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PRIFYSGOL glyndŵr Wrecsam | Wrexham glyndŵr UNIVERSITY

PROGRAMME SPECIFICATION

When printed this becomes an uncontrolled document. Please check the Programme Directory for the most up to date version by clicking here.

> **MSc Data Science and Big Data Analytics**
> **MSc Data Science and Big Data Analytics with Advanced Practice**
>
> **Internal Programme Title(s)** *(if different to the title on the certificate)*

1	**Awarding body**
	Glyndŵr University
2	**Programme delivered by**
	Glyndŵr University
3	**Location of delivery**
	Plas Coch Campus, Wrexham Global Pathways Academy (please refer to Partner Appendix)
4	**Faculty/Department**
	Faculty of Arts, Science and Technology / Computing
5	**Exit awards available**
	Pg Dip Data Science and Big Data Analytics Pg Dip Data Science and Big Data Analytics with Advanced Practice Pg Cert Computing
6	**Professional, Statutory or Regulatory Body (PSRB) accreditation**

	BCS Accreditation may be sought at a later stage, and the programmes have been designed to facilitate this process. **This information is correct at the time of validation, please refer to the PSRB register for current accreditation status.**
7	**Please add details of any conditions that may affect accreditation (e.g. is it dependent on choices made by a student?)** *eg. completion of placement.*
	N/A
8	JACS3 / HECoS **codes**
	I490 / 100359
9	UCAS **code**
	N/A
10	**Relevant QAA subject benchmark statement/s**
	Guidance – please list relevant QAA subject benchmark statement/s *Computing (2019)* https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-computing.pdf?sfvrsn=ef2c881_10 *Master's Degree in Computing (2019)* https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-computing-(masters).pdf?sfvrsn=15f2c881_10 *Master's Degree (2015)* https://www.qaa.ac.uk/docs/qaa/quality-code/master's-degree-characteristics-statement.pdf?sfvrsn=6ca2f981_10
11	**Mode of study**
	Full & part time, part time only available to Home/EU students
12	**Normal length of study**
	Standard route: Full-time: 1 Year/Part-time: 2 Years Advanced Practice route: Full-time: 20 months/Part-time: 40 months
13	**Language of study**
	English
14	**The following University Award Regulations apply to this programme**

✓ General Regulations and Definitions

☐ Regulations for Bachelor Degrees, Diplomas, Certificates and Foundation Degrees

✓ Regulations for Taught Masters Degrees

☐ Regulations for Taught Masters Degrees taught entirely by online distance learning

☐ Regulations for Integrated Masters Degrees

☐   Regulations for Masters of Research

☐   Regulations for Professional Graduate Certificate in Education

☐   Regulations for Postgraduate Certificate in Education

☐   Regulations for Certificate in Education

☐   Regulations for Graduate Diploma Graduate Certificate

☐   Regulations for BTEC Higher National Qualifications

☐   Regulations for Glyndŵr University Certificate of Attendance, Glyndŵr University Certificate of Continuing Education, Glyndŵr University Professional Certificate

✓   Regulations Glyndŵr University English Language Test

17 Criteria for admission to the programme

Standard entry criteria

Entry requirements are in accordance with the University's admissions policy click here

Normal entry requirements for full time and part time will be one of:
  (a) A Bachelor of Science Honours degree, normally 2:2 or above, in a relevant subject area for example Computing, Maths etc.,
  (b) Academic qualifications in other subject areas or at a lower level than honours degree but supported by a maturity of experience at a professional level in a relevant specialist area.
  (c) Equivalent qualifications of another overseas country which are deemed satisfactory by the program team.

Normally, the applicants applied through entry points (b) and (c) will be required to attend for an interview. This is not always possible, e.g. overseas students, in which case the application form and 'home' tutor's recommendations will be used to decide suitability; phone, internet and video conferencing may also be used. Places on the programmes will be offered on the basis of applicants' background qualifications and, where appropriate, experience.

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 require a UKVI Approved Secure English Language Test (SELT) (please see http://www.glyndwr.ac.uk/en/Internationalstudents/EntryandEnglishLanguageRequirements/ for details).

DBS Requirements

N/A

Suitability for Practice Procedure

N/A

Non-standard entry criteria and programme specific requirements

N/A

18 Recognition 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. Any programme specific restrictions are outlined below

Programme specific restrictions

N/A

19 Aims of the programme

The programme aims to provide a platform for more advanced studies, acquisition of higher-level skills and knowledge, increased employability, and professionalism. The intention of our master's level suite of programmes is to build upon the experiences and achievements of our students and take them to the next level of personal development.

