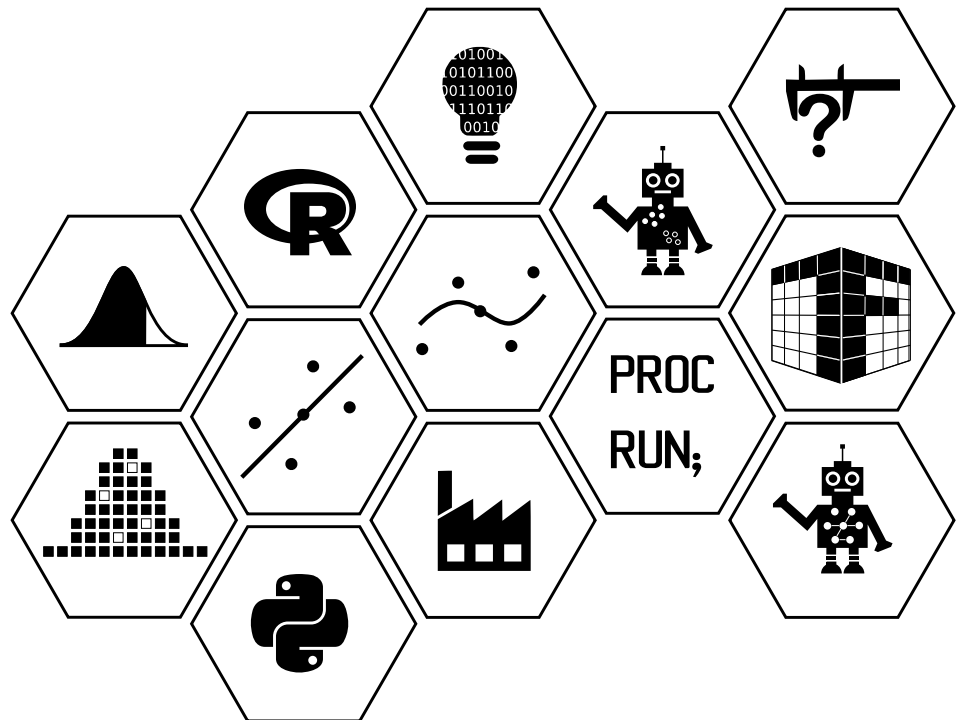# MSc/PGDip/PGCert in Data Analytics and Data Analytics for Government

ODL Management Team

Academic Year 2022-23

Programme Handbook:

MSc/PGDip/PGCert in Data Analytics, MSc/PGDip/PGCert in Data Analytics for Government

General information

You can find a HTML version of this handbook using the following link

https://bold-web.maths.gla.ac.uk/mdatagov/assets/html/handbook.html

Key Contacts

The programme management team can be contacted through

maths-stats-analyticsmsc-management@glasgow.ac.uk.

The School's postgraduate teaching administration can be contacted through

maths-stats-teaching@glasgow.ac.uk.

We aim to respond to all queries within 5 working days. If you have specific questions regarding registration, enrollment, sponsorship, finance, graduation or withdrawal then you can find a full list of contact information for these services later in this handbook.

Term Dates

The structure for the online programme is comprised of three terms ("semesters"). A mid-term week break will take place roughly halfway through each semester.

This programme follows the University's session dates. The following table shows the dates for each semester, mid-term week and reassessment periods.

Semester	Start	Mid-term Week	End	Reassessment
1	19/09/2022	24/10/2022	09/12/2022	August 2023
2	09/01/2023	13/02/2023	31/03/2023	August 2023
3	02/05/2023	05/06/2023	14/07/2023	September/October 2023

Coursework will be made available and deadlines set on each item. You can find assessments calendars of each course on the dedicated course Moodle page.

In some cases, assessment deadlines may be later than the end of the corresponding semester. For example, for a course taken in semester 3, you could have an assessment due on 29/07/2023. It is recommended that you check assessment calendars, given on individual course Moodle pages, at the beginning of each semester to ensure you can prepare to complete all assessments.

For each course, reassessment at all components (i.e. quizzes, reports, class test) will be made available to students obtaining an overall grade less than C3 for that course. The specific dates for each reassessment will be confirmed closer to the time. More detailed information about reassessment is provided in the section on assessment.

Please note that the information provided in this handbook is subject to change. An updated handbook will be available at the beginning of each academic year.

Updated August 4, 2022.

Teaching Team

Course	Teaching staff
Preliminary Mathematics for Statisticians	Shazia Ahmed (shazia.ahmed@glasgow.ac.uk)
Probability and Stochastic Models	Alexey Lindo (alexey.lindo@glasgow.ac.uk)
Probability and Sampling Fundamentals/Sampling Fundamentals	Eilidh Jack (eilidh.jack@glasgow.ac.uk) & Colette Mair (colette.mair@glasgow.ac.uk)
R Programming/Statistical Computing	Craig Alexander (craig.alexander.2@glasgow.ac.uk)
Data programming in Python	Andrew Elliott (andrew.elliott@glasgow.ac.uk)
Learning from Data/Data Science Foundations	Eilidh Jack (eilidh.jack@glasgow.ac.uk) & Claire Miller (claire.miller@glasgow.ac.uk)
Predictive Modelling	Surajit Ray (surajit.ray@glasgow.ac.uk)
Data Management and Analytics using SAS	Benn Macdonald (benn.macdonald@glasgow.ac.uk)
Advanced Predictive Models	Tereza Neocleous (tereza.neocleous@glasgow.ac.uk)
Data Mining and Machine Learning I:Supervised and Unsupervised Learning	Nema Dean (nema.dean@glasgow.ac.uk)
Data Mining and Machine Learning II:Big and Unstructured Data	Jafet Belmont Osuna (jafet.BelmontOsuna@glasgow.ac.uk)
Large-Scale Computing for Data Analytics	Colin Torney (colin.torney@glasgow.ac.uk) & Vinny Davies (vinny.davies@glasgow.ac.uk)
Uncertainty Assessment and Bayesian Computation	Vlad Vyshemirsky (vladislav.vyshemirsky@glasgow.ac.uk)
Data Analytics in Business and Industry	Colette Mair (colette.mair@glasgow.ac.uk)
Statistics in Government	Thomas Scotto (thomas.scotto@glasgow.ac.uk)
Introduction to Survey Research	Thomas Scotto (thomas.scotto@glasgow.ac.uk)
Data Analytics Project/Data Analytics Professional Portfolio	**Project team** Surajit Ray (surajit.ray@glasgow.ac.uk), Andrew Elliott (andrew.elliott@glasgow.ac.uk). **Project supervisors** Dirk Husmeier (dirk.husmeier@glasgow.ac.uk), Tereza Neocleous (tereza.neocleous@glasgow.ac.uk), Colin Torney (colin.torney@glasgow.ac.uk), Craig Alexander (craig.alexander.2@glasgow.ac.uk), Vinny Davies (vinny.davies@glasgow.ac.uk)

Programme Structure

MSc/PGDip/PGCert

You have the option of completing a Masters (MSc), Postgraduate Diploma (PGDip) or Postgraduate Certificate (PGCert) in Data Analytics (or Data Analytics for Government).

