

PROGRAMME SPECIFICATION

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Award titles

Programme Title(s)

MSc Gwyddor Biofeddygol

Master of Science (MSc) Biomedical Science

Postgraduate Certificate (PgCert) Biomedical Science

MRes Ymchwil Gwyddorau Diofeddygol Cymhwysol

Masters of Research (MRes) Applied Biomedical Sciences Research

MRes Ymchwil Clinigol Cymhwysol

Masters of Research (MRes) Applied Clinical Research

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

N/A.

Programme to be included in Graduation Ceremonies

Yes.

Delivery period

September 2023 – September 2027

Intake points

September only

Regulatory details

Regulatory details
Awarding body
Wrexham University
Programme delivered by
Wrexham University
Betsi Cadwaladr University Health Board (BCUHB) – Maelor Academic Unit of Medical & Surgical Sciences (MAUMSS)
Location of delivery
Plas Coch Campus, Wrexham

Regulatory details
Betsi Cadwaladr University Health Board (BCUHB) – Maelor Academic Unit of Medical & Surgical Sciences (MAUMSS)
Faculty/Department
Faculty of Social and Life Sciences (FSLS)
Exit awards available
Postgraduate Certificate (PgCert) Biomedical Science Postgraduate Diploma (PgDip) Biomedical Science Postgraduate Certificate (PgCert) Applied Biomedical Sciences Research Postgraduate Certificate (PgCert) Applied Clinical Research
Professional, Statutory or Regulatory Body (PSRB) accreditation
This information is correct at the time of validation, please refer to the PSRB register for current accreditation status. The existing MSc Biomedical Science programme is accredited by the Institute of Biomedical Science (IBMS) and is consistent with the Royal College of Physicians' syllabus for specialist training in Biomedical Science, and the British Society for Biomedical Science. The existing MRes Applied Biomedical Sciences Research and MRes Applied Clinical Research programmes are approved by the IBMS. All the newly proposed programmes have been designed to align with the requirement of the Institute of Biomedical Science (IBMS) and the team is seeking re-accreditation of MSc Biomedical Science and re-approval of two MRes programmes with IBMS in 2023.
Please add details of any conditions that may affect accreditation (e.g. is it dependent on choices made by a student?) e.g. completion of placement.
N/A
HECoS codes
100265 – Biomedical Science
UCAS code
N/A - Direct Application
Relevant External Reference Points
QAA Subject Benchmark Statement Biomedical Science 2023 https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements/subject-benchmark-statement-biomedical-science-and-biomedical-sciences
QAA Master's Degree Characteristics Statement https://www.qaa.ac.uk/en/the-quality-code/characteristics-statements/characteristics-statement-masters-degrees

Regulatory details
Credit and Qualifications Framework (CQFW): level descriptors https://www.gov.wales/credit-and-qualifications-framework-cqfw-level-descriptors The Frameworks for HE Qualifications of UK Degree-Awarding Bodies https://www.qaa.ac.uk/the-quality-code/qualifications-frameworks Relevant IBMS accreditation guidance https://www.ibms.org/education/university-information/
Mode of study
Full & part time
Normal length of study for each mode of study
MSc/MRes 1 year full time, 2 years part time PG Cert Biomedical Science - 1 year part time
Language of study
English
Transitional arrangements for re-validated provision if applicable
N/A All the current students will be taught out on the existing programme.
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 Taught Masters Degrees Regulations for Masters of Research Language Admissions Policy

OFFICE USE ONLY	
Date of validation event:	15 th June 2023
Date of approval by Academic Board:	17 th August 2023
Approved Validation Period:	September 2023 – 5 years
Transitional arrangements approved (if revalidation)	N/A Students will be taught out
Date and type of revision:	26th Sept 2023: AM0 delivery semester change for SCI726 and SCI723 December 2023 Change of faculty from FAST to FSLs Sept 2025: SCI721D created for MSc Biomedical Science to accommodate the derogation approved in Sept 2024, setting the pass mark for SCI721 at 50% in line with IBMS accreditation requirements.

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](#)

International entry qualifications are outlined on the UK National Information Centre for global qualifications and skills (UK ENIC) 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 [academic-entry-requirements](#) for details), including IELTS.

International students are required to provide an English Language Certificate which meets the requirements of the University (please see [English-language-requirements](#) for details).