The programme has overarching aims, which will provide students with:
- A deepened and specialist knowledge in a specific field of computing;
- Higher-level technical and professional skills;
- Awareness of emerging trends and technologies in their specialist field;
- The ability to critically appraise and disseminate research results;
- A sound basis for further research and/or professional development.

At programme specifics level, MSc Data Science and Big Data Analytics, aims to provide an opportunity for the students to specialise in highly demanding areas of Data Science and Big Data technologies by providing deep knowledge of the techniques and unique issues surrounding the emerging use of data for analytics, decision making and monitoring within real world contexts.

The Advanced Practice route enables students to advance their knowledge and skills in terms of professional and personal development in preparation for their entry into the job market.

20 Distinctive features of the programme

As data is being used increasingly to personalise, aggregate, and measure our everyday experiences, there is also a growing need for those who can develop such systems in a professional and ethical manner. There is a growing demand for Data Scientists and they require interdisciplinary skills and knowledge from statistics,

software programming, and in using modern data analysis and visualisation technologies.

Globally, the demand for data scientists has grown at a faster rate than supply – with a 344% increase in job postings in the field since 2013 (Indeed, 2019). The Tech Partnership UK estimates there will be 56,000 big data jobs in the UK alone by 2020, yet 77% of companies say it's difficult to recruit people with the big data skills they need. The proposed programme is aimed to target this demand from the data science sector. By studying the MSc in Data Science and Big Data Analytics students will be perfectly positioned to meet this growing demand.

This programme will provide the opportunity for students to specialise in the highly demanding areas of Data Science and Big Data technologies. Post graduate students of Data Science and Big Data Analytics will learn how to use various models, methods, tools and techniques to convert data into information and knowledge that can be understood by non-specialists, in order to make informed decisions for governments, companies, and other organisations.

This programme focuses on the development of skills within the fields of machine learning, data analysis and the use of datasets for predictions and monitoring purposes. With the recent emergence of this domain, there is a requirement for graduates who are skilled in both the technical development and problem solving skills, as well as the relevant ethical, legal and professional issues.

The Royal Society report (April 2019) entitled "Dynamics of Data Science: How can all sectors benefit from Data Science Talent?" highlights that "The skills of data scientists and engineers are in high demand. They enable organisations to extract valuable insights from data, and use them for substantial societal benefit. As data analysis methodology grows in power, and the volume of data collected increases rapidly, the number and variety of roles in data science are also growing significantly." It also states that "Data science particularly lends itself to movement of talent between sectors, including on shorter timescales. The ability to do this will be enhanced by recognising the value of cross-sectoral working and braided careers", and suggests that Universities should be focusing on conversion courses to meet the growing demand for data scientists.

This programme is designed as a conversion masters which will provide opportunity for graduates from other subject areas, if interested, to pursue a career in Data Science. Some of the modules will be paving the foundation for learning the skills, tools and technologies needed for a Data Scientist/Analyst, will also ensure a smooth transition for those students from other subject areas to data science, along with the more in-depth and specialised modules in data science and data analytics.

Market research carried out by the strategic planning office also demonstrate that most of the Universities requires a Computing undergraduate degree. The proposed programme should be able to use the conversion masters as unique selling point. The unique nature of the program title will also attract the attention from students searching with the key words like Data Science, Data Analytics or Big Data (supported by the finding from the marketing department's analysis on google search terms.

The Advanced Practice component will provide students with the opportunity to enhance personal and professional development in preparation for their entry into the job market. In addition to practical and professional skills gained during their Advanced Practice semester, students will also be able to engage in the process of

critical self-reflection and thereby build up more self-awareness, flexibility and resilience to better prepare themselves for the challenges of the job market, giving them an edge over graduates who have not undertaken a practical work component as part of their degree.

For the Advanced Practice routes, the taught modules follow the same delivery schedule as the standard routes, with the Advanced Practice module taking place after the completion of all taught modules and before the commencement of the Dissertation. Students will choose one of two Advanced Practice modules:
ADP701: Advanced Practice: Work-Based Learning
•   Students will undertake a work placement and be asked to reflect critically on their experience
ADP702: Advanced Practice: Entrepreneurship
•   Students will undertake a group entrepreneurial project to produce a product or service. They will then either test trade this product or complete market research. Students will be asked to reflect critically on their experience.