The full MSc programme comprises of 180 credits, the PGDip comprises of 120 credits and the PGCert comprises of 60 credits. The structures of each are outlined below.

- MSc includes 12 taught courses (120 credits) and a project (60 credits).
- PGDip includes 12 taught courses.
- PGCert includes 6 taught courses.

Duration

There are two routes for completing the MSc in Data Analytics programme and three routes for completing the MSc in Data Analytics for Government programme. The default and recommended route takes three years whereas a faster route allows completing the MSc programme in two years. The additional route for the MSc in Data Analytics for Government allows students to complete the MSc programme in four years.

Please note that students following the faster route take 100 credits in their first year, which is close to the 120 credits taken each year by full-time students. If you wish to take the faster route, then please consider the implications carefully. We highly recommend you discuss this option with your adviser of studies. If you would like to take the faster route you must complete the faster route academic workload form and email it to the management team before the end of week 1 semester 1. This form can be found on the General Information Moodle Page.

It is not possible to switch from the recommended three year route to the faster two year route after semester 1 of year 1. However, you can opt to switch from the faster two year route to the recommended three year route. In the latter case, you must let the management team know by completing the non-standard academic workload form and email it to the management team.

Students on the MSc in Data Analytics for Government programme who wish to take the four year route must complete the non-standard academic workload form and email it to the management team

Please note that we currently teach each course only once a year (in the semesters given in the tables below), so you need to take the courses in the semester in which they are offered.

Credit Points

The University of Glasgow use credit points to quantify the outcomes of learning. The allocation of credits is based on the amount of time that an 'average' learner at a specified level might expect to take to achieve the outcomes. In common with other credit systems, one credit represents the outcomes of learning achieved through a notional 10 hours of learning time.

In total, this programme comprises of 180 credits. Each taught course accounts for 10 credits and the project accounts for 60 credits. For a 10 credit course the average learner may expect to achieve the intended learning outcomes through a notional 100 hours of learning time.

MSc in Data Analytics

Recommended route (3 years)

Year 1

Course	Code	Credits	Semester
Probability and Stochastic Models*	STATS5077	10	1 (Autumn)
Probability and Sampling Fundamentals*	STATS5094	10	1 (Autumn)
R Programming	STATS5078	10	1 (Autumn)
Learning from Data	STATS5075	10	2 (Winter)
Predictive Modelling	STATS5076	10	2 (Winter)
Advanced Predictive Models	STATS5073	10	3 (Summer)
Data Mining and Machine Learning I: Supervised and Unsupervised Learning	STATS5074	10	3 (Summer)

We offer two different probability courses during the first semester.

The Probability and Stochastic Models course provides a structured development of probability theory and its use to construct stochastic models. The pace of the course is brisk, as it begins from the assumption that students have little prior exposure to probability yet reaches advanced concepts by the end. On the other hand, the Probability and Sampling Fundamentals course aims to introduce students to probability theory with a focus on understanding and being able to apply concepts, rather than deriving these concepts in a mathematically rigorous manner. The latter course also covers some basic aspects of Sampling Theory.

You can get more information about the course aims and intended learning outcomes in the course catalogue (follow the links in the paragraph above). Generally, we would recommend students who have not studied probability at a higher education level to enroll for Probability and Sampling Fundamentals. We also encourage you to discuss this with your adviser of studies in case you are not certain which of the two courses you would like to participate on.

Year 2

Course	Code	Credits	Semester
Data Programming in Python	STATS5082	10	1 (Autumn)
Uncertainty Assessment and Bayesian Computation	STATS5084	10	1 (Autumn)
Data Analytics in Business and Industry	STATS5079	10	2 (Winter)
Data Management and Analytics using SAS	STATS5080	10	2 (Winter)
Large-Scale Computing for Data Analytics	STATS5083	10	3 (Summer)
Data Mining and Machine Learning II: Big and	STATS5081	10	3 (Summer)

Course	Code	Credits	Semester
Unstructured Data			

Year 3 (Dissertation)

In the third year you will work on a dissertation worth 60 credits.

Course	Code	Credits	Semester
Data Analytics Project	STATS5093P	60	All year
Data Analytics Professional Portfolio	STATS5092P	60	All year

Students are strongly encouraged to propose their own project. We believe that this is the best way of ensuring that projects correspond to each student's strengths and interests. Please note that the management team will not provide feedback or guidance on project proposals.

Students taking the project in September 2022 will be contacted by the project team around August 2022. Students will be invited to book an appointment with the team to discuss their proposal and data. If you have not been contacted by the project team by the beginning of August 2022 then please contact the project team (please see page 3).

Please note that the project must be completed within one academic year. Any late submissions or reassessments are subject to additional fees. Any extensions, with or without a Good Cause Claim, that result in the project being submitted in a different academic year are also subject to additional fees. You can find more information about Good Cause Claims later in this handbook.

Faster route (2 years)

Students have the option to complete the MSc in two years, if they want to. In that case the first year will be comprised of 10 courses (3 at semester 1, 3 at semester 3, and 3 during the summer) while the second year will be comprised of two courses and the final project.

Some of the courses on the faster route may touch upon topics not yet covered in detail. Enough detail will always be provided within the material but faster route students may need to be prepared to do additional reading at times.

Year 1

Course	Code	Credits	Semester
Probability and Stochastic Models*	STATS5077	10	1 (Autumn)
Probability and Sampling Fundamentals*	STATS5094	10	1 (Autumn)
R Programming	STATS5078	10	1 (Autumn)
Data Programming in Python	STATS5082	10	1 (Autumn)
Learning from Data	STATS5075	10	2 (Winter)
Predictive Modelling	STATS5076	10	2 (Winter)
Data Management and Analytics using SAS	STATS5080	10	2 (Winter)
Advanced Predictive Models	STATS5073	10	3 (Summer)
Data Mining and Machine Learning I: Supervised and Unsupervised Learning	STATS5074	10	3 (Summer)
Data Mining and Machine Learning II: Big and Unstructured Data	STATS5081	10	3 (Summer)
Large-Scale Computing for Data Analytics	STATS5083	10	3 (Summer)

Students need to choose between Probability and Stochastic Models and Probability and Sampling Fundamentals (see above for detailed information).