Non Standard entry criteria

To be considered for the course, candidates must meet one or more of the following criteria prior to the commencement of the programme:

- A minimum of 2:2 honours degree from Wrexham Glyndŵr University or another approved degree-awarding body, which has a significant content of biological and healthcare sciences (e.g. Biomedical Science, Human Biology, Biochemistry, Biological Sciences, etc.).
- Have relevant work experience at a senior level that is deemed to compensate for the lack of formal qualifications and have held a position of management responsibility within the biomedical, clinical or healthcare sectors for a minimum of three years within the previous five years. In a case where there is a lack of clarity or a need to gain deeper insight into a candidate's suitability for the programme of study, an informal interview with the candidate may be held.
- In addition to the above, candidates must also have practical laboratory experience that would have already been gained from undertaking their undergraduate programme of

study inclusive of relevant QAA benchmark standards such as Biomedical Science and Biological Sciences.

- Applicants would be expected to supply a statement of intent at point of entry where they would flag up an area of research interest which would then be discussed.

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.

DBS Requirements

DBS is not required on entry of these programmes.

Students undertaking a research project (dissertation) that entails working in an area other than their usual place of work must obtain a relevant DBS.

Students undertaking a research project (dissertation) who may be working with patients, vulnerable people and children must obtain an enhanced disclosure.

Suitability for Practice Procedure

The Suitability for Practice Procedure will apply to these programmes. This procedure applies to students enrolled on a programme who undertake placements or professional practice as part of their studies, and whose professional conduct and practice during the period of academic study is a key element of their satisfactory progress toward an award and toward professional recognition.

Although there are no practice placements associated with these programmes, many students are engaged within professional practice and are subject to PSRB requirements adhering to codes of conduct. Therefore, any students who fall below the standards of behaviour and practice expected of them may be referred to Suitability for Practice scrutiny.

Aims of the programme

The primary aim of these programmes is to provide students with up-to-date biomedical science courses that meet key component standards for a Master's degree laid down by the Institute of Biomedical Science (IBMS) and QAA Biomedical Science Subject Benchmark 2023. In particular, the Master of Research (MRes) is a specialised, taught master degree specifically designed to deepen students' understanding of the core research principles and enhancing their research skills and abilities. The aims of the three individual programmes are listed below:

MSc Biomedical Science

The MSc Biomedical Science programme provides an opportunity for in-depth study in all of the major disciplines covering biomedical science, as well as current regulatory frameworks, information communication technology and research methods. Topics of focus will include clinical chemistry, cellular and histopathology, haematology and transfusion as well as microbiology and immunology. This programme will

- Provide students with an advanced study of biomedical sciences, which underpins professional development.
- Provide a high level of scientific knowledge of disease processes, which underpin diagnosis and health.
- Develop and inform critical appreciation of scientific development in relation to diagnostic laboratory pathology.
- Increase self-awareness and insight into both professional and ethical issues relevant to the practice of biomedical science.
- Develop a mastery of the subject area through a research dissertation.
- Develop advanced professional practice to benefit healthcare services and professions related to the practice of biomedical science.
- To provide students with advanced scientific research training appropriate for Level 7.
- To develop students' self-management, planning and communication skills.

MRes Applied Biomedical Sciences Research

The MRes Applied Biomedical Sciences is for students who wish to work in clinical medicine or to pursue further clinical research following completion of the MRes qualification. The focus of this MRes qualification is to develop students' deep understanding of the core principle of lab based clinical research as well as the ability to conduct it. This programme will

- Provide biomedical science graduate students with the opportunity to develop an independent, substantial piece of scholarly research into an area that fits with the department's supervisory expertise.
- Encourage students to contribute to broader academic debates about the methods, approaches and practices that underpin biomedical science research.
- Provide students with advanced scientific research training appropriate for both Level 7 and doctoral research in the biomedical science.
- Develop students' self-management, planning and communication skills.
- Prepare fully those students with suitable interests for further postgraduate research at the Master/Doctor of Philosophy level and beyond.

MRes Applied Clinical Research

The MRes Applied Clinical Research will focus on quantitative and qualitative research that is not lab based and students will take a professional practice module rather than lab-based module to underpin their research practice. The focus of this MRes qualification is to develop students' deep understanding of the core principle of non-lab based clinical research as well as the ability to conduct it. This programme will

- Provide graduate students with the opportunity to develop an independent, substantial piece of scholarly research into an area that fits with the department's supervisory expertise.
- Encourage students to contribute to broader academic debates about the methods, approaches and practices that underpin biomedical science research.
- Provide students with advanced scientific research training appropriate for both Level 7 and doctoral research.
- Develop students' self-management, planning and communication skills.
- Prepare fully those students with suitable interests for further postgraduate research at the Master/Doctor of Philosophy level and beyond.