21 Credit accumulation and exit awards

Exit Awards
Successful completion of 60 credits at Level 7 entitles the student to the exit award of Post Graduate Certificate of Higher Education in Computing

Successful completion of 120 credits at Level 7 entitles the student to a Post Graduate Diploma of Higher Education in Data Science and Big Data Analytics. If students have also completed 60 credits Advanced Practice, they may exit with PG Dip in Data Science and Big Data Analytics with Advanced Practice.

MSc in Data Science and Big Data Analytics requires successful completion of 180 credits at level 7. The achievement of 240 credits at level 7 including 60 credits Advanced Practice entitles the student to MSc in Data Science and Big Data Analytics with Advanced Practice.

22 Programme structure diagram

MSc Data Science and Big Data Analytics (Full-time) standard without Advanced Practice

LEVEL 7								
Mod Code	COM754	Mod title	Research Methods for Digital Technologies	Credit value	20	Core	Semester 1
Mod Code	COM713	Mod title	Advanced Data Structures and Algorithms	Credit value	20	Core	Semester 1
Mod Code	COM736	Mod title	Database Systems and Data Analytics	Credit value	20	Core	Semester 1
Mod Code	COM746	Mod title	Big Data Challenges and Opportunities	Credit value	20	Core	Semester 2
Mod Code	COM712	Mod title	Data Analysis and Visualisation	Credit value	20	Core	Semester 2
Mod Code	COM714	Mod title	Machine Learning	Credit value	20	Core	Semester 2
Mod Code	COM752	Mod title	Dissertation Project	Credit value	60	Core	Semester 3

MSc Data Science and Big Data Analytics (Full-time) with Advanced Practice

Year 1

LEVEL 7								
Mod Code	COM754	Mod title	Research Methods for Digital Technologies	Credit value	20	Core	Semester 1
Mod Code	COM713	Mod title	Advanced Data Structures and Algorithms	Credit value	20	Core	Semester 1
Mod Code	COM736	Mod title	Database Systems and Data Analytics	Credit value	20	Core	Semester 1
Mod Code	COM746	Mod title	Big Data Challenges and Opportunities	Credit value	20	Core	Semester 2
Mod Code	COM712	Mod title	Data Analysis and Visualisation	Credit value	20	Core	Semester 2
Mod Code	COM714	Mod title	Machine Learning	Credit value	20	Core	Semester 2

Year 2

LEVEL 7								
Mod Code	ADP701 or ADP702	Mod title	Advanced Practice: Work-based Learning Advanced Practice: Entrepreneurship	Credit value	60	Core	Semester 1
Mod Code	COM752	Mod title	Dissertation Project	Credit value	60	Core	Semester 2

MSc Data Science and Big Data Analytics (Part-time) standard without Advanced Practice

Year 1

LEVEL 7								
Mod Code	COM713	Mod title	Advanced Data Structures and Algorithms	Credit value	20	Core	Semester 1
Mod Code	COM736	Mod title	Database Systems and Data Analytics	Credit value	20	Core	Semester 1
Mod Code	COM746	Mod title	Big Data Challenges and Opportunities	Credit value	20	Core	Semester 2
Mod Code	COM712	Mod title	Data Analysis and Visualisation	Credit value	20	Core	Semester 2

Year 2

LEVEL 7								
Mod Code	COM754	Mod title	Research Methods for Digital Technologies	Credit value	20	Core	Semester 1
Mod Code	COM714	Mod title	Machine Learning	Credit value	20	Core	Semester 2
Mod Code	COM752	Mod title	Dissertation Project	Credit value	60	Core	Semester 3

MSc Data Science and Big Data Analytics (Part-time) with Advanced Practice

Year 1

LEVEL 7								
Mod Code	COM713	Mod title	Advanced Data Structures and Algorithms	Credit value	20	Core	Semester 1
Mod Code	COM736	Mod title	Database Systems and Data Analytics	Credit value	20	Core	Semester 1
Mod Code	COM746	Mod title	Big Data Challenges and Opportunities	Credit value	20	Core	Semester 2
Mod Code	COM712	Mod title	Data Analysis and Visualisation	Credit value	20	Core	Semester 2

Year 2

LEVEL 7								
Mod Code	COM754	Mod title	Research Methods for Digital Technologies	Credit value	20	Core	Semester 1
Mod Code	COM714	Mod title	Machine Learning	Credit value	20	Core	Semester 2

Year 3

LEVEL 7								
Mod Code	ADP701 or ADP702	Mod title	Advanced Practice: Work-based Learning Advanced Practice: Entrepreneurship	Credit value	60	Core	Semester 1
Mod Code	COM752	Mod title	Dissertation Project	Credit value	60	Core	Semester 2

Note: The programme structure diagrams above are for September Intake. Students of January/February Intake will join the Sept cohort for taught modules and will have a summer break in between of two taught semesters, followed by Advanced Practice and Dissertation after completion of all taught modules.