Year 2

Course	Code	Credits	Semester
Uncertainty Assessment and Bayesian Computation	STATS5084	10	1 (Autumn)
Data Analytics in Business and Industry	STATS5079	10	2 (Winter)
Data Analytics Project	STATS5093P	60	All year
Data Analytics Professional Portfolio	STATS5092P	60	All year

Note that both routes are governed by the same programme specifications and there is only one way to apply for the MSc and that is through the default path (3 years).

The way that students decide to go with the faster route (of 2 years) is by completing the non-standard academic work-load forum before the beginning of the programme and being enrolled in correct courses each semester.

You will be able to discuss which route you want to follow with your adviser of studies at the beginning of the first semester of Year 1.

PGDip in Data Analytics

The PGDip programme includes the 12 taught courses.

PGCert in Data Analytics

The PGCert in Data Analytics includes the following four compulsory courses.

Course	Code	Credits	Semester
Probability and Stochastic Models*	STATS5077	10	1 (Autumn)
Probability and Sampling Fundamentals*	STATS5094	10	1 (Autumn)
R Programming	STATS5078	10	1 (Autumn)
Learning from Data	STATS5075	10	2 (Winter)
Predictive Modelling	STATS5076	10	2 (Winter)

*Students choose either Probability and Stochastic Models or Probability and Sampling Fundamentals.

Plus two courses from the following three options.

Course	Code	Credits	Semester
Advanced Predictive Models	STATS5073	10	3 (Summer)
Data Mining and Machine Learning I: Supervised and Unsupervised Learning	STATS5074	10	3 (Summer)
Data Mining and Machine Learning II: Big and Unstructured Data	STATS5081	10	3 (Summer)

MSc in Data Analytics for Government

Recommended route (3 years)

Year 1

Course	Code	Course Equivalent	Credits	Semester
Sampling Fundamentals	STATS5096	Probability and Sampling Fundamentals	10	1 (Autumn)
Statistical Computing	STATS5097	R Programming	10	1 (Autumn)
Data Science Foundations	STATS5095	Learning from Data	10	2 (Winter)
Predictive Modelling	STATS5076		10	2 (Winter)
Advanced Predictive Models	STATS5073		10	3 (Summer)
Data Mining and Machine Learning I: Supervised and Unsupervised Learning	STATS5074		10	3 (Summer)

Year 2

Course	Code	Credits	Semester
Data Programming in Python	STATS5082	10	1 (Autumn)
Uncertainty Assessment and Bayesian Computation	STATS5084	10	1 (Autumn)
Introduction to Survey Research	POLITIC5094	10	2 (Winter)
Statistics in Government	SPS5048	10	2 (Winter)
Large-Scale Computing for Data Analytics	STATS5083	10	3 (Summer)
Data Mining and Machine Learning II: Big and Unstructured Data	STATS5081	10	3 (Summer)

Year 3 (Dissertation)

In the third year you will work on a dissertation worth 60 credits, which can either be a project (STATS5093P) or a reflective portfolio (STATS5092P).

Course	Code	Credits	Semester
Data Analytics Project	STATS5093P	60	All year
Data Analytics Professional Portfolio	STATS5092P	60	All year

Students are strongly encouraged to propose their own project. We believe that this is the best way of ensuring that projects correspond to each student's strengths and interests. Please note that the management team will not provide feedback or guidance on project proposals.

Students taking the project in September 2022 will be contacted by the project team around August 2022. Students will be invited to book an appointment with the team to discuss their proposal and data. If you have not been contacted by the project team by the beginning of August 2022 then please contact the project team (please see page 3).

Faster route (2 years)

Students have the option to complete the MSc in two years, if they want to. In that case the first year will be comprised of 10 courses (3 at semester 1, 3 at semester 2, and 4 during the summer) while the second year will be comprised of 2 courses and the final project.

Year 1

Course	Code	Credits	Semester
Sampling Fundamentals	STATS5096	10	1 (Autumn)
Statistical Computing	STATS5097	10	1 (Autumn)
Data Programming in Python	STATS5082	10	1 (Autumn)
Data Science Foundations	STATS5095	10	2 (Winter)
Predictive Modelling	STATS5076	10	2 (Winter)
Statistics in Government	SPS5048	10	2 (Winter)
Advanced Predictive Models	STATS5073	10	3 (Summer)
Data Mining and Machine Learning I: Supervised and Unsupervised Learning	STATS5074	10	3 (Summer)
Data Mining and Machine Learning II: Big and Unstructured Data	STATS5081	10	3 (Summer)
Large-Scale Computing for Data Analytics	STATS5083	10	3 (Summer)

Year 2

Course	Code	Credits	Semester
Uncertainty Assessment and Bayesian Computation	STATS5084	10	1 (Autumn)
Introduction to Survey Research	POLITIC5094	10	2 (Winter)
Data Analytics Project	STATS5093P	60	All year

Course	Code	Credits	Semester
Data Analytics Professional Portfolio	STATS5092P	60	All year

Four year route

Students have the option to complete the MSc in four years, if they want to. In that case the first year will be comprised of 4 courses (2 at semester 1 and 2 at semester 2), the second year will be comprised of 4 courses (1 at semester 1, 1 at semester 2, and 2 during the summer), the third year will be comprised of 4 courses (1 at semester 1, 1 at semester 2, and 2 during the summer). The fourth year will be comprised of the final project.