Distinctive features of the programme

The proposed programmes have been jointly developed and subsequently delivered between Wrexham University and Betsi Cadwaladr University Health Board (BCUHB), thus, reflecting and highlighting the well-established, ongoing and effective collaboration between the two organisations.

The newly established BCUHB Maelor Academic Unit of Medical & Surgical Sciences (MAUMSS) is designed to encourage and support research within the Health Board and to promote academic activity, basic sciences, and clinical research across North Wales and beyond. [MAUMSS](http://www.maumss.com) is based in Wrexham and staffed by an interdisciplinary team (20-25 staff) of academics, clinicians, nurses, research scientists and postgraduate students who are available to lead on and help other healthcare professionals develop and run all kinds of clinical research projects (e.g. cancer, cardiovascular disease, diabetes, arthritis, Alzheimer's, etc.). It has several laboratories (e.g., blood sciences, tissue culture, general teaching, PCR, and histology) containing state-of-the-art molecular, analytical and diagnostic equipment. There are also meeting rooms, teaching rooms, video-conferencing and hot-desk facilities. All of this is available for use to encourage new researchers, help maximise research impact and ultimately provide better outcomes for patients and the public. All MAUMSS facilities and resources are openly accessible to Wrexham University staff and students (www.maumss.com).

The programmes sit in the Applied Science Department of Wrexham University, which offers the following benefits to the students.

- (i) The opportunity to be embedded in a culture of research fostered by the academic staff.
- (ii) Support to begin learning or progress current Welsh Language skills including carefully curated Welsh content during each academic year and the option for tutorials in Welsh.
- (iii) Two newly renovated science laboratories with state-of-the-art AV systems and teaching equipment.
- (iv) Hands-on practical experience of modern laboratory equipment including a broad range of analytical instruments such like UV-vis, FTIR, fluorescence, NMR, atomic absorption spectrometers and HPLC, GC-MS, MALDI-TOF etc.

- (v) Access to the FACE 3D Lab for projects related to scanning and printing of artefacts to support research.

The Master of Science and Research (MSc/MRes) framework offers a flexible programme with named routes to cater for the learning and personal/professional development needs of individuals working within a biomedical, clinical and healthcare perspective. The programmes are distinctive in that they provide 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 members of different biomedical, clinical and healthcare professionals within an academic community. This ensures whatever route is taken through the programmes, all students successfully completing will be thoroughly grounded in ethical and reflective practice, have a sound subject specific and research knowledge base, and be prepared as leaders and to work at an advanced level. The programmes are 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 them are engaged in national networks, external peer review and consultancy within the general fields of biomedical sciences, medicine and healthcare.

Specifically, each programme provides the following distinctive features:

MSc Biomedical Science

The MSc in Biomedical Science gives students the opportunity to develop their research skills, explore specialist areas, and complete an independent research project (60 credits). Core modules will develop the students existing knowledge, while improving their analytical skills by undertaking laboratory-based investigations and employing sophisticated and advanced 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 Higher Specialist 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 the Institute of Biomedical Science Higher Specialist examination, Advanced Practice in Biomedical Science, and those wishing to enhance the career prospects of those aspiring to middle and senior management positions within the NHS. Students on this programme will also be well placed for careers in research, teaching or to pursue studies towards a PhD, Professional Doctorate or graduate entry medicine.

MRes Applied Biomedical Sciences Research

The MRes Applied Biomedical Sciences Research programme has been designed to serve biomedical, medical, and life sciences graduates wanting to develop knowledge and skills in research focussing on human health and disease.

This programme equips graduates with the skills and subject specific knowledge needed to prepare students for the next stage of their careers, whether that is a research-based career in academic biomedicine or progression within other employment. The programme focuses on laboratory-based clinical research, and provides ideal training for students who want to work in industry, within the healthcare setting (e.g. NHS) or subsequently wish to move onto a PhD or Professional Doctorate programme, or who simply wish to undertake a significant research project at Masters level.

MRes Applied Clinical Research

The MRes Applied Clinical Research programme has been designed to serve healthcare professionals such as nursing, physiologists, audiology, midwifery, physiotherapy, psychology, radiology and medical sciences graduates wanting to develop knowledge and skills in research focussing on human health and disease.