22 Intended learning outcomes of the programme

	Level 7
A1	*Make professional judgements in the selection of technologies or processes for complex and dynamic scenarios*
A2	*Give a critical account of current and emerging developments in computer science*
A3	*Evidence deep comprehension of specialist applications for computer science and recognise the boundaries of knowledge in this domain*
A4	*Compare and contrast software development tools and techniques for a variety of practical situations*
A5	*Evaluate the use of data science and big data within computing contexts to obtain and support new information.*
A6	*Demonstrate a sufficiently detailed knowledge of research methods appropriate specifically to their advanced independent-study dissertation/project, together with detailed knowledge of the particular area in which the project is carried out*

Intellectual skills

	Level 7
B1	*Carry out confident and accurate selection and application of principles and procedures appropriate to the resolution of a range of situations and professional problems associated within the specialist area of computer science*
B2	*Identify and classify principles, ideas in contemporary information sources, and situations to professional standards; analyse rigorously, effectively, critically and creatively; cope with complexity*
B3	*Synthesise and predict the future development of current and emerging technologies in the field of computer science, being mindful of external factors*
B4	*Design and synthesise software and machine learning in response to a range of technological and practical constraints*
B5	*Utilise complex, often contradictory, resources and demonstrate how to access these to obtain state-of-the-art knowledge of computer science*
B6	*Evaluate methods, and plan for, a complex, self-led, investigation in response to a recognised problem or gap in knowledge*

Subject Skills

	Level 7
C1	*Work with a range of online, software and database tools to implement complete and functional systems or platforms*
C2	*Be effective in the acquisition and analysis of data, from a range of sources*
C3	*Make effective use of a range of theories and techniques applicable to computer science scenarios*
C4	*Assimilate and integrate emerging developments in computer science into their own work*

	Level 7
C5	*Undertake a significant computer science related thesis which involves an analytical, rigorous and critical approach to problem identification, solution and evaluation*
C6	*Synthesise the knowledge, skills and theories from the computing areas covered by the programme in order to solve a complex problem that may require the integration of different computer science techniques and/or technologies*

Practical, professional and employability skills

	Level 7
D1	*Display a mastery of working with a range of information sources and be able to objectively arrange these in a holistic manner*
D2	*Professionally and efficiently operate a range of IT software, specialist computing applications, and data analysis tools*
D3	*Effectively and proficiently work with stakeholders in designing IT and computer systems in response to their needs and demands*
D4	*Make critical decisions regarding technology adoption and success, based upon technological, societal, ethical, and market information*
D5	*Conduct and control a piece of research or investigation and professionally present the outcomes in a succinct and reflexive manner*
D6	*Carry out a large-scale, independent project and provide detailed and reflective analysis of its efficacy and value*
D7	*Advanced Practice route: Demonstrate knowledge and understanding of operating business or employer environment or environments, and articulate the deployment of higher level skills within this context.*

23 Curriculum matrix

To demonstrate how the overall programme outcomes are achieved and where skills are developed and assessed within individual modules.

	Module Title	Core or option?	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6
Level 7	*Research Methods for Digital Technologies*	Core	□	□	■	□	□	□	□	■	□	□	■	■	□	■	■	□	□	□	■	□	□	□	■	□
	Advanced Data Structures and Algorithms	Core	□	□	■	■	□	□	■	□	□	■	■	□	□	□	■	■	□	□	□	■	■	□	□	□
	Database Systems and Data Analytics	Core	■	□	□	□	□	□	■	■	□	■	□	□	□	■	■	□	□	□	□	■	□	■	□	□
	Big Data Challenges and Opportunities	Core	■	■	□	■	■	□	■	■	■	■	■	□	■	□	■	□	□	□	□	■	□	■	□	□
	Data Analysis and Visualisation	Core	□	□	■	□	■	□	□	□	■	■	□	□	■	□	■	□	□	□	□	■	■	□	□	□
	Machine Learning	Core	□	□	■	□	□	□	■	□	□	■	■	□	□	□	■	□	□	■	□	■	□	□	□	□
	Dissertation Project	Core	■	■	■	■	■	■	■	■	■	□	■	■	□	■	■	■	■	■	■	■	■	■	■	■

For successful completion of the Advanced Practice route, students will achieve the learning outcomes highlighted in the tables above as well as Learning Outcome D7

24 Learning and teaching strategy

The programme is informed and guided by the Computing Learning, Teaching and Assessment strategy. It seeks to assist the student to become an independent learner, delivering subject skills alongside the embedding of skills for employment. The curriculum is designed to encourage an appreciation for learning. Learning is enriched by appropriate underpinnings, current research, industrial applications and the development of transferable skills.