Year 1

Course	Code	Credits	Semester
Sampling Fundamentals	STATS5096	10	1 (Autumn)
Statistical Computing	STATS5097	10	1 (Autumn)
Data Science Foundations	STATS5095	10	2 (Winter)
Predictive Modelling	STATS5076	10	2 (Winter)

Year 2

Course	Code	Credits	Semester
Data Programming in Python	STATS5082	10	1 (Autumn)
Statistics in Government	SPS5048	10	2 (Winter)
Advanced Predictive Models	STATS5073	10	3 (Summer)
Data Mining and Machine Learning I: Supervised and Unsupervised Learning	STATS5074	10	3 (Summer)

Year 3

Course	Code	Credits	Semester
Uncertainty Assessment and Bayesian Computation	STATS5084	10	1 (Autumn)
Introduction to Survey Research	POLITIC5094	10	2 (Winter)
Data Mining and Machine Learning II: Big and Unstructured Data	STATS5081	10	3 (Summer)
Large-Scale Computing for Data Analytics	STATS5083	10	3 (Summer)

Year 4 (Dissertation)

Course	Code	Credits	Semester
Data Analytics Project	STATS5093P	60	All year
Data Analytics Professional Portfolio	STATS5092P	60	All year

Note that all routes are governed by the same programme specifications and there is only one way to apply for the MSc and that is through the default path (3 years). The way that students decide to go with the faster route (of 2 years) is by being enrolled in more (compared to the default number) courses per semester.

You will be able to discuss which route you want to follow with your adviser of studies at the beginning of the first semester of Year 1. Please note that it is generally not possible to change to the faster route at a later date.

PGDip in Data Analytics for Government

The PGDip programme includes the 12 taught courses described in the MSc in Data Analytics for Government programme.

PGCert in Data Analytics for Government

The PGCert in Data Analytics includes the following four compulsory courses.

Course	Code	Credits	Semester
Sampling Fundamentals	STATS5096	10	1 (Autumn)
Statistical Computing	STATS5097	10	1 (Autumn)
Data Science Foundations	STATS5095	10	2 (Winter)
Predictive Modelling	STATS5076	10	2 (Winter)

Plus two courses from the following four options.

Course	Code	Credits	Semester
Statistics in Government	SPS5048	10	2 (Winter)
Advanced Predictive Models	STATS5073	10	3 (Summer)
Data Mining and Machine Learning I: Supervised and Unsupervised Learning	STATS5074	10	3 (Summer)
Data Mining and Machine Learning II: Big and Unstructured Data	STATS5081	10	3 (Summer)

Prior learning

Employees of UK public sector bodies can take individual courses from the MSc/PGCert/PGDip in Data Analytics for Government programme as CPD. Credits achieved through CPD can be recognised as prior learning and can lead to the award of credit that count towards the MSc/PGDip/PGCert programme requirements.

In general, a maximum of 30 credits of the PGCert programme, 60 credits of the PGDip programme and 60 taught credits of the MSc programme can be accredited through CPD learning. In order for CPD learning to be eligible, students need to have completed all assessments for that course. If a student took a CPD course as a non-student learner then they must complete all assessments for that course subject to an additional fee.

Enrolling for courses on MyCampus

Students need to enroll for the courses they wish to take each semester on MyCampus. When enrolling it is important to follow one of the routes given above. It is the student's responsibility to make sure they are enrolled for the correct courses each semester.

Please note that for each new academic year, students have to complete academic and financial registration before being able to enroll.

Please note that the fees for the programme are on a per-credit basis and that fees are determined by your enrollments. In other words, you will be charged for a course once you enrol for this course of MyCampus.

The University Regulations allow you to attempt each course only once, unless there is good cause (see below). Students who are enrolled for a course when the first assessment for this course is due need to complete the course in that semester. There will be no opportunity to repeat a course.

You can raise a support call to get help with enrollment (registration: help & support).

If you need to un-enroll from a course then please contact the management team and the teaching administration team as soon as possible. Please note that un-enrolling does not always cancel the fees the University charges for this course.

Timetable

Most material for our online courses is asynchronous ("pre-recorded"), i.e. you can work on them at any time. There will be some synchronous ("live") teaching events typically weekly or fortnightly for each course. The timings for live sessions differ for each course. We will try to accommodate individual circumstances whenever this is possible, but we are constrained by the availability of staff and that of other students on the programme. We strongly encourage you attend the synchronous sessions when possible, but this is not a formal requirement for the award of credit. The timings and links to live sessions for each course will be provided on Moodle.

Taking courses in a different order (and/or taking fewer courses per semester)

We generally do not allow students to deviate from the above routes, unless in unforeseen exceptional circumstances, such as medical grounds or family emergencies. We recommend you discuss your options with your adviser of studies.

Virtual Learning Environment

Moodle

The University uses Moodle as its virtual learning environment (VLE), which is used as a gateway for accessing the learning material for this programme. The University's Moodle system can be accessed through MyGlasgow or directly.

> Moodle
>
> https://moodle.gla.ac.uk

Provided you have enrolled for the courses on MyCampus you should be automatically enrolled into these courses on Moodle and able to access teaching material after the start date of the course. This should happen close to the start date of each term.

Academic Writing Skills Programme

The University takes students from a wide variety of backgrounds and with different levels of exposure to academic and scientific writing. The University has thus introduced an Academic Writing Skills Programme (AWSP) to make sure that all students can write well and get the best results from their written work.

Like all other students starting a new degree you will be automatically enrolled for the AWSP in your first year of studies.

The AWSP consists of an online test comprising multiple choice questions and a short timed essay. Depending on the outcome of the test you might be invited to complete further courses.

Please note that the Academic Writing Skills Programme is run centrally by the University's Learning and Academic Development Service (LEADS). You will receive an email with detailed information about the AWSP programme in the near future. If you have any questions, please get in touch with LEADS.

If you do not complete the AWSP it will show on your Higher Education Achievement Report ("transcript") as "not completed". However, completing the AWSP is *not* a requirement for progression or a requirement for the award of the MSc degree, nor does it impact on your degree classification.

> Academic Writing Skills Programme (AWSP)
>
> https://www.gla.ac.uk/myglasgow/leads/awsp/forstudents/
>
> Student information about the Academic Writing Skills Programme (AWSP)

Assessment

University Regulations

The University's Code of Assessment regulates how students' performance is assessed and how assessment results aggregated. This section gives on overview of the key regulations applying to this MSc programme.

> Code of Assessment
>
> https://www.gla.ac.uk/myglasgow/senateoffice/policies/assessment/codeofassessment/
>
> The Code of Assessment contains all the regulations regarding assessment at the University.

> Guide of the Code of Assessment

Assessment Structure

All courses on this programme are assessed continuously throughout the term. Each course will have an Assessment and Feedback Calendar giving the dates when coursework is given out, when it is due and a target date by when feedback will be returned. It will also contain, the percentage weights of each assessment which are used for calculating the overall grade for each course. You can find individual course assessment calenders for each course at the beginning of the relevant semester on Moodle.