This programme equips graduates with the skills and subject specific knowledge needed to pursue a research-based career, whether that is in clinical medicine, healthcare or a progression within other employment. The programme focuses on clinical research (e.g. audits, clinical outcome measures, quality improvement, qualitative or quantitative), and provides ideal training for students who want to enhance their careers within the NHS and health sector, or subsequently wish to move onto a PhD or Professional Doctorate programme, or who simply wish to undertake a significant research project at Masters level.

In summary, the programmes are designed to enhance the employability of individuals through the in-depth development of contemporary subject knowledge, related transferable skills and in turn to better meet the biomedical, clinical and healthcare needs of the populations they serve.

Credit Accumulation and exit awards

Exit Awards	Requirements
Master of Science Biomedical Science	180 credits at level 7, with 120 credits of taught modules and 60 credits of dissertation.
Postgraduate Diploma in Biomedical Science	120 credits at level 7 (This is awarded when a student has successfully completed 120 credits in the taught element but does not wish to progress to the dissertation stage. To be eligible for a diploma the student must have studied and passed the taught compulsory modules.)
Postgraduate Certificate in Biomedical Science (PgCert BMS)	60 credits at level 7 The exit qualification will be granted when the student for whatever reason is not eligible for a Postgraduate Diploma or MSc/MRes and can be gained after successful completion of any 60 credits of taught modules. Undertaking the PgCert BMS as an Intended award may be an attractive and viable option for healthcare professionals as part of their career development and CPD. The intended Postgraduate Certificate in

	Biomedical Science will comprise of any 60 credits of taught modules
Master of Research Applied Biomedical Sciences Research	180 credits at level 7, with 80 credits of taught modules and 100 credits of research component (Dissertation: Pilot Study and Dissertation: Research Project)
Master of Research Applied Clinical Research	180 credits at level 7, with 80 credits of taught modules and 100 credits of research component (Dissertation: Pilot Study and Dissertation: Research Project)
Postgraduate Certificate in Applied Biomedical Sciences Research (PgCert ABSR)	60 credits at level 7 (This award is not intended to be the initial principal aim of the student. It is essentially a fall-back exit qualification granted when the student for whatever reason is not eligible for a Postgraduate Diploma or MSc/MRes and can be gained after successful completion of 60 credits.) However, undertaking the PgCert ABSR may be an attractive and viable option and subsequent opportunity for healthcare professionals to undertake specific modules (e.g. Advanced Research Skills) as part of their career development and CPD.
Postgraduate Certificate in Applied Clinical Research (PgCert ACR)	60 credits at level 7 (This award is not intended to be the initial principal aim of the student. It is essentially a fall-back exit qualification granted when the student for whatever reason is not eligible for a Postgraduate Diploma or MSc/MRes and can be gained after successful completion of 60 credits.) However, undertaking the PgCert ACR may be an attractive and viable option and subsequent opportunity for healthcare professionals to undertake specific modules (e.g. Advanced Research Skills) as part of their career development and CPD.

Programme Structure Diagram, including delivery schedule

It is proposed that the new programmes will be delivered via blended learning (combined face-to-face teaching and distance learning). This mode of delivery would be unique compared to the traditional face-to-face or distance learning approach. This would essentially mean that students can travel from distances to study a programme, without having to commit to living in Wrexham. It is also the preferred option for study by employers who will be releasing their staff to undertake their studies.

Each module takes the form of a learning package consisting of face to face teaching supported and developed by text and online resources (accessed via the module space on Moodle), such as blogs, learning diaries, self-assessment questions, websites, discussion boards, etc. Typically, each module is designed to be studied over a 10-week learning period, commencing with a three-day block delivery at the university and/or the BCUHB-Maelor Academic Unit of Medical & Surgical Sciences (MAUMSS). The first three days introduce the students to the module contents (including support provision, learning

materials and assessment details) and provide an opportunity for the delivery of some subject matter and, where appropriate, relevant practical work.