The majority of scheduled learning and teaching activities is through attendance at lectures, guest talks, tutorials, and labs. Attendance at external events and field trips are made available and as when they are appropriate and practicable. These modes of contact provide students with the ability to develop and practice the range of learning outcomes associated with the programme, ranging from the theoretical to the practical.

In the early stages of each module, problems will be well defined and limited in scope and scale. At later stages, problems will become less structured (to encourage reflection on problem issues) and open-ended (to give scope to propose and evaluate alternative solution strategies). Case studies are used when appropriate to integrate study topics and to underline vocational relevance. Coursework assignments are important throughout.

As the programme progresses, students are expected to demonstrate increasing proficiency in use of IT tools and techniques to support production of technical documentation, to enhance oral and written presentations, and to aid organisation of personal study material.

Part two of the programme is the Dissertation and is an area that has been given special consideration since it is such a significant piece of work undertaken by the student. While students study the taught part of the course they are given a 1 hour a week special lecture to inform them of the requirements of the Dissertation. This module is run so that it coincides with the end of the taught part of the course, which means that on completion of part one students can start immediately on producing the proposal for the dissertation. On submission of the proposal it is assessed and passed to an appropriate supervisor with expertise in the area that the student wishes to carry out the work. It is the supervisor's task to work with the student to improve the proposal to a level that is acceptable and achievable for a master's level within the time constraints. Students work independently on the dissertation having regular meetings with the supervisor. It is important that the student identifies at the proposal stage the various requirements needed to complete the dissertation e.g. equipment, software, space.

Extensive use is made of the University's Virtual Learning Environment (VLE), Moodle, to provide students with access to a range of delivery, and supporting, materials related to each of the modules featured on the programme. In addition to the materials used during the taught sessions, the VLE is used to provide students with additional content such as quizzes, videos, audio recordings, external links, technical reports, research papers, and so forth. The VLE also provides students with the ability to communicate using discussion forums and is the platform primarily used in the issuing, submission, marking, and feedback of student assessment.

25 The Wrexham Glyndŵr Graduate

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
Research Methods for Digital Technologies	■	□	□	■	■	■	□	■	■	■	■	□	■	■	■
Advanced Data Structures and Algorithms	■	■	□	■	□	■	■	□	■	■	■	■	■	□	■
Database Systems and Data Analytics	■	■	■	□	■	■	□	■	■	■	■	□	■	□	■
Big Data Challenges and Opportunities	■	□	■	■	■	■	□	■	□	■	■	■	■	□	■
Data Analysis and Visualisation	■	■	■	■	■	■	□	■	□	■	■	■	■	□	■
Machine Learning	■	■	□	■	□	■	■	□	■	■	■	■	■	□	■
Dissertation Project	■	■	□	■	■	■	■	■	■	■	■	□	■	■	■
Advanced Practice	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

26 Work based/placement learning statement

For programmes without the Advanced Practice option, students are encouraged to use their current or previous work experience to reflect on during the programme. Where practical, students may apply relevant learning to their workplace through applied projects and utilising real-word examples within their assessments. .

Programmes on the Advanced Practice route offer substantive work-based learning via the advanced practice module. While advice can be sought from the Work-related Learning Unit (WRLU) during the process, students are ultimately responsible for securing a placement using the protocol described in the Advanced Practice module handbook. Alternatively, they might opt to undertake a group entrepreneurial project to produce a product or service.

Students opt to undertake Advanced Practice Work Based Learning are required to submit a Placement Proposal and a Placement Specification form to the WRLU before the placement can be approved. The Placement Specification should be signed by WRLU, Placement Provider and student. Placement hours are to be recorded by students in a log and signed off by a manager at their workplace at the end of the placement. Any cause of concerns, either from students or from placement providers shall be referred to the Work-related Learning Unit who will follow the procedures outlined in the Advanced Practice handbook for remedy actions.