Class tests and timed assessments

Five courses are assessed through class tests, or timed assessments, that occur at specific times as detailed in the table below.

Course	Number of class tests or timed assessments
Probability and Stochastic Models	2
Probability and Sampling Fundamanentals	2
Learning from Data	1
Predictive Modelling	1
Data Management and Analytics using SAS	1

In additional to timed assessments, all class tests will be timed and made available online. Students will complete the tests at home and upload their answers on a specific day and students must be available on that day to complete the assessments. More details will be provided before each test.

Grading

Most coursework on this programme will be marked on percentage scales or using the University's 22-point system ("schedule A"). In the University's grading system a primary grade (a letter from A to H) and a secondary band (an integer between 1 and at most 5) will be returned for each component of assessment. The University has produced verbal descriptors for each primary grade, which are given in the table below.

Grade (secondary bands)	Grade points	Gloss	Associated MSc Classific'n	Primary verbal descriptor for grade
A (A1–A5)	22-18	Excellent	Distinction	Exemplary range and depth of attainment of intended learning outcomes, secured by discriminating command of a comprehensive range of relevant materials and analyses, and by deployment of considered judgement relating to key issues, concepts and procedures
B (B1–B3)	17–15	Very good	Merit	Conclusive attainment of virtually all intended learning to reveal appreciable outcomes, clearly grounded on a close familiarity with a wide range of supporting evidence, constructively utilised depth of understanding
C (C1–C3)	14–12	Good		Clear attainment of most of the intended learning outcomes, some more securely grasped than others, resting on a circumscribed range of evidence and displaying a variable depth of understanding
D (D1–D3)	11–9	Satisfactory		Acceptable attainment of intended learning outcomes, displaying a qualified familiarity with a minimally sufficient range of relevant materials, and a grasp of the analytical issues and concepts which is generally reasonable, albeit insecure
E (E1–E3)	8–6	Weak		Attainment deficient in respect of specific intended learning outcomes, with mixed evidence as to the depth of knowledge and weak deployment of arguments or deficient manipulations

Grade (secondary bands)	Grade points	Gloss	Associated MSc Classific'n	Primary verbal descriptor for grade
F (F1–F3)	5–3	Poor		Attainment of intended learning outcomes appreciably deficient in critical respects, lacking secure basis in relevant factual and analytical dimensions
G (G1, G2)	2–1	Very poor		Attainment of intended learning outcomes markedly deficient in respect of nearly all intended learning outcomes, with irrelevant use of materials and incomplete and flawed explanation
H	0			No convincing evidence of attainment of intended learning outcomes, such treatment of the subject as is in evidence being directionless and fragmentary

If an assessment is graded on a percentage scale then the percentage of marks awarded will then be converted to a primary grade and secondary band. The table below indicates how the percentage marks are usually converted to a primary grade and secondary band. This is the usual mapping between an assessment's mark (expressed as a percentage of the total mark) and the corresponding grade on the University's 22-point scale. Note however that it may be adjusted for any piece of assessment by the relevant Exam Board if, for whatever reason, it is considered not to reasonably reflect the generic verbal descriptors for performance at a grade.

Primary Grade	Secondary Band	Grade points (22 points)	Marks
	A1	22	at least 90%
	A2	21	85% – 89%
A	A3	20	80% – 84%
	A4	19	75% – 79%
	A5	18	70% – 74%
	B1	17	66% – 69%
B	B2	16	63% – 65%
	B3	15	60% – 62%
	C1	14	56% – 59%
C	C2	13	53% – 55%
	C3	12	50% – 52%
	D1	11	46% – 49%
D	D2	10	43% – 45%
	D3	9	40% – 42%
	E1	8	36% – 39%
E	E2	7	33% – 35%
	E3	6	30% – 32%
	F1	5	26% – 29%
F	F2	4	23% – 25%
	F3	3	20% – 22%
G	G1	2	10% – 19%
	G2	1	1% – 9%
H	0H	0	less than 1%

Understanding the Marking System – A Guide for Students

https://www.gla.ac.uk/media/Media_106264_smxx.pdf

Overall Grade for a Course

For each component of assessment the primary grade and secondary band will be converted to an integer between 0 and 22 as set out in the table above ("grade points"). The overall grade for a course is then the weighted average of these, rounded to the nearest integer, which is then converted back to a primary grade and secondary band. For each course, the weighting of each assessment will be specified.

Computation of overall grade in a course (example)

Suppose there are two in-course assessments graded on the 22 point scale each weighted 15% and an end-of-course examination graded on a percentage scale weighted 70%. Suppose that the results in these assessments are

D1, C2, and 67%, respectively.

The course grade will be calculated as follows:

$$
\begin{aligned}
\text{course result} &= (0.15 \times \text{D1}) + (0.15 \times \text{C2}) + (0.70 \times 67\%) \\
&= (0.15 \times 11) + (0.15 \times 13) + (0.70 \times 17) \\
&= 1.65 + 1.95 + 11.9 \\
&= 15.5 \\
&\approx 16 \text{ (rounded to an integer)} \\
&= \text{B2.}
\end{aligned}
$$

In the above calcuation, grades D1, C2 and 67% are converted to the grade-points 11, 13 and 17 respectively using the table above.

Publication of course grades

Grades are subject to moderation by the external examiner and thus all grades are provisional until confirmed by the external examiner. Final grades will be released on MyCampus. Please note that the process of releasing grades is external to the programme management team and it can take some time before your grades are released on MyCampus. For courses taken in semester 1 and semester 2, students can expect grades to be released on MyCampus in June. For courses taken in semester 3, students can expect grades to be released on MyCampus in September. We are unable to provide students with course grades until they are released on MyCampus.

Students who complete, in weight, less than 75% of the assessments of a course will be refused credit for this course.

Reassessment

For each course, reassessment will be made available to students obtaining an overall grade less than the threshold grade of C3 for that course. After the reassessment(s) have been completed, the overall grade for a course is calculated using for each component the better grade out of the original one and the one obtained after reassessment. If a student has taken reassessments, the overall grade points for the course will be capped at 12 (corresponding to a C3).

The grade points will *not* be capped if the student has taken reassessments only as a result of an accepted claim of good cause affecting the original assessment.

Students can only take reassessments in the same academic year as they have taken the course in. Specifically, it is not possible to take reassessments for courses taken in the first year at the end of the second year. The University Regulations allow you to attempt each course only once, unless there is good cause (see below), i.e. you cannot "repeat" a course in the following year.