MSc Biomedical Science Full-time Delivery (Level 7)

Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
SCI726	Professional Practice for the Biomedical & Clinical Sciences	20	Core	1
SCI727	Analytical & Molecular Techniques in Biomedical Sciences	20	Core	2
SCI719	Advanced Research Skills	20	Core	1
SCI728	Clinical Medicine: Pathology of Disease	20	Core	1
SCI729	Blood Sciences	20	Core	2
SCI730	Clinical Immunology and Microbiology	20	Core	2
SCI721D	Dissertation: Research Project	60	Core	3

MSc Biomedical Science Part-time Delivery (Level 7)

Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
SCI726	Professional Practice for the Biomedical & Clinical Sciences	20	Core	Y1S1-S2
SCI727	Analytical & Molecular Techniques in Biomedical Sciences	20	Core	Y1S2
SCI719	Advanced Research Skills	20	Core	Y2S1
SCI728	Clinical Medicine: Pathology of Disease	20	Core	Y1S1
SCI729	Blood Sciences	20	Core	Y2S2
SCI730	Clinical Immunology and Microbiology	20	Core	Y1S2
SCI721D	Dissertation: Research Project	60	Core	Y2S3

Postgraduate Certificate (PgCert) Biomedical Science (60 Credits)

Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
SCI726	Professional Practice for the Biomedical & Clinical Sciences	20	Option	1-2
SCI727	Analytical & Molecular Techniques in Biomedical Sciences	20	Option	2
SCI719	Advanced Research Skills	20	Option	1
SCI728	Clinical Medicine: Pathology of Disease	20	Option	1
SCI729	Blood Sciences	20	Option	2
SCI730	Clinical Immunology and Microbiology	20	Option	2

MRes Applied Biomedical Sciences Research Full-time Delivery (Level 7)

Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
SCI718	Negotiated Learning	20	Core	1
SCI727	Analytical & Molecular Techniques in Biomedical Sciences	20	Core	2
SCI719	Advanced Research Skills	20	Core	1
SCI728	Clinical Medicine: Pathology of Disease	20	Core	1
SCI720	Dissertation: Pilot Study	40	Core	2
SCI721	Dissertation: Research Project	60	Core	3

MRes Applied Biomedical Sciences Research Part-time Delivery (Level 7)

Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
SCI718	Negotiated Learning	20	Core	Y2S1
SCI727	Analytical & Molecular Techniques in Biomedical Sciences	20	Core	Y1S2
SCI719	Advanced Research Skills	20	Core	Y1S1
SCI728	Clinical Medicine: Pathology of Disease	20	Core	Y1S1
SCI720	Dissertation: Pilot Study	40	Core	Y2S2
SCI721	Dissertation: Research Project	60	Core	Y2S3

MRes Applied Clinical Research Full-time Delivery (Level 7)

Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
SCI718	Negotiated Learning	20	Core	1
SCI726	Professional Practice for the Biomedical & Clinical Sciences	20	Core	1-2
SCI719	Advanced Research Skills	20	Core	1
SCI728	Clinical Medicine: Pathology of Disease	20	Core	1
SCI720	Dissertation: Pilot Study	40	Core	2
SCI721	Dissertation: Research Project	60	Core	3

MRes Applied Clinical Research Part-time Delivery (Level 7)

Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
SCI718	Negotiated Learning	20	Core	Y2S1
SCI726	Professional Practice for the Biomedical & Clinical Sciences	20	Core	Y1S1-S2
SCI719	Advanced Research Skills	20	Core	Y1S1
SCI728	Clinical Medicine: Pathology of Disease	20	Core	Y1S1
SCI720	Dissertation: Pilot Study	40	Core	Y2S2
SCI721	Dissertation: Research Project	60	Core	Y2S3

Intended learning outcomes of the programme

On completion of the stated exit awards, students will be able to:

Postgraduate Certificate of All Routes	
Knowledge and understanding	
A1	Demonstrate an extensive knowledge and a critical understanding of relevant theoretical concepts.
A2	Demonstrate a critical understanding of a broad range of regulatory bodies and professional standards as applied to the field of biomedical and health sciences.
A3	Synthesise integrate knowledge and understanding from different areas of biomedical and clinical sciences.
A4	Apply a critical and theoretically-informed perspective to current developments (e.g. new research, guidelines and practice) in biomedical and health sciences.
Intellectual skills	
B1	Critically assess theories and propose solutions to biomedical and healthcare related issues and problems based upon research and scholarship.
B2	Apply problem-solving and decision-making skills to identify, assess, plan, and implement within the field of biomedical and healthcare.
B3	Articulate appreciations of the uncertainty, ambiguity and limits of knowledge in the context of biomedical and health sciences.
Subject skills	
C1	Synthesize coherent arguments to engage in debate about biomedical and health subject areas.
C2	Reflect critically on specific biomedical and health sciences subject areas.
C3	Critically explore values and beliefs underpinning the nature of professional biomedical and health care practice.
Practical, professional and employability skills	
D1	Communicate with others in a clear and articulate manner, both verbally and in writing and use appropriate academic conventions in the production and presentation of work.
D2	Exercise a reflective capacity by the recognition of 'self' and 'others' in considering issues in biomedical and health sciences.
D3	Demonstrate independent learning ability required for continuing professional development (CPD).