27 Welsh medium provision

The programmes will be delivered through the medium of English. The programme team understand the importance of Welsh medium provision and its integration into

the programme delivery. Even though the core team are not Welsh speaker, the students are entitled to submit assessments in the medium of Welsh.

28 Assessment strategy

A range and diversity of assessment is provided on the programme as a way to allow students with multiple types of opportunity to demonstrate the skills and knowledge that they are developing over the duration of the programme and to help support inclusivity. This mixture often makes use of assessment methods where students must document a process or solution to a challenge, but also in the submission of artefacts, such as computer programs, databases, media assets, portfolios of work, and presentations.

Assessment methods will be varied to include formats such as online quizzes, reports and essays, case studies, projects, portfolios of work, reflective statements and reflective portfolios, strategic plans and presentations. There will be a mixture of individual and group-work activities.

The Assessment Strategy is based on commentary provided with the UK Quality Code for Higher education, that: Assessment and feedback practices are informed by reflection, consideration of professional practice, and subject specific and educational scholarship to develop assessment activities which are closely connected with real-world situations or tasks. Criteria for assessment marking are included with each assessment document to clearly articulate and promote consistency at each level and a shared understanding of the basis on which academic judgements are made.

Feedback provision will be in accordance with current policies and practices in place throughout Glyndŵr University to support ongoing progression and development, this will be in electronic format. Up to date details are provided in the annual Programme Handbook.

All assessments are subject to inclusion in current quality practices which include second marking of a satisfactory sample and external examiner scrutiny.

The following pages contain details of indicative assessment types, which will be a varied mix of assessment types. More specific detail can be found in the module specification, and of modules to be delivered on the carousel model.

Module code & title	Assessment type and weighting	Indicative submission date
COM754 Research Methods for Digital Technologies	Coursework 100%	Wk 12, Sem 1
COM713 Advanced Data Structures and Algorithms	Portfolio 70% Project 30%	Ongoing: Wk 2 to Wk 8, Sem 1 Week 12, Sem 1
COM736 Database Systems and Data Analytics	Coursework 50% Coursework 50%	Wk 8, Sem 1 Wk 12,Sem 1
COM746	Portfolio 100%	Ongoing: Wk 2- Wk 12, Sem 2

Big Data Challenges and Opportunities		
COM712 Data Analysis and Visualisation	Portfolio 100%	Ongoing: Wk 2- Wk 12, Sem 2
COM714 Machine Learning	Portfolio 70% Project 30%	Ongoing: Wk 2 to Wk 8, Sem 2 Week 12, Sem 2
COM752 Dissertation Project	Research Proposal 10% Dissertation 90%	Wk 1, Sem 3 Wk 12, Sem 3
ADP701 Advanced Practice: Work-based Learning	Portfolio 100% (pass/refer)	Ongoing
Advanced Practice: Entrepreneurship	Portfolio 100% (pass/refer)	Ongoing

29 Assessment and award regulations

For students on the Advanced Practice route, please note that the Advanced Practice module will not be used towards the degree classification and will show as pass/fail only on the transcript. Please consult the Taught Masters Regulations available on the Student Administration web pages.

Derogations

n/a

Non-credit bearing assessment

n/a

Restrictions for trailing modules (for taught masters programmes only)

n/a

Prerequisites for proceeding to the research component (for MRes programmes only)

n/a

30 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)

Quality management is an integral part of the programme with the overall responsibility for quality being assigned to the Associate Dean and Programme Leader, drawing on the relevant contents in the University's Programme Leaders Handbook. Quality management is well documented within the specific Programme Handbook which is available to all students registered on the programme via the virtual learning environment. This includes details of the academic calendar, scheduled teaching weeks, the modular diet and submission dates for assignments.

It is University policy to allocate a Personal Tutor to each student and encourage students to raise any concerns, at an early stage, through this pathway. A student representative is also elected by the students and matters requiring attention can also be progressed via this route.

At a modular level the named module leader designs a scheme of work in accordance with the module specification and academic calendar. It is usual practice for the module leader to write the relevant assessments which are subsequently peer reviewed by an academic colleague within the Faculty.