If you are eligible for reassessment for a specific course, then the course lecture will provide you with reassessment arrangements for that course.

Students who obtain less than a C3 in a course might still qualify for the award of the MSc degree. On a part-time programme this means you have to take the decision as to whether or not to take reassessments before you know whether the grade would prevent you from being awarded the MSc degree.

Late Submission of Coursework

If you submit coursework late without good cause then your grade for this piece of work will be subject to a late submission penalty.

Submission no later than …	Penalty
1 working day after the deadline	Grade reduced by 2 secondary bands
2 working days after the deadline	Grade reduced by 4 secondary bands
3 working days after the deadline	Grade reduced by 6 secondary bands
4 working days after the deadline	Grade reduced by 8 secondary bands
5 working days after the deadline	Grade reduced by 10 secondary bands
more than 5 working days late	Grade H for this piece of work

Parts of a day are regarded as a day, i.e. if you submit one hour late or one minute late then your grade will be reduced by two secondary bands (so, for example, an A5 (18 on the 22-point scale) would become a B2 (16 in the 22-point scale)). The University does not count weekends as working days. Therefore, if an assessment is due at 23:59 on a Friday and a student submits at 9am on the following Monday then their grade will be reduced by two secondary bands.

Due to technological limitations, online quizzes close when they are due and thus no late submissions are allowed for online quizzes.

If you are unable to submit coursework on time due to circumstances beyond your control, or anticipate not being able to do so, you can ask for a short extension without the above penalties applying. Requests should be sent to the course lecturer. The decision as to whether an extension is granted is entirely at the discretion of the teaching team and might be restricted by technological limitations. Extensions for online quizzes can only be given if you give us enough prior notice. It is not possible to povide an extension once a deadline passes.

This more informal system operates in parallel to the formal system for dealing with good cause.

> Section on late submission of coursework from the Guide to the Code of Assessment
>
> https://www.gla.ac.uk/media/Media_124293_smxx.pdf#page=3&view=fitH,530

Good Cause

If illness or other adverse personal or professional circumstances have prevented you from attending an examination or submitting coursework (on time or at all), or similarly if illness or other circumstances have affected your performance in an assessment, you need to report this on MyCampus within one week of the assessment. Later claims must explain why you have been unable to notify the University within the specified deadline of one week.

The Board of Examiners or the Head of School represented by the School's Assessment Officer in charge of this programme will then determine whether the evidence presented by you constitutes 'good cause' as set out in the Code of Assessment.

If good cause has been established you will generally be given another chance to complete the assessment at the next available opportunity. This will then be considered as your first attempt, i.e. the resulting overall grade will not be capped as it would be the case if you had taken reassessment.

If good cause has been established and this good cause has prevented you from submitting a piece of coursework on time then no penalties for late submission will be applied.

Please note that it is not possible to "adjust" a grade based on the evidence provided. If you have completed an assessment and your claim for good cause covering this assessment is accepted then the grade you would have obtained at that attempt will be discarded. In this case it is best if you discuss your situation with the programme management team and your adviser of studies.

If a good cause claim is accepted, the next available opportunity to take the affected assessment will be during the reassessment period (please see the semester dates for reassessment periods).

Awards

Master of Science (MSc)

In order to qualify for the degree of Master of Science you must

- obtain a grade point average (GPA) of at least 12.0 (corresponding to a C3) in the taught 120 credits,
- obtain a grade of at least F3 in all of the 120 taught credits,
- obtain a grade of at least D3 in 90 out of the 120 taught credits, and
- obtain a grade of at least D3 in the dissertation.

Distinction You will be eligible for the award of the MSc with Distinction if at first attempt

- your grade point average across the entire 180 credits making up the MSc is at least 18.0 (corresponding to an A5),
- your grade point average across the taught 120 credits is at least 17.0 (corresponding to a B1), and
- your grade for the dissertation is at least B1.

If your overall grade point average is at least 17.1 and you meet the other two criteria, the award of a Distinction is at the discretion of the Board of Examiners.

Merit You will be eligible for the award of the MSc with Merit if at first attempt (i.e. discarding reassessments)

- your grade point average across the entire 180 credits making up the MSc is at least 15.0 (corresponding to a B3),
- your grade point average across the taught 120 credits is at least 14.0 (corresponding to a C1), and
- your grade for the dissertation is at least C1.

If your overall grade point average is at least 14.1 and you meet the other two criteria, the award of a Distinction is at the discretion of the Board of Examiners.

Postgraduate Diploma (PGDip)

In order to qualify for a postgraduate diploma you must

- obtain a grade point average of at least 9.0 (corresponding to a D3) in the taught 120 credits and
- obtain a grade of at least D3 in 80 out of the 120 taught credits.

Students aiming to graduate with a postgraduate diploma do not need to work on a dissertation.

Distinction You will be eligible for the award of the Postgraduate Diploma with Distinction if at first attempt your overage grade point average is at least 18.0 (corresponding to an A5). If your grade point average is at least 17.1 the award of a Distinction is at the discretion of the Board of Examiners.

Merit You will be eligible for the award of the Postgraduate Diploma with Merit if at first attempt your overall grade point average is at least 15.0 (corresponding to a B3). If your grade point average is at least 14.1 the award of Merit is at the discretion of the Board of Examiners.

Postgraduate Certificate (PGCert)

In order to qualify for a postgraduate certificate you must

- obtain a grade point average of at least 9.0 (corresponding to a D3) in 60 taught credits, and
- obtain a grade of at least D3 in 40 taught credits.

Students aiming to graduate with a postgraduate certificate do not need to take more than 60 credits. If you have taken more than 60 credits, the best 60 credits can be used to satisfy the above conditions.

Awards of a Distinction or Merit are governed by the same rules as for the Postgraduate Diploma, however only applied to the best 60 credits.

Progression

In order to continue to be a student registered on the programme you need to meet the progression requirements set out below

After completion of at least 60 credits (PGDip / MSc)

At the end of the year after which you have completed at least 60 credits you must have achieved a cumulative gradate point average of at least 7.0 (corresponding to an E2) across all credits completed so far.

After two years (PGCert / PGDip / MSc)

If you have not yet completed 60 credits after two years, you must have achieved a cumulative gradate point average of at least 7.0 (corresponding to an E2) across all credits completed in the first two years.

After 120 credits (MSc)

After having completed 120 credits you must have

- obtained a grade point average (GPA) of at least 12.0 (corresponding to a C3) in the taught 120 credits,
- obtained a grade of at least F3 in all of the 120 taught credits, and
- obtained a grade of at least D3 in 90 out of the 120 taught credits

to be allowed to enter the dissertation phase.

