

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 (G5K609)**

**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 2022/23 academic year]**

**MSc Scientific Computing and Data Analysis (Computer Vision and Robotics) (G5T509) [First intake in 2023/24]**

1. Location: Durham City
2. Duration: 12 months (full-time)

**Programme structure**

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

		<b>Credit Value</b>
Introduction to Machine Learning and Statistics ~	<a href="#">PHYS51915</a>	15
Introduction to Scientific and High Performance Computing ~	<a href="#">PHYS52015</a>	15
Professional Skills	<a href="#">COMP51915</a>	15
Project ~	<a href="#">COMP52060</a>	60

**Astrophysics (G5T309)**

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

		<b>Credit Value</b>
Astrophysics	<a href="#">PHYS51545</a>	45

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

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

**Particle Physics (G5T409) [Suspended for the 2022/23 academic year]**

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

		<b>Credit Value</b>
Particle Physics	<a href="#">PHYS51645</a>	45

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

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

		<b>Credit Value</b>
Earth and Environmental Sciences	<a href="#">GEOL50130</a>	30

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

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

### **Financial Technology (G5T209)**

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

		<b>Credit Value</b>
Financial Technology: Algorithmic Trading and Market Making in Options [Not available in 2022-23 academic year]	<a href="#">COMP52415</a>	15
Financial Mathematics	<a href="#">MATH52230</a>	30

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

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

### **Computer Vision and Robotics Specialisation (G5T509) [First intake in 2023/24 academic year]**

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

		<b>Credit Value</b>
Computer Vision	<a href="#">COMP52615</a>	15
Robotics - Planning and Motion	<a href="#">COMP52815</a>	15
Deep Learning for Computer Vision and Robotics	<a href="#">COMP52715</a>	15

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

		<b>Credit Value</b>
Advanced Statistical and Machine Learning: Foundations and Unsupervised Learning	<a href="#">MATH52015</a>	15
Advanced Statistics and Machine Learning: Regression and Classification	<a href="#">MATH52115</a>	15
Data Acquisition and Image Processing	<a href="#">PHYS52115</a>	15
Performance Engineering and Advanced Algorithms	<a href="#">COMP52315</a>	15
Continuous and Discrete Systems	<a href="#">COMP52215</a>	15

### **Assessment, progression and award**

14. Candidates entering on the MSc Scientific Computing and Data Analysis (G5K609) programme will be allocated to one of the specified routes following module registration and identification of their specialisation.
15. Modules marked with a ~ must be passed at 50% or above; a mark of 40-49% cannot be compensated.
16. 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.
17. There is no resit opportunity for the project ([COMP52060](#)).