When assessment work is submitted, it undergoes first marking by the module leader and a sample based on the range of marks is independently second marked and also made available for external examiner comments via the virtual learning environment prior to the assessment boards.
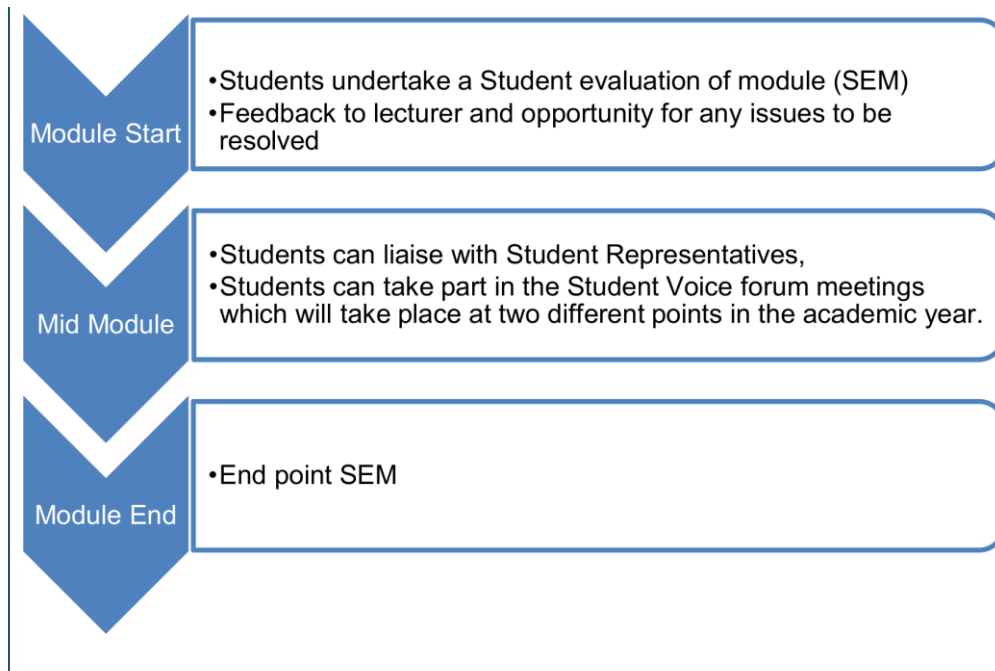
Students are encouraged to submit modular feedback via the virtual learning environment. Two Student Voice Forum meetings are held during the course of each academic year which are independently chaired and encourage an exchange of opinions and perceptions between staff and students, noting areas for improvement or good practice as a foundation for quality evaluation. The Minutes and any responses from the Student Voice Forum meetings are posted onto the programme site of the Virtual Learning Environment.

Annual reports are submitted by external examiners which are subsequently shared with students and the programme leader replies, noting any actions that have been taken. This report forms part of the Annual Monitoring Review which enables reflective practice, in relation to the programme, to occur. This includes a number of data sources to produce a robust insight into the health of the programme. Completed reports are discussed at a Faculty Board and are a further source of best practice and suggestions for improvement, which are enacted in the first half of the academic year.

Faculty meetings also provide a forum for programme discussion and to highlight issues which could include attendance and progression. Peer review of teaching is scheduled to provide a second opinion on programme delivery.

Student Voice Flow Chart

Module Start	• Students undertake a Student evaluation of module (SEM) • Feedback to lecturer and opportunity for any issues to be resolved
Mid Module	• Students can liaise with Student Representatives, • Students can take part in the Student Voice forum meetings which will take place at two different points in the academic year.
Module End	• End point SEM

31 Learning support

Institutional level support for students

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

- Library & Learning Resources
- IT Services
- Inclusion Services
- Careers Service
- Chaplaincy
- Counselling & Wellbeing
- Student Funding and Welfare
- Student Administration
- Glyndŵr Students' Union
- Work-related Learning Unit

Support for students and their learning

All students at 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. It is a vital role to support student engagement and retention, and to help every student to success to the best of his or her ability.

Programme specific support for students

Induction
New students on the programme will undergo an induction programme that will provide them with a full introduction to the programme and will include elements of work on study skills and professional development.

At programme induction students will be allocated to a Personal Tutor, drawn from the programme team. This mechanism enables the student to discuss options available for additional personal development or specific support issues that may arise, from time to time, throughout the duration of the programme. The Programme Leader, in many instances, has a dual role, acting as Personal Tutor for students on the programme. Allocation of personal tutors is reviewed at the beginning of each academic year and students have the facility to raise issues through the Student Representative or Tell Glyn should they choose to do so in an anonymous manner.