The decision as to whether you can start working on the project if you have not yet completed all the taught courses of the programme is at the discretion of the programme management team. Their decision will take into account the grades you have obtained in the courses you have already completed and will be based on whether it seems likely that you will meet the requirements once you have completed all courses. Please note that even if you have been allowed to start the project before completing all courses you still need to fulfill the above requirements so that you can be awarded an MSc. If you do not meet the above conditions once you have completed all courses, then you will not be able to obtain an MSc degree, but you will be considered for the Postgraduate Certificate or Postgraduate Diploma. If the work leading to your project is substantially complete, the University's regulations allow you to complete the project and a grade will be published. Otherwise, the work on the project shall be discontinued.

> **⬈ Generic Regulations**
>
> https://www.gla.ac.uk/myglasgow/senateoffice/policies/uniregs/regulations2019-20/scieng/genericpgtodl/
>
> The Generic Regulations for ODL programmes in the College of Science and Engineering contain all the regulations regarding progression and award of degrees.

Plagiarism

It is plagiarism to try to pass off someone else's work as your own. The other person could be an acknowledged authority (e.g. the writer of a textbook or scientific paper), model answers provided for other or past courses, a private tutor, a fellow student or anyone who seemed to know what they are talking about. Unauthorised collaboration

between students also counts as plagiarism, and it is your responsibility to ensure that you are clear about the extent of collaboration permitted. The University of Glasgow views plagiarism as a very serious offence and deals with it formally under the Code of Discipline. Students found guilty of plagiarism will lose marks, possibly all the marks available for the affected piece of work. In extreme cases, such students could be refused credit for a course. Students who submit work that appears to be plagiarised, in whole or in part, will be reported to the Senate Assessors for Discipline.

> University guidance on plagiarism
>
> https://www.gla.ac.uk/plagiarism/

> Information about plagiarism from the Students' Representative Council (SRC)
>
> https://www.glasgowstudent.net/advice/academic/plagiarism/

Software and IT requirements

Teaching material

All teaching materials will be made available online as a PDF file for downloading and offline use. You should be able to access these materials with any standard-compliant web browser and PDF viewer, both on desktop computers and mobile devices. We aim to roll out an interactive web version ("HTML format") of the notes although we cannot guarantee this will be available for all courses over this academic year.

Please note that teaching and assessment materials provided are for your own personal use and should only be used in relation to your studies. Any unauthorized distribution of course materials, including the uploading of them, without authorization, onto web sites and social media sites, or sites such as Course Hero, will be considered in breach of the Student Code of Conduct and will be subject to disciplinary action.

Videos

We use YouTube to host videos. All videos are produced in 1080p resolution ("full HD quality"), however the resolutions available when you play a video depends on the speed of your internet connection and other factors.

Please get in touch with us if YouTube is not available where you live and we will make the videos available to you using other means.

Software Requirements

Zoom

We use Zoom for synchronous live sessions and appointments between staff and students.

Zoom is available for Windows, MacOS and Linux as well as Android-based and iOS-based mobile devices. If you want to use Zoom on a desktop computer, please make sure you have a headphone and microphone and ideally also a webcam.

> Zoom for staff and students at the University of Glasgow
>
> https://uofglasgow.zoom.us/
>
> The University has a site license for Zoom and you can sign into Zoom using your University credentials at this address.

R

You will need access to a local installation of R (either "regular" CRAN R or Microsoft R Open) and it would be beneficial if you had also installed RStudio. R is available for a wide range of platforms and RStudio is available for Windows, Mac OS and Linux.

> **Website of the R project**
>
> https://www.r-project.org/

> **Microsoft R Open**
>
> https://mran.microsoft.com/open/

> **RStudio website**
>
> https://www.rstudio.com/
>
> You will only need the open-source edition of RStudio Desktop.

Python

When you take Data Programming in Python and Large Scale Computing yo0.0u require access to a local installation of Python. The course will use Python 3 as well as the following libraries Python libraries:

- `numpy`
- `pandas`
- `matplotlib`
- `seaborn`
- `scikit-learn`
- `statsmodels`

It is easiest if you install Anaconda Python, as it already comes with all the above libraries.

> **Anaconda Python**
>
> https://www.anaconda.com/downloads
>
> Anaconda is a Python distribution for data scientists, which already contains all the libraries required for Data Programming in Python.

SAS

You do not need to have access to the desktop version of SAS and we will not be able to provide you with one. However, SAS OnDemand for academics is free of charge to university students.

> **SAS onDemand for Academics**
>
> https://www.sas.com/en_gb/software/on-demand-for-academics.html
>
> You can use SAS OnDemand from SAS free of charge.

Other software

Individual courses might cover additional software. With the exception of SAS, we aim to only cover free, open-source software in our courses. However, the University has subscribed to a large number of site-license deals for software, some of which give you free access to proprietary software (such as MATLAB). Please note that none of this software will be required for this programme.

> **Software for Students at the University of Glasgow**

https://www.gla.ac.uk/myglasgow/it/software/

IT Services provide a list of software available to students.

Student Support

As an online student you have, in principle, access to the same support services as on-campus students in addition to a LinkedIn group for our programme.

In this section, we detail a comprehensive list of student services available to you. In order to deal with any issues or questions you may have, please contact the relevant service directly.

LinkedIn

Students on the programme are encouraged to join the programme LinkedIn group for networking and sharing links and ideas relevant to Data Analytics.

University of Glasgow - MSc in Data Analytics (online distance learning)

https://www.linkedin.com/groups/8684619/

UofG Helpdesk

The UofG Helpdesk is where students can search for answers using the knowledge base, or submit requests for help or services. In order to deal with your query as quickly as possible, we recommend you use the online helpdesk.

UofG Helpdesk, REACH OUT website

https://www.gla.ac.uk/myglasgow/students/reachout/

You can also submit a request through the Service Catalogue if you need more help.

If you do not have a GUID you can login as a guest to search the Knowledge Base or submit a request or report an issue via the Service Catalogue.

MyCampus

MyCampus can be used to manage your student record and university finances, or to produce your own certifying letters and transcripts. You can log in to MyCampus once you have received your GUID and password from student registry.