Postgraduate Diploma of Biomedical Science (in addition to meeting the learning outcomes of the Postgraduate Certificate indicated above)	
Knowledge and understanding	
A5	Evidence critical awareness of contemporary professional issues and insight into the cultural, political and professional dimensions of leadership within biomedical and healthcare organisations.
Intellectual skills	
B4	Deal with complex issues both systematically and creatively, make sound judgements, possibly with the absence of complete data and communicate their conclusions clearly to specialist and non-specialist audiences.
Subject skills	
C4	Critically evaluate current theories of biomedical subject specific disciplines.
Practical, professional and employability skills	
D4	Make decisions in complex and unpredictable situations, and to be able to deploy academic and practical techniques for the integration of academic knowledge and understanding into effective professional practice

Master of Science & Masters of Research (all routes, in addition to meeting the learning outcomes of the Postgraduate Certificate and Postgraduate Diploma indicated above)	
Knowledge and understanding	
A6	Conduct a piece of independent research, which provides critical insight and analysis of a relevant biomedical, clinical or healthcare topic.
Intellectual skills	
B5	Utilise self-direction and originality in tackling and solving problems and act autonomously in planning and implementing tasks.

Learning and teaching strategy

The MSc & MRes programmes framework will be delivered through a broad range of pedagogical strategies in line with the University's Active Learning Framework which is a teaching and learning approach that emphasises student engagement and participation in the learning process. Fostering a blend of asynchronous content with supported face to face sessions, the delivery style will see learners engaged with materials produced and carefully curated by staff to factor in any additional learning needs of students. With an ambitious approach to embrace learning technology the new programmes will champion the use of innovative teaching practices such as SCALE-UP, simulation and the use of the hybrid and flexible facilities in the newly refurbished laboratories. This will also ensure that students are developing other critical skills for employment alongside their subject knowledge such as digital fluency, team working and leadership.

The teaching and learning strategy will be achieved through the use of a variety of methods which include lectures, seminars, workshops, practical sessions/lab-based study, discussion, debates, group tutorials, case studies, problem-based learning, and visiting speakers, within a framework of inter-professional education wherever possible. 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 online resources especially journals and e-books. In all these endeavours, tutors act as facilitators of learning, rather than merely as a means of transmitting knowledge, to guide students to work in a critical way with theoretical and empirical research and scholarly sources.

Academics of the Applied Science and BCUHB Staff have many years of experience in offering distinctive programmes of study at undergraduate and postgraduate levels. The University has considerable experience of supporting the learning needs of mature students and of students generally with 'non-standard entry' qualifications. Methods of teaching, learning and assessments are indicated clearly in each module descriptor and the list below describes the variety of approaches used by tutors.

Module delivery

At the start of each module, students will attend three taught days, during which the module contents (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, discussion boards, chat rooms or telephone) and these will be explained and organised during the module delivery.

On completion of the allocated time for the module, there will be a consolidation day. This will include any formal assessment – as described in the module descriptor – and module evaluation and staff/student liaison meetings.

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. Wherever possible, a set text will be part of the learning package. Students will be encouraged to carry out self-assessment which will be progressively developed using a variety of in-text questions (ITQs) and self-assessment questions (SAQs) at the end of each section of work. Answers to these questions – together with explanatory notes where appropriate – will give valuable ongoing feedback to the students as they progress through the learning materials.

(b) Online learning

The online materials (using the University Moodle VLE) will be used to provide the following related to the programme:

- A structured weekly guide to the module content
- Access to self-assessment questions
- Assessment details and guidance on presenting the assignment(s)
- Access to distant, appropriate websites
- Access to lecture recordings
- Access to the Library online support (including e-books, open access journals, the Encyclopaedia of Life Sciences)
- Access to the module Discussion Board and Chat Room
- e-mail links to the module tutor(s)
- Text references.
- Access to the university support infrastructure.

Student support

Time will be given each week to student/staff interaction via e-mail. Students will be allocated a time slot during which the module tutor will answer e-mails concerning the module content and/or assessment. The online real-time support to students is also available through MS Teams upon appointment.