Student Handbook
All students on the programme will receive a Student Handbook, provided electronically via the VLE, which will contain details and guidance on all aspects of the programme and forms of student support and guidance, programme-based, and Faculty-based.

Computing Labs
The majority of Computing provision is located on the Wrexham campus, including teaching rooms, lecture theatres, staff offices, and specialist labs. There are a number of specialist computer labs on the Wrexham campus, including general purpose computing laboratories that support the teaching. These specialist labs offer access to a range of software that is utilised within the modules defined in the programme.

Open Door Policy
Computing operates an Open Door policy, meaning that academic staff are readily and easily accessible and approachable for students outside of scheduled learning and teaching hours. Staff can be approached without the need for a formal appointment to be made.

Progress Review and Attendance Monitoring
Student attendance will be subject to regular monitoring through registers, and this will be a means of addressing issues of student support. There will also be regular reviews for each student with personal tutors.

32 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
https://www.glyndwr.ac.uk/en/AboutGlyndwrUniversity/EqualityandDiversity/
ensuring that everyone who has the potential to achieve in higher education is given the chance to do so.

DATE OF APPROVAL	
Date of programme delivery approval event:	*21 January 2021*
Date of approval by Academic Board:	12 April 2021

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APPENDIX 1 – PARTNER PROVIDER SUPPLEMENT TO PROGRAMME SPECIFICATION

When printed this becomes an uncontrolled document. Please check the Programme Directory for the most up to date version by clicking here.

Programme Title(s):
MSc Data Science and Big Data Analytics

This is the intended award title from the definitive Programme Specification and what will be printed on the award certificate.

1	***Awarding body***
	Glyndŵr University
2	**Partner Provider**
	Global Pathways Academy
3	**Location of delivery**
	Global Pathways Academy, #806, Souravya, 10th A Main Road, Indiranagar 1st Stage, Bangalore – 560 038
	Western International College (WINC) #22/1, Siddedahalli ,off Hesarghatta Main Rd, behind Siddineya Temple, Nagasandra Post, Bengaluru, 560073
	Western International College (WINC) FZE, PO Box 16038, Ras Al Khaimah Free Trade Zone, Ras Al Khaimah, UAE and/or other sites as approved by Glyndwr in writing.
4	**Faculty/Department**
	Faculty of Arts, Science and Technology
5	**Mode of study**
	Part time - PG PT
6	**Frequency / timing of intake/s**
	3 intake points per academic year (July, September and January)
7	**Language of study**
	English
8	**Name of academic link (correct at the point of programme approval)**
	Computing – John Worden

MSc Data Science and Big Data Analytics

July intake – p/t

Year 1		
Semester 3 **Jul to Aug**	COM742 Postgraduate Study and Research Methods (20 credits) CORE	COM714 Machine Learning (20 credits) CORE
Semester 1 **Sep to Jan**	COM713 Advanced Data Structures and Algorithms (20 credits) CORE	COM736 Database Systems and Data Analytics (20 credits) CORE
Semester 2 **Feb to May**	COM746 Big Data Challenges and Opportunities (20 credits) CORE	COM712 Data Analysis and Visualisation (20 credits) CORE

Year 2	
Semester 3/1 **Jun to Jan**	COM738 Dissertation (60 credits) CORE

September intake – p/t

Year 1		
Semester 1 **Sep to Jan**	COM713 Advanced Data Structures and Algorithms (20 credits) CORE	COM736 Database Systems and Data Analytics (20 credits) CORE
Semester 2 **Feb to May**	COM746 Big Data Challenges and Opportunities (20 credits) CORE	COM712 Data Analysis and Visualisation (20 credits) CORE
Semester 3 **Jun to Aug**	COM742 Postgraduate Study and Research Methods (20 credits) CORE	COM714 Machine Learning (20 credits) CORE

Year 2	
Semester 1/2 **Sep to May**	COM738 Dissertation (60 credits) CORE

February intake – p/t

Year 1		
Semester 2 **Feb to May**	COM746 Big Data Challenges and Opportunities (20 credits) CORE	COM712 Data Analysis and Visualisation (20 credits) CORE
Semester 3 **Jun to Aug**	COM742 Postgraduate Study and Research Methods (20 credits) CORE	COM714 Machine Learning (20 credits) CORE
Semester 1 **Sep to Jan**	COM713 Advanced Data Structures and Algorithms (20 credits) CORE	COM736 Database Systems and Data Analytics (20 credits) CORE

Year 2	
Semester 2/3 **Jan to Aug**	COM738 Dissertation (60 credits) CORE