MyCampus login

http://sharepoint.gla.ac.uk/students/myglasgow/

Registration

To become a fully registered student of the University, you must register online:

- You will do this every year before the start of your programme of study
- You will use MyCampus - the University's student information system
- You will receive full details of how to log into MyCampus by email from student registration after you receive and accept an unconditional offer for this programme.

Every academic year, registration will be available for eligible students on a phased basis, and you will receive the email only if you have:

- Met all the conditions of offer
- Formally accepted the offer
- Met the requirements for progression

For new students, you will receive an "Access to your Student Account" email. This provides details of, your Glasgow Unique Identifier (GUID), your temporary password, how to access your student account, links to support and guidance materials and contacts.

For continuing students, you can check whether you have met requirements for progression to the next year of study by looking at your 'Academic Standing' in your MyCampus Student Center. You will see one of the codes listed in the Academic Standing table. If you have a debt remaining on your account you will not be able to register until this debt is cleared.

If you have not received an email 2 weeks before the start date, please raise a UofG Helpdesk request.

All students must register academically. After you have completed academic registration, you must register financially.

Financial Registration

All students must declare how they plan on paying for their studies. Below are some useful guidelines for common payment methods

- Credit Card
- Direct Debit
- Bank Transfer
- External sponsorship

> Student Finance
>
> https://www.gla.ac.uk/myglasgow/registry/finance/

The university provides some guidance on setting up financial agreements. Please refer to this guidance if you need to make a payment, setup a payment plan, print receipts or print an invoice.

External sponsorship

If your fees are being paid for you, then you need to provide details of an external sponsor or scholarship who will pay fees on your behalf. You may be required to upload a digital copy of your sponsor's award letter into MyCampus. If you have not yet applied for your fee sponsorship, you will not be able to complete the financial registration process. You will be unable to enroll for courses until you have completed financial registration.

Sponsored students can find out what's required on your award letter from your sponsor and how to complete financial registration.

If you an considering applying for an external sponsor or scholarship, then it is your responsibility to ensure you have an awards letter in place prior to the beginning of the programme. The management team are unable to offer any help with respect to external sponsorship.

Adviser of Studies

Your adviser of studies will be able to help advise you on academic matters. Depending on your circumstances, your adviser may not be the appropriate person to support you. However, they will be able to provide you with the contact details of someone that can, or a source for the information you require.

All students are allocated an adviser of studies after registration. You can identify your adviser of studies on MyCampus.

Student support officer

The Student Support Officer is here to help you feel supported during your studies and assist you in accessing any university services you may require. You can contact Mara if you need someone to talk to, or for practical advice on a number of non-academic issues.

This could include, but isn't limited to, guidance and information regarding:

- Managing wellbeing
- Accessing the counselling service
- Accessing support for a disability

- Finances and Financial Aid
- Personal problems
- Careers information and the Careers Service
- Study supports

The Student Support Officer works closely with staff from Student Services at the University and can offer advice, support, and signposting to the relevant services and teams as required.

You can email Mara with your enquiry, or to request a 1-2-1 appointment (available via Zoom)

> maths-stats-studentsupport@glasgow.ac.uk

Counselling Service

The University has a dedicated Counselling and Psychological Service, which can help you in a wide range of difficulties such as loneliness, anxiety, depression, suicidal feelings, problems in relationships, family problems and troubling past experiences, bereavements and losses, life changes such as pregnancy and illness, sexual and cultural identity, as well as academic difficulties. The service provides both self-help resources as well as individual appointments.

> University Counselling and Psychological Service
>
> https://www.gla.ac.uk/myglasgow/counselling/

Student Representative Council (SRC)

The SRC is the student body of the University and can support you in a variety of ways.

> SRC Website
>
> https://www.glasgowstudent.net/

SRC Advice Centre

The SRC employ professional advisers to help you through any problems you might be having. These can range from welfare issues such as money and accommodation to representation in academic appeals and disciplinary matters. This is a free service and no appointment is necessary. As an online students it is easiest if you contact the Advice Centre by phone on +44 (0) 141 330 5360 or by email at advice@src.gla.ac.uk.

> SRC Advice Centre
>
> https://www.glasgowstudent.net/advice/the-advice-centre/

Student Disability Service

if you have a disability or medical condition which might affect you studies, please inform the University's Disability Service so that appropriate support can be arranged for you.

> University Disability Service for Students
>
> https://www.gla.ac.uk/myglasgow/disability/

LEADS for Students

The University's Learning Enhancement and Academic Development Service (LEADS) provides students with additional academic support and advice such as study skills or writing skills.

Careers Service

The University's Careers Service offers appointments and coaching sessions with careers managers, comprehensive online resources and opportunities to connect with alumni as well as support for entrepreneurial students.

University Careers Service

https://www.gla.ac.uk/myglasgow/careers/

Students are welcome to access the online maths and stats support sessions. You can book a one-to-one appointments through the MyCampus Appointment Booking System.

Please see LEADS for more information on subject specific classes and drop-ins for courses that use a lot of maths, stats and numeracy.

Student Card Distribution

Your Campus Card grants you access to University facilities such as the library and sports facilities, and will entitle you to student discounts in a wide variety of shops, bars, cinemas and online.

You must upload a a passport-style photograph which will be used to generate your Campus Card.

Campus Cards for most students will be posted to the term address that you enter during registration, so it is important that your address is entered accurately.

Graduation

For students who have completed the MSc programme, you can enroll for graduation. If you have any questions about graduation, please email graduation@glasgow.ac.uk.

For students who have completed the PgCert or PgDip programme, then graduation is processed differently. If you have any questions then please contact the management team.

Graduation information

https://www.gla.ac.uk/events/graduations/

Withdrawing from the University

Withdrawal is the formal process for leaving your programme of study and the University. Please read the Thinking of changing or leaving your programme of study? leaflet for more information on the support and options that are available to you.

If you plan to withdraw because of financial difficulties you are advised to contact the Financial Aid Team, who may be able to provide assistance.

To submit a withdrawal request, log in to My Student Center then click on My Withdrawal Form

If you are considering withdrawing from the programme, please contact your adviser of studies who can offer some guidance and support that may mean you can continue with your studies.

Refund

Your tuition fee liability will be recalculated as part of the withdrawal process. Depending on the date of your withdrawal, and how you are funding your studies, you may find you have to pay outstanding tuition fee or other charges or your account may be in credit. If you are in credit, you need to request a refund via the Helpdesk.

Further information on how withdrawal will affect tuition fee liability is available in the Refund Policy.

Re-entering the University

If you decide to re-enter the University following your withdrawal, you should apply for readmission.