Practical work

At level 7, the amount of practical work varies between programmes, e.g. MSc, MRes (lab-based) and MRes (non-lab), with those undertaking the laboratory based modules being exposed and trained to use the advanced specialist equipment (e.g. molecular analysis, flow cytometry, etc.).

All students will undertake a dissertation module and carry out a practical project involving a relevant empirical study. These provide the opportunity for students to develop their data handling and analytical skills to an advanced level, as well as their practical skills.

All practical work undertaken will be, as appropriate, fully compliant with any ethics, data management, confidentiality, GDPR, and laboratory safety systems and regulations as needed. Before the implementation of any project, ethical approval must be sought from the university research ethics committee and all the risk assessment and COSHH assessment forms must be reviewed and signed off by the supervisors.

BCUHB-MAUMSS laboratories conform to the local Health Board pathology standards, which are compliant to the ISO15189 medical laboratory accreditation standards. All new members of staff and/or students working in the laboratories will be formally inducted, trained as appropriate, and provided with relevant documentation (e.g. standard operating procedures, etc) prior to undertaking any laboratory work. Formal health and safety induction will also be provided to all students in these programmes before they make use of laboratories in Applied Science Department of the university.

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 the programmes of study. Employability skills include self-management, team working, business and customer awareness, problem-solving, communication and literacy, application of numeracy, and application of information technology. All the modules have identifiable employability learning outcomes.

Visiting lecturers

Visiting lecturers (guest speakers) will be used to support the delivery of the programmes. This will provide the necessary expertise in the discipline areas and will include contributions from a range of highly experienced and qualified personnel involved in all aspects of biomedical, clinical and healthcare sciences and related industries.

The University Skills Framework

At Wrexham 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 and Employability team are available to provide additional careers education activities for all programmes as well as individualised information, advice and guidance. Learners gain access to self-directed learning resources by logging into our careers portal.

Here students can book professional careers guidance appointments and make employment and volunteering applications and learn to build and develop their CV and applications.

Work based/placement learning statement

Taught modules will not form any work-based learning as part of the MSc & MRes programmes framework. However, research projects/dissertations may be undertaken at the student's area of work. In that case, the host organisation (student's workplace) is responsible for ensuring compliance with law and good professional conduct (e.g. H&S and ethics) for work undertaken within its remit. The students still need to get the ethical approval on their research project (if applicable). Student undertaking their dissertation at their placement of work will be assigned an academic supervisor from the university and will also be assigned to the local employer training officer (e.g. Pathology training officer).

Students undertaking their dissertation will be allocated a named dissertation supervisor who will meet with the student individually and on a regular basis. Group sessions addressing general issues will also be provided and students will also be encouraged to attend departmental research seminars in areas that will benefit them.

Welsh medium provision

The programmes will be primarily delivered through the medium of English. However, as a proud Welsh institution, we embrace opportunities for all students to engage with the Welsh language and so a key module (*i.e.* Advanced Research Skills) shared by all three masters programmes is identified where elements of Welsh language will be embedded for all students. This will include not only opportunities to learn and speak some Welsh but also an awareness of compliance requirements within public sector organisations.

Furthermore, the programme team will work with the Head of Welsh Medium Development to promote stand-alone Welsh language qualifications to students. For students who wish to undertake part or all of their assessments in Welsh, it will be encouraged to do so.

Some BCUHB-MAUMSS members are fluent in Welsh and would be available to help and provide some teaching and learning through the medium of Welsh.

Assessment strategy

Any assessment has three primary aims:

1. To provide a framework for the assessment of students' competence, knowledge and understanding and a method for evaluating a student's abilities for the purposes of graduation and certification.
2. To provide a vehicle for the promotion of student learning, during the stages of both preparing for the assessment and reading feedbacks from the tutors afterward.
3. To provide information to teaching staff and external examiners on the quality of the provision and to ensure equity of standards across the HE sector.

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 most appropriate methods of assessment vary between modules. The methods of assessment used will reflect the content and learning objectives of each module, ensuring that students get different opportunities to showcase their ability, knowledge, understanding and transferable skills. Students will be made fully aware of the methods of assessment and the weighting of individual components to be used in each module from the outset, as well as the marking criteria *etc.*

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, which will be assessed in an appropriate manner.

