

Research Outputs & Grant Capture

Staff within the North Wales Clinical Research Centre are actively involved in undertaking many types of innovative research projects using 'cutting-edge' approaches, as well as being highly productive in our research outputs. As a group of researchers, to-date, the North Wales Clinical Research Centre staff have published >30 peer-reviewed clinical and scientific papers over the last 3 years. Many of these are in high impact journals such as; British Journal of Biomedical Science and Plos One.

Our North Wales Clinical Research Centre staff regularly submits research grant applications for external funding and has collectively captured in excess of **£850k** since 2014 to date.

Specifically, The North Wales Clinical Research Centre houses 5 teaching and research laboratories, and 3 clinical suites situated mainly within the Gwenfro Buildings (Units 4-8), which comprise of teaching and research laboratories that specialise in haematology, transfusion science, cytology, histology, microbiology, cellular and molecular biology, biochemistry, immunology and histology.



North Wales Clinical Research Centre (Wrexham)

North Wales Clinical Research Centre



The North Wales Clinical Research Centre have a dedicated cell culture laboratory, a specialised blood sciences laboratory, clinical suites, phlebotomy room, teaching/research laboratories, including a cell imaging suite, and a good range of teaching and research equipment. Some examples of this equipment include:

- Teaching – seminar room (capacity 20-25 people) to include AV technology, Skype business and video conferencing facility
- Gel documentation systems
- Fluorescence microscope with imaging capture and analysis software.
- BD Accuri C6 flow cytometer
- Beckman Coulter DxH500 full blood count analysers
- Konelab 20 clinical chemistry analyser
- 4 Channel Coagulometer
- Blood Transfusion - Diamed equipment (e.g. incubators and centrifuges)
- 1 fluorescence / luminescence plate reader
- Dade Behring platelet function analyser
- Absorbance plate readers
- Bio-Rad Bioplex 100
- RT qPCR system & PCR systems
- Laminar flow hoods
- Biomerieux Mini-vidas analyser
- CO₂ incubators
- Chromatography systems (Bio Rad & Pharmacia)
- Medium speed & high speed centrifuges
- PAGE electrophoresis and immuno-blotting equipment
- Refrigerated orbital shaker
- -80°C freezers
- Clinical and laboratory fridges/freezers
- Siemens Urinalysis Clinitek Status

The university has an applied science block that houses research equipment that can be used for research.

Underpinning Research and Scholarly Activity in the Faculty of Social and Life Sciences

The Research Centre for Health, Wellbeing & Society supports the research and evidence-based teaching activities of all academic staff in the School of Social and Life Sciences. The centre builds on a key partnership between researchers within public health, education, nursing and social policy, the latter of which is represented by the Social Inclusion Research Unit which sits within the centre's remit. The centre brings together academic staff and research students with shared interests in some of the most fundamental challenges and opportunities in society today.

The programme team are members of various committees within the local health board, including medicines management group and prescribing, and links have been made with service user groups. Programme team members have worked in clinical areas with clients/service users through honorary contracts. This allows the programme team to remain current and contemporaneous, which enhances credibility and ensures that all teaching and learning is applied to nursing. Other significant areas of national involvement include Welsh medium provision and All Wales Pre-registration Education group. One of the programme team acts as a professional body NMC reviewer. Four members of the team are Queen's Nurses. Two members of the programme team have completed the Post Graduate Certificate in E-Learning. This informs the way that technology can enhance learning and is evident in the module teaching and learning strategies. The programme team engages in peer observation, which fosters a culture of ongoing review and challenging of practice in relation to the teaching, learning and assessment elements of the programme.

Within the University there are many committees, which staff are regularly involved in, such as validation panels, academic misconduct hearings, extenuating circumstances panels and assessment appeals. Other Staff membership looking to enhance provision is the Technology Enhanced Learning (including Moodle™) Group. Engagement with these structures/ committees informs the operational and strategic direction and management of the programme.

Underpinning Research and Scholarly Activity in the Faculty of Arts, Science and Technology

A number of programme team members belong to the Faculty of Arts, Science and Technology (FAST) and are active researchers in their respective fields holding doctoral level qualifications. Research within the Applied Science subject area to which the staff belong is chiefly associated with the Centre for Water Soluble Polymers which has a number of well-equipped laboratories at the Wrexham Plas Coch campus. The research is of a highly applied nature and whilst it has as a central theme the study of water soluble polymers, the diverse applications of such materials (including for example polysaccharides, hydrocolloids and biopolymers) translate to multi-disciplinary research activity. Included within this are studies in the area of drug delivery, controlled release, wound gels, pharmaceutical product development, nutrition etc. in addition to numerous other fields: agrochemicals, coatings, personal care, and oil recovery to name just a few. The Research Centre has been established for over 25 years and is led by Professor Pete Williams. Staff are also involved in the supervision of research students at Masters and PhD level. There is also research in the faculty occurring in the fields of biochemistry and microbiology, including external collaborations and PhD studentships.

External Examiner Arrangements

It is intended to approach the External Examiner (Dr Matthew Griffiths, Nottingham Trent University) for the MRes and MSc Biomedical Science Programmes with a view to extending examination to include this programme.

[Link to Dr Griffiths professional profile.](#)

Additional Information

This section may be used to add any additional information relevant for the validation panel, eg;
justification for deviations from the university modular curriculum framework;
any additional information regarding PSRB accreditation