Durham University
Postgraduate Modules
Online
www.durham.ac.uk/postgraduate.modules

These programme regulations should be read in conjunction with the University's core regulations for postgraduate programmes, and the marking and classification conventions for postgraduate programmes.

MSc Scientific Computing and Data Analysis (Astrophysics) (G5T309)

MSc Scientific Computing and Data Analysis (Financial Technology) (G5T209)

MSc Scientific Computing and Data Analysis (Earth and Environmental Sciences) (G5T109)

MSc Scientific Computing and Data Analysis (Particle Physics) (G5T409) [*Not available in 2023/24 academic year*]

MSc Scientific Computing and Data Analysis (Computer Vision and Robotics) (G5T509)

1. Location: Durham City

2. Duration: 12 months (full-time)

Programme structure

3. All candidates shall study and be assessed in the following modules:

		Credit Value
Introduction to Machine Learning and Statistics ~	PHYS51915	15
Introduction to Scientific and High Performance Computing ~	PHYS52015	15
Professional Skills	COMP51915	15
Project ~	COMP52060	60

Astrophysics (G5T309)

4. Candidates on the Astrophysics Stream shall also study and be assessed in the following modules:

		Credit Value
Astrophysics	PHYS51545	45

5. Candidates shall also study and be assessed in modules to the value of 30 credits from the following list:

		Credit Value
Advanced Statistical and Machine Learning: Foundations and Unsupervised Learning	MATH52015	15
Advanced Statistics and Machine Learning: Regression and Classification	MATH52115	15
Data Acquisition and Image Processing	PHYS52115	15
Performance Modelling, Vectorisation and GPU Programming	COMP52315	15
Advanced Algorithms and Discrete Systems	COMP52215	15
Computational Linear Algebra and Continuous Systems	COMP52515	15

Particle Physics (G5T409) [*Suspended for the 2023/24 academic year*]

6. Candidates on the Particle Physics Stream shall also study and be assessed in the following modules:

		Credit Value
Particle Physics	PHYS51645	45

7. Candidates shall also study and be assessed in modules to the value of 30 credits from the following list:

		Credit Value
Advanced Statistical and Machine Learning: Foundations and Unsupervised Learning	MATH52015	15

Advanced Statistics and Machine Learning: Regression and Classification	MATH52115	15
Data Acquisition and Image Processing	PHYS52115	15
Performance Modelling, Vectorisation and GPU Programming	COMP52315	15
Advanced Algorithms and Discrete Systems	COMP52215	15
Computational Linear Algebra and Continuous Systems	COMP52515	15

Earth and Environmental Sciences (G5T109)

8. Candidates on the Earth and Environmental Sciences Stream shall also study and be assessed in the following modules:

		Credit Value
Earth and Environmental Sciences	GEOL50130	30

9. Candidates shall also study and be assessed in modules to the value of 45 credits from the following list:

		Credit Value
Advanced Statistical and Machine Learning: Foundations and Unsupervised Learning	MATH52015	15
Advanced Statistics and Machine Learning: Regression and Classification	MATH52115	15
Data Acquisition and Image Processing	PHYS52115	15
Performance Modelling, Vectorisation and GPU Programming	COMP52315	15
Advanced Algorithms and Discrete Systems	COMP52215	15
Computational Linear Algebra and Continuous Systems	COMP52515	15

Financial Technology (G5T209)

10. Candidates on the Financial Technology Stream shall also study and be assessed in the following modules:

		Credit Value
Financial Mathematics	MATH52230	30
Financial Technologies 2	FINN43715	15

11. Candidates shall also study and be assessed in modules to the value of 30 credits from the following list:

		Credit Value
Advanced Statistical and Machine Learning: Foundations and Unsupervised Learning	MATH52015	15
Advanced Statistics and Machine Learning: Regression and Classification	MATH52115	15
Data Acquisition and Image Processing	PHYS52115	15
Performance Modelling, Vectorisation and GPU Programming	COMP52315	15
Advanced Algorithms and Discrete Systems	COMP52215	15

Computer Vision and Robotics Specialisation (G5T509)

12. Candidates on the **Computer Vision and Robotics** Stream shall also study and be assessed in the following modules:

		Credit Value
Computer Vision	COMP52615	15
Robotics - Planning and Motion	COMP52815	15
Deep Learning for Computer Vision and Robotics	COMP52715	15

13. Candidates shall also study and be assessed in modules to the value of 30 credits from the following list:

		Credit Value
Advanced Statistical and Machine Learning: Foundations and Unsupervised Learning	MATH52015	15
Advanced Statistics and Machine Learning: Regression and Classification	MATH52115	15

Data Acquisition and Image Processing	PHYS52115	15
Performance Modelling, Vectorisation and GPU Programming	COMP52315	15
Advanced Algorithms and Discrete Systems	COMP52215	15
Computational Linear Algebra and Continuous Systems	COMP52515	15

Assessment, progression and award

14. Modules marked with a ~ must be passed at 50% or above; a mark of 40-49% cannot be compensated.

15. If a candidate fails a module he/she may be given the opportunity to resit the relevant examination(s) before the end of the academic year at a time to be determined by the Department.

16. There is no resit opportunity for the project (COMP52060).