

These programme regulations should be read in conjunction with the University's [core regulations for undergraduate programmes](#), and the [marking and classification conventions for undergraduate programmes](#).

## **MSci Mathematics and Physics (G430)**

### **MSci Mathematics and Physics with Placement (G431)**

1. This programme is available at Durham City, in a full-time mode of study.
2. All module selections must be timetable compatible and approved by the Director of Natural Sciences or by their nominee to ensure a credible pathway through to 120 credits of Year 4 modules.

#### **Level 1 (Certificate)**

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

		<b>Credit value</b>
Linear Algebra I #	<a href="#">MATH1071</a>	20
Calculus I #	<a href="#">MATH1061</a>	20
Analysis I *	<a href="#">MATH1051</a>	20
Foundations of Physics 1 #	<a href="#">PHYS1122</a>	40
Discovery Skills in Physics *	<a href="#">PHYS1101</a>	20

#### **Level 2 (Diploma)**

4. Candidates shall study and be assessed in:

		<b>Credit value</b>
Analysis in Many Variables II	<a href="#">MATH2031</a>	20
Complex Analysis II	<a href="#">MATH2011</a>	20
Foundations of Physics 2A *	<a href="#">PHYS2581</a>	20
Foundations of Physics 2B	<a href="#">PHYS2591</a>	20

5. **Either:** Candidates shall also study and be assessed in the following modules:

		<b>Credit value</b>
Mathematical Physics II	<a href="#">MATH2071</a>	20
Modules from the Level 2 MPhys of Physics (F301) regulations		20

**Or:** Candidates shall also study and be assessed in the following modules:

		<b>Credit value</b>
Theoretical Physics 2 *	<a href="#">PHYS2631</a>	20
Modules from the Level 2 Master of Mathematics (G103) regulations		20

#### **Level 3 (Degree)**

6. Candidates shall study and be assessed in modules to the value of 60 credits from List A:

<b>List A:</b>		<b>Credit value</b>
Analysis III	<a href="#">MATH3011</a>	20
Differential Geometry III	<a href="#">MATH3021</a>	20
Dynamical Systems III	<a href="#">MATH3091</a>	20
Fluid Mechanics III	<a href="#">MATH3101</a>	20
Geometry of Mathematical Physics III	<a href="#">MATH3471</a>	20
Mathematical Biology III	<a href="#">MATH3171</a>	20
Mathematical Finance III	<a href="#">MATH3301</a>	20
Mathematics into Schools III	<a href="#">MATH3481</a>	20
Operations Research III	<a href="#">MATH3141</a>	20

Partial Differential Equations III	<a href="#">MATH3291</a>	20
Quantum Computing III	<a href="#">MATH3391</a>	20
Solitons III	<a href="#">MATH3231</a>	20
Topology III	<a href="#">MATH3281</a>	20
Science Enterprise	<a href="#">NSCI3001</a>	20

7. Candidates shall also study and be assessed in the following modules:

	<b>Credit value</b>
Foundations of Physics 3A	<a href="#">PHYS3621</a> 20

8. **Either:** If the candidates studied Theoretical Physics 2 (PHYS 2631) at Level 2, they shall also study and be assessed in the following modules:

	<b>Credit value</b>
Theoretical Physics 3	<a href="#">PHYS3661</a> 20
Modules from Level 3 MPhys Physics (F301) regulations	20

**Or:** If the candidates studied Mathematical Physics II (MATH 2071) at Level 2, they shall also study and be assessed in the following modules:

	<b>Credit value</b>
Modules from Level 3 MPhys Physics (F301) regulations, which may include NSCI 3001 Science Enterprise	40