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

All assessments are peer reviewed for consistency of standard and layout before issuing to students. Samples of assessment tasks will also be sent to the external examiner for review, in line with university regulations, to ensure that each assessment is explicit in its intent, and that it is valid and reliable. Samples of minimum 25% of student assessments for each module are moderated by a tutor in the same subject area in order to ensure the correct standard of marking before being sent to the External Examiner for further scrutiny. All stages of peer review and moderation are recorded on a proforma for each module.

Module leaders will collate work and are responsible for presenting this at assessment boards, to enable ratification of results. External examiners will attend assessment boards and contribute to the process, to ensure external validity of assessment. Students will be informed of provisional results prior to an assessment board, and in writing following ratification of the results, with re-submission dates if needed. An overview of module assessments throughout the programme, with an indication of submission dates in a typical academic year is summarised in the table below.

Module code & title	Assessment type and weighting	Indicative submission date
SCI726 Professional Practice for the Biomedical & Clinical Sciences	Written Assignment 60% Presentation 40%	Wk 27, Sem 2 Wk 19, Sem 1
SCI727 Analytical & Molecular Techniques in Biomedical Sciences	Written Assignment 75% Presentation 25% Attendance Pass/Fail	Wk 33, Sem 2 Wk 39, Sem 2
SCI719 Advanced Research Skills	Coursework 75% Presentation 25%	Wk 17, Sem 1 Wk 19, Sem 1
SCI728 Clinical Medicine: Pathology of Disease	Coursework 100%	Wk 18, Sem 1
SCI729 Blood Sciences	Written Assignment 100%	Wk 41, Sem 2
SCI730 Clinical Immunology and Microbiology	Presentation 30% Coursework 70%	Wk 38, Sem 2 Wk 40, Sem 2
SCI718 Negotiated Learning	Negotiated Learning 30% Portfolio 70%	Wk 12, Sem 1 Wk 24, Sem 1

Module code & title	Assessment type and weighting	Indicative submission date
SCI720 Dissertation: Pilot Study	Written Assignment 70% Presentation 30%	Wk 36, Sem 2 Wk 41, Sem 2
SCI721/SCI721D Dissertation: Research Project	Dissertation or article 80% Presentation 20%	Wk 2, Sem 3 Wk 12, Sem 1 following academic year

Assessment and award regulations

Derogations

For MSc Biomedical Science programme, the pass mark for SCI721D Dissertation: Research Project is set at 50%.

Non Credit Bearing assessment

None.

Restrictions for trailing modules (Taught Masters)

There are no specified modules which cannot be trailed before moving onto the research block of the programme.

Prerequisites for processing to MRes research component

The following two modules must be studied and subsequently passed prior to proceeding to the Dissertation: Research Project module.

Advanced Research Skills
Dissertation: Pilot Study

Accreditation

The existing MSc Biomedical Science programme is accredited by the Institute of Biomedical Science (IBMS) and is consistent with the Royal College of Physicians' syllabus for specialist training in Biomedical Science, and the British Society for Biomedical Science.

The existing MRes Applied Biomedical Sciences Research and MRes Applied Clinical Research programmes are approved by the IBMS.

All the newly proposed programmes have been designed to align with the requirement of the Institute of Biomedical Science (IBMS) and the team is seeking re-accreditation of MSc Biomedical Science and re-approval of two MRes programmes with IBMS in 2023.

Quality Management

All provision is expected to comply with the University processes for quality assurance, the QAA Subject Benchmark 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 Questionnaire
Student Voice Forum
Individual student feedback
Student representatives
Continuous Programme Monitoring and Enhancement Reports
Periodic review and re-validation process
External Examiner reports
PSRB requirements and accreditation activities
National Student Survey (NSS)

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 University website at www.glyndwr.ac.uk to find out more about the Departments.

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 tutees and to provide pastoral and academic support throughout their studies at the University. All the personal tutors are permanent academic staff members at Applied Science Department to ensure the efficient management of the students following the university regulations.

Equality and Diversity

Despite their small size, the Applied Science and MAUMSS teams are composed of academic and operational staff members from diverse backgrounds both in terms of their academic and professional experience, and their personal attributes. This makes for a dynamic and varied student experience that prioritises inclusive practice and aims to highlight diverse profiles of STEM practitioners, particularly with identities from historically under-represented groups. Staff members are heavily involved in the academic committees at the university level including the Equality Committee, University Race Equality Discussion Group, LGBTQ+ Network, White Ribbon Action Group and Sustainability Committee. Within the programme

team, there is a focused and well-defined shared mission and a supportive culture amongst the members.

Wrexham 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 about [equality and diversity](#).