#### Placement – Year 3 or Year 4

9. Candidates admitted to the MSci Mathematics and Physics (G430) can apply to transfer to the MSci Mathematics and Physics with Placement (G431). Students undertaking the MSci Mathematics and Physics with Placement (G431) will undertake an approved placement chosen in consultation with the Director of Natural Sciences or their nominee and the host partner.
10. Candidates wishing to transfer to the MSci Mathematics and Physics with Placement (G431) as their third year must:
  - a. Have successfully completed Level 1 of the MSci Mathematics and Physics (G430) and progressed to Level 2 of the Honours or BSc programme; and
  - b. During the first term of Level 2 study, the student must discuss their intention to apply with the Director of Natural Sciences or their nominee in order to be admitted to the MSci Mathematics and Physics with Placement (G431) and receive approval by the Director of Natural Sciences or their nominee; and
  - c. Secure a year-long placement opportunity (40 weeks or more) approved by the Director of Natural Sciences or their nominee with an approved employer; and
  - d. Successfully complete Level 2 to be eligible to progress to Level 3 of the MSci Mathematics and Physics (G430) Honours programme.
11. Students who the Board of Examiners for Natural Sciences deem to have made satisfactory progress on the placement will continue to Level 3 of the MSci Mathematics and Physics with Placement (G431). Students who have not made satisfactory progress on the placement will not be permitted to continue on the MSci Mathematics and Physics with Placement (G431) programme, but must instead proceed to Level 3 of the MSci Mathematics and Physics (G430) programme.
12. Candidates wishing to transfer to the MSci Mathematics and Physics with Placement (G431) as their fourth year must:
  - a. Have successfully completed Level 2 of the MSci Mathematics and Physics (G430) and progressed to Level 3 of the Honours programme; and
  - b. During the first term of Level 3 study, the student must discuss their intention to apply with the Director of Natural Sciences or their nominee in order to be admitted to the MSci Mathematics and Physics with Placement (G431) and receive approval by the Director of Natural Sciences or their nominee; and
  - c. Secure a year-long placement opportunity (40 weeks or more) approved by the Director of Natural Sciences or their nominee with an approved employer; and
  - d. Successfully complete Level 3 of the MSci Mathematics and Physics (G430) programme to be eligible to progress to Level 4 of the MSci Mathematics and Physics (G430) Honours programme.

e. register for the module "Natural Sciences Placement MSCI (NSCI 3996)"

13. Students who the Board of Examiners deem to have made satisfactory progress on the placement will continue to Level 4 of the MSci Mathematics and Physics with Placement (G431). Students who have not made satisfactory progress on the placement will not be permitted to continue on the MSci Mathematics and Physics with Placement (G431) programme, but must instead proceed to Level 4 of the MSci Mathematics and Physics (G430) programme.

**Level 4 (Degree)**

14. **Either:** Candidates shall study and be assessed in the following modules:

		<b>Credit value</b>
Mathematics Project	<a href="#">MATH4072</a>	40
Modules from the Level 4 MPhys of Physics (F301) regulations		40
40 credits from		
<b>List B:</b>		
Advanced Quantum Theory IV	<a href="#">MATH4061</a>	20
Algebraic Topology IV	<a href="#">MATH4161</a>	20
Functional Analysis and Applications IV	<a href="#">MATH4371</a>	20
General Relativity IV	<a href="#">MATH4051</a>	20
Riemannian Geometry IV	<a href="#">MATH4171</a>	20
Statistical Mechanics IV	<a href="#">MATH4231</a>	20
Superstrings IV	<a href="#">MATH4271</a>	20
Topics in Applied Mathematics IV	<a href="#">MATH4381</a>	20
Advanced mathematical biology IV	<a href="#">MATH4441</a>	20
Geophysical and Astrophysical fluids IV	<a href="#">MATH4421</a>	20

- Or:** Candidates shall study and be assessed in the following modules:

		<b>Credit value</b>
Project	<a href="#">PHYS4213</a>	60
Modules from List B above		40
Modules from Level 4 MPhys Physics (F301) regulations		20

**Assessment, progression and award**

15. Modules marked with the # symbol must be passed at no less than 40% in order to progress to the next level of study.
16. Modules marked with the \* symbol must be passed at no less than 40% in order to progress to the next level of study. Students who have not passed will not be permitted to continue on the MSci in Mathematics and Physics (G430) programme, but must instead proceed to Level 2 of the MSci Natural Sciences (FGC0